INDUSTRIAL-SIZED

ISK EVE GUIDE

EDITORS: LACI & MERMALIOR

KNOWLEDGEBASE VOLUME I

- Advice for Beginners
- Golden Rules Of EVE
- Corporations
- Basics of Fitting
- Weapons
- Tanking Methods
- All About Mining
- Ores and Minerals
- Types of Missions
- Agents
- Types of Planets
- Extracting
- Engineering
- Basics of Trading

EVE INDUSTRIAL BLACK BOOK

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Whether you're a beginner in EVE getting acquainted with the game for the first time, a trader who is testing the economic waters, maybe a fierce pirate, a determined miner, or even a seasoned pilot with years of experience in mission running under your belt, there is something to learn here. However much you play, there are no pilots who have successfully completed everything or who have trained every skill this universe has to offer. This book, the Industrial-Sized Knowledgebase, is beneficial to all pilots. It covers nearly everything a pilot may experience within New Eden. If you wish to know something, just look it up here. You do not have to be familiar with everything contained within these pages, just open the book and you will find your answer.

As a new pilot you will have many questions to which you do not yet have the answers. Even basic functions and expressions will be unfamiliar to you. Even knowing what questions to ask may not be clear at first. Do not worry. All you need to know is this: read first, then ask. The answers are only a page away.

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Laci™

THE BEGINNING

CHAPTER 1

EVE

INDUSTRIAL
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ISK VOL I

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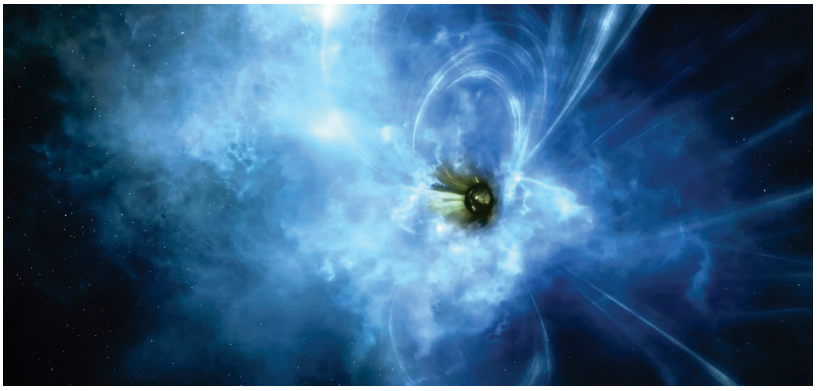
The Dawn Of A New Era

When space travel became a profitable enterprise due to asteroid mining and production in a vacuum-environment, it took no time at all for humanity to settle down on most of the planets and moons of our solar system. The ensuing economic boom allowed for great advances in technological research. Soon it became possible to travel vast distances in space. In the beginning, before warp (space-bending) technology, the distance between two star systems seemed an unconquerable obstacle. Later, jump gates, merging gravity with negative energy, created stable wormholes which made travel between two distant places of space feasible within moments. Humanity swarmed out to distant star systems at an increasing rate.

The next breakthrough was the development of jump drives based on warp technology. The early versions of jump drives were only capable of handling short distances, but later it became possible to jump between star systems without the need for jump gates. This enabled human expansion to spread across the universe like a viral outbreak. Soon, human settlements appeared in hundreds of star systems, dozens of which grew into huge colonies. Unfortunately, the process of expansion became more and more difficult due to bureaucracy. Almost every star system within jump range was now sold out before the actual colonization took place. Many had to wait years for their chance at a new home on a new world.



This all changed suddenly when a new, natural wormhole was discovered near the Canopus system. Although this phenomena had already been proven to exist, this was the first occasion such a miracle had been found. The probes sent into the wormhole showed that the passage through it was stable, and that a new galaxy awaited explorers on the other side. Speculation was endless. This could be a galaxy far from our Milky Way, a galaxy clear across the universe, maybe another dimension, or even a parallel universe.

The wormhole was called EVE, because new worlds meant new beginnings for many. A decision was made to build jump gates on both sides of EVE, but travel would be restricted only to special, reinforced ships fit to travel through the wormhole. Then came the news that scientists predicted EVE would close within a few decades. To maximize the opportunities EVE offered, people and equipment were transported to the other side and bases were established in the new system.

The system on the other side of EVE was appropriately dubbed New Eden. The two gates built on either side of EVE had to be huge, since the nature of the wormhole was rather unpredictable. These were the greatest structures mankind had ever built. It took two hundred years even with the new, greater economic potential of humanity to construct them. New Eden was declared free for everyone who could venture there. Those who reached unclaimed spots first got the right to build a base there. Hundreds of companies started their own exploration and colonizing ventures to the new worlds as soon as the gates opened.

Although EVE closed while construction of New Eden was still in progress, the gates remained operational, but after 70 years of flawless operation, tragedy struck. An unexplained phenomenon destroyed the gates and caused a severe magneto-gravitational anomaly. The phenomenon made the gates useless, but, worse, it collapsed the fragile stability of the newly prospering society in New Eden. The EVE gates still exist, but ships daring to fly close to them are destroyed by the harmful gravitational storms.

The effect of this catastrophe was instant and dramatic. Every settlement that was dependent on the highly developed industry of New Eden or on the Old World, found itself isolated. Most of the colonies, due to their relative newness, were not yet self-sustainable. The lack of oxygen, food and water sentenced many of the colonies to extinction. Those few settlements which survived slowly lost their knowledge and ability to produce hi-tech industry, because they lacked the tools or equipment to sustain it.

The surviving enclaves lived separately from each other for eons. As time passed, environmental influences caused minor changes in their appearance and made them different from each other. Eventually, the survivors reclaimed space travel and re-entered the cosmos of New Eden.

The Races Of EVE

The world of EVE is inhabited by five major races: Amarr, Caldari, Minmatar, Gallente and Jove. All of these races are of human origin; their ancestors entered this little part of the universe thousands of years ago through the natural wormhole. Though most of the first settlements collapsed when the wormhole suddenly closed, a few survived. Today's races are the descendants of those scattered colonies.

The Amarr Empire

The largest of the five main empires, the Amarr Empire is a sprawling patchwork of feudal-like provinces held together by the might of the Emperor. Spanning 40% of the inhabited solar systems. Religion has always played a big part in Amarrian politics and the Amarrians believe they are the rightful masters of the universe, souring their relations with their neighbours. Another source of ill-feeling on the part of the other empires is the fact that the Amarrians embrace slavery. The Amarr Emperor is the head of a ritualistic, authoritarian imperial state, and below him are the Five Heirs, the heads of the five royal families from which a new emperor is chosen. The Emperor's authority is unquestioned and absolute, but the archaic and bureaucratic system of government makes it difficult for him to exert his rule unless directly in person.

Otherwise, the Five Heirs rule in his name, dividing the huge empire between them. The Emperor and the Five Heirs can expect to live for at least 500 years. Extensive cyber-implants keep their frail bodies alive, even when their organs begin to fail. These cyber enhancements date back many millennia, and have become a symbol of royal divinity in the eyes of the Amarrians.

Always a deeply religious people, religion remains of great importance to every Amarrian, a fervour which, at various times, has been responsible both for great good and great evil. Shortly after recovering from the closure of EVE, they began to expand their realm at the expense of neighbouring states. The nations they conquered were enslaved, a practice justified by their religion. Ever since, the Amarrians have enslaved every nation and race they have encountered and today slavery is an essential part of Amarr society. This has, of course, tainted their relations with other races, especially the individualistic Gallenteans.

The Amarrians were the first of the races in EVE to re-discover warp technology, notably jump gate technology. After accomplishing this more than 2,000 years ago, they immediately began expanding to nearby solar systems, slowly building up their empire in the process. On the way, they encountered two human races, both of whom suffered the fate of being enslaved by the far more powerful Amarrians. In recent years however, the Amarrians have begun to run into serious opposition. First they met the Gallente Federation. Although smaller, the Amarrians soon found the economic and military might of the Gallenteans to be a match for their own. Soon after, the Jovians arrived on the scene and the Amarrians made a futile attempt to subjugate them, resulting in a humiliating defeat. To make matters worse, the Minmatars, enslaved for centuries by the Amarrians, used the opportunity to rebel against their masters. Since these fateful events two centuries ago, the Amarrians have learned restraint. They have slowed down their expansion and are less forceful in their dealings with other races, but still view themselves as the most powerful race in EVE, if only because of their sheer numbers.

The Caldari State

The Caldari State is ruled by several mega-corporations. There is no central government to speak of – all territories within the State are owned and ruled by corporations. Duty and discipline are required traits in Caldari citizens, plus unquestioning loyalty to the corporation they live to serve. The corporations compete aggressively amongst themselves and with companies outside the State, resulting in a highly capitalistic society. Each corporation is made up of thousands of smaller companies, ranging from industrial companies to law firms. All land and real estate is owned by a company which leases it to the citizens, and government and policing are also handled by independent companies. Although this gives the corporations dictatorial powers, they are just as bound by Caldari customs and laws as the individual, and the fierce, continual competition between the corporations ensures a healthy, consumer-based social environment, which benefits everyone. While the Caldari State may not be nearly as big as that of the Gallenteans, let alone the Amarrians, they are still universally feared and admired.

Caldari society is steeped in military tradition. As a people, its members had to fight a long and bloody war to gain their independence, and even had to surrender their home planet to their hated enemies, the Gallenteans. It was at this time that the corporations established themselves as the driving force behind creating and maintaining the new Caldari State. Even if the Caldari have not engaged in war for many decades, they still strive to be at the cutting edge of military technology and their vessels, weapons and fighting methods are inferior to none but the enigmatic Jovians.

To curb their aggressive tendencies, the Caldari actively pursue and sponsor a range of sporting activities. Many of these are bloody, gladiatorial-like competitions, while others are more like races. But whatever the sport, the Caldari love betting on the outcome, making gambling a massive industry in the state. The State offers its citizens the best and the worst in living conditions. As long as you keep in line, do your job, uphold the laws and so forth, life can be fairly pleasant and productive. But for those who are not cut out for this strict, disciplined regime, life quickly becomes intolerable. They lose their respect, family, status, everything, and the only options left to them are suicide or exile.

Although not exactly xenophobic as such, the Caldari are very protective of their way of life and tolerate only those foreigners that stick to the rules.

The Gallente Federation

A The Gallente Federation encompasses several races, the Gallenteans being the largest by far. The Federation is democratic and very liberal in a world full of dictators and oligarchies. The Caldari State was once part of the Federation, but a severe dispute resulted in their departure and a long war between the Gallente Federation and the Caldari State.

The Gallenteans are the masters of pleasure and entertainment and their rich trade empire has given the world many of its most glorious and extravagant sights. Self-righteous, meddling, pompous and tiresome, or virile liberalists and defenders of the free world. Love them or hate them, you simply can't ignore them. Everybody has an opinion on the Gallente Federation, it all depends from which side of the table you view them. For many, it is the 'Promised Land', where any dream can become a reality. Descendants of Tau Ceti Frenchmen, the Gallenteans remain strong believers in free will and human rights, despite numerous setbacks in their long history. It has been said that, once you have seen the Crystal Boulevard in Caille, you've seen it all. True, the view is spectacular, but if there's one thing you can never see in its entirety, it is the Gallente Federation. You may travel its length and breadth, marvel at the Sunspiral on Troux, climb the Akat Mountains on tropical Intaki, or thrill to the Mendre dancers on Sovicou. Wherever you go, you will always see something new and exciting, even when you visit the same place again. Gallente society is in a constant state of flux – vigorous, vibrant and progressive.

In the world of EVE, the Gallentean are the kings of entertainment, mass-producing everything from cheap porn-flicks to elaborate stage-shows for an ever-hungry public. They boast the most elaborate luxury space yachts, and the most glittering hotel reservoirs. Anything your mind or body could ever crave, the Gallenteans have plenty of it. The Gallenteans are not alone in their Federation, whose boundaries are home to pockets of residents, varying in size and representing all the other races of EVE, most of whom left their own empires due to political or ideological differences, or simply in search of peace and prosperity. In addition to these, there are two human races, the Intakis and the Mannars, both of whom the Gallenteans found while exploring and expanding their empire. Both were at a very primitive level when the Gallenteans found them, but since coming under the protection and guidance of the Gallenteans, both races have flourished and today are fully-fledged members of the Federation.

The Caldari were initially part of the Federation, but deep-seated differences and mutual animosity between them and the Gallenteans drove them out to form their own empire. For a time, the two warred against each other, but as neither could gain sufficient advantage to claim victory, peace was settled in the end.

The Minmatar Republic

A tough, no-nonsense race, the Minmatars are a determined and independent people. Their home planet of Matar is a natural paradise, although centuries of abuse have taken much from its beauty. The Minmatar Republic was formed over a century ago when the Matari threw out their Amarrians overlords in what is known as the Minmatar Rebellion. The Matari had the support of the Gallente Federation and to this day, the two nations remain close allies. Yet, only a quarter of the Matari people reside within the Republic. The rest are scattered around the galaxy, including a large portion still enslaved within the Amarr Empire.

Minmatar individuals are independent and proud, possessing a strong will and a multitude of tribal traditions. For the Minmatars, the most important thing in life is to be able to take care of yourself on your own, and although kin and family play an important role in their society, they prefer identifying themselves by the clan or tribe to which they belong. A clan can have any number of people in it, and its size is largely dictated by the main activity of its members. Most specialize in one area of activity. While those who live on a planet can focus on agricultural or industrial activity, others who travel around the universe of EVE concentrate on trading, pirating, and suchlike. In the distant past, the clans constantly warred against each other. Since then, however, Minmatars have learned that cooperation is more important, and although the clans still try to maintain their regional and ideological identities, they act as a single unit towards other races. The fortunes of the Minmatars have ebbed and flowed continuously. At one time they had a flourishing empire with a level of mechanical excellence never before or since seen anywhere. Later, however, they had to endure centuries of enslavement, toiling and dying for the benefit of foreign masters. Today, most of them have regained their freedom, but the legacy of their enslavement has been the diaspora of the race.

The Minmatars are the most numerous of all the races in the universe of EVE, but their vast numbers are divided into many factions. While the Minmatar Republic is the official state, only a quarter of all Minmatars are part of it. The largest proportion, almost a third, are enslaved within the huge Amarr Empire, while a fifth resides within the Gallente Federation, creating a powerful political bloc which keeps relations between the Gallenteans and the Amarrians in a constant state of tension. The remainder, who are not part of any formal organization, live as freemen.

Many are itinerant labourers, roaming from one system to another in search for work. A fair number make their living on the darker side of the law, acting as pirates, smugglers and peddlers in all kinds of illegal goods and many of the larger criminal groups in the world of EVE are run by Minmatars.

The Jove Directorate

The Jovian Directorate is isolated from the rest of the universe to all but a selected few. The Jovians are a mystery to the other races, fuelled not only by their elusiveness, but also their highly advanced technology, eons ahead of the other races. The Jovians have been civilized longer than any other race in the whole of EVE and have gone through several golden ages, now long-since shrouded in the past.

The current Jovian empire is only a pale shadow of its former self, mainly because of the Jovian Disease – a psychological disorder that is always fatal. The most mysterious and elusive of all the peoples of EVE, the Jovians number only a fraction of any of their neighbours, but their technological superiority makes them powerful beyond all proportion. Although definitely human, the Jovians often seem to the other races as though they are not, the reason being that they embraced genetic engineering as the way to solve any and all the problems which plague the human race. Over the thousands of years since, the Jovians have experimented with every kind of genetic modification their technology allowed.

As their powers grew, they began to believe they were capable of anything, and this led them into increasingly more bizarre mutations of their bodies and minds, a policy rigorously backed up by strict governmental control. But one fateful moment in their history made them lose this control for a few generations, and the results were catastrophic. By this time the Jovians had begun interfering with their basic instincts, curbing their aggression and sexual instincts and cultivating strange new ones instead.

Since the Shrouded Days, as the Jovians call their momentary social eclipse, they have been trying to put the pieces together again, but their DNA-structure has in many ways been damaged beyond repair. The consequence is the dreaded Jovian Disease. Genetic in nature, it is not infectious to other races, but among Jovians it causes a depression so deep and serious that the victim loses the will to live and death results within a few days or weeks.

Despite this, the Jovians escaped the chaos that followed the closure of EVE remarkably well. Within the space of only a few centuries they had recovered, and were once again running a hi-tech society. They settled in a number of systems and founded an empire lasting for nine millennia, but even if the Jovians are by far the most technologically advanced of the races of EVE, they have still not recovered the splendour of their first empire. The disease within them keeps them in a reproductive straightjacket, preventing them from increasing their numbers sufficiently for their current empire to truly flourish.

The Jovians crave knowledge, any knowledge at all. Their superior technology has enabled them to infiltrate the other races with bugging devices and sensors, giving them unrivalled access to information, which they use to maintain their strong position among the races. The Jovians sell a lot of their advanced technology equipment to the other races and it is this, more than anything else, which keeps the others at bay.

Jovian society is mysterious and difficult to comprehend. For this, and other reasons, it remains very much closed to the other races, and few foreigners reside within the Jovian empire.

The Battle of Vak'Atioth

Two hundred golden, gleaming hulls, gathered on the fringes of the Vak'Atioth system. Amarrian arrogance had mandated the use of such a small force. They did not expect resistance. For the Amarrians, this was to be a great day. It would renew faith in the Reclaiming, a faith much needed. For weeks they had been advertising their intentions to crush the Jovians; flooding communication networks with propaganda proclaiming their people the chosen of God, rightful owners of the Jovian people. Vak'Atioth was not a primary system within the Jovian Empire. It lay upon the edge and contained only various small research facilities. It was, nonetheless, here that the mighty Amarr Empire had chosen to show the Jovians the undeniable might of their squadron, a force that didn't even approach the full size of the great Amarr Navy.

The Jovians valued one thing above all else – information. Their need for information had led to the formation of the Jovian Intelligence Network, an entity with eyes and ears in most of the other empires' internal archives. It delivered to the Jovians every plan the Amarrians had laid out for their assault – even before the Amarrian commanders themselves had received the information. This allowed the Jovians to plan extensively for the battle that would take place in one of their own systems – then called Vak'Atioth, now known only as Atioth. It was a rich and diverse mixture of battleships and cruisers, each ship equipped with state-of-the-art Amarrian laser technology.

Their ships were bulky and slow, but made up for their lack of agility with the devastating power of their laser batteries. The fleet organized itself in typical Amarrian military fashion – a staggered line designed to maximize the ghastly effect of tachyon fire against the enemy's front. Their hulls adorned with religious texts, broadcasting messages of Amarrian supremacy, interspersed with litanies and psalms in honour of the Reclaiming.

This was their moment; this was what they lived for. The first volley of fire erupted from an Apocalypse, its turrets taking aim and firing as one, blood-red beams slicing into the side of a stationary ship until the vessel's hull ruptured, pieces of it scattering like dust among the rank and file of the Jovian force.

It had begun.

The Jovian forces split into smaller wings, each numbering five ships, all equipped with devastating Jovian laser technology. Accelerating with frightening speed, they dove into the Amarrian attack forces.

Amarrian cruisers equipped with close-range weaponry moved to intercept as wave after wave of the smaller vessels engaged single targets, like a furious pack of wolves, dodging and weaving, maximizing manoeuvrability.

And then it happened. Massive, eerily green blasts erupted from seemingly nowhere, and an Amarrian Apocalypse went up in flames. Another blast erupted mere seconds later, and tore through a squad of Mallers, their hulls briefly flickering with bright green energy discharges. The Amarrians did not expect this. Their rigid command structure inhibiting communications, they did not realize what was happening. Lack of coherence and interoperability in the fleet meant that they could not cope with the sudden appearance of this unseen terror. It was a Jovian Mothership. Swooping in, the Jovian frigate forces caused even more confusion, sending the Amarrian forces into disarray. At this point, communications broke down. Amarrian battle doctrine demanded sacrifice, and so the Navy could not disengage. Captains and their crews valiantly threw down their lives for the Empire, confident that they, God's chosen, would be victorious. The few that retreated would later be executed for cowardice, their families enslaved and their Houses disbanded.

For hours streams of glaring light lit up the system that night, the nimble Jovian frigates diving into the Amarr fleet, their ranged cruisers supporting them with laser-fire over a distance and the titanic Mothership firing blast after blast of its extreme-range weapons; cannons created specifically for this battle. The smaller vessels holding the Jovian line prevented Amarrian squads from coming close enough to fire upon their nemesis, leaving the fleet defenceless against its onslaught. Battleship after battleship exploded in a violent bursts of light under the attack from the Jovian Mothership. This left the Amarrians in a position they had not been in before. What could they do but press on and die?

Not six hours later, Vak'Atioth was overflowing with the remnants of hulls drifting in the emptiness of space. The Jovians had won the first battle of this war; the majority of the Amarrian fleet had been demolished whilst only a third of the Jovian ships had been lost. The Amarr knew they had to respond quickly and in numbers. Publicly, they blamed impetuous leadership for the headlong assault on the Jovians – even if that was exactly what Amarrian battle doctrine had dictated. So it was that captains that had given their lives for their Empire without a single thought of retreat were posthumously discharged from the Navy, their reputations ruined and their families disgraced. A much larger fleet was ordered to gather in preparation for another assault upon the Jovians. They never got the opportunity to react. The Matari chose this moment to rebel against their Amarrian masters. Uncannily well equipped for slaves – and high on morale – they proved more than a match for their demoralized Amarrian captors. Faced with losing their grip on the Minmatar, the Amarrians had no choice but to redirect their entire military force to the home front to handle the rebelling slaves. To this day, rumours circulate that the Gallentean Federation secretly outfitted the rebels with weapons, ships and supplies.

And thus, a quick and hasty peace was agreed upon with the Jovians; if only to allow the Amarrians to concentrate on themselves. The Amarrians agreed not to attack the Jovians again. Both sides knew this was not sincere. However, the Jovians were happy to settle and continue as they were. To them, the complexities of the barbaric Amarrian nature were of interest only in the academic sense. Their handling of the Amarrian fleet blessed them with the reputation of an entity not to be tangled with.

No-one has attacked the Jovians since.

The Ancient Races of EVE

These are races that have long disappeared from New Eden for mysterious reasons that can no longer be found. They have left artifacts throughout New Eden hinting at their existance.

- **Terrans** are an extremely ancient progenitor race that colonized New Eden prior to the collapse of the EVE Gate. Little is known about this race, though they left numerous artifacts across the cluster, including old stargates and the EVE Gate itself. Some don't believe they existed.

- The **Yan Jung** are one of the known ancient space faring races of New Eden, the others are the Sleepers, Takmahl, and Talocan. According to Sebast Mathon, the Yan Jung nation immigrated into New Eden through the EVE Gate and settled in the Deltole system, especially on Deltole V and VI, which seem to have been much more inhabitable back then. The Yan Jung were, judging from the remains of Yan Jung technology found in the archaeological record, masters of advanced gravitronic technology and force field theories. Yan Jung archaeological sites can be found in the Algintal Constellation within Gallente Federation space.

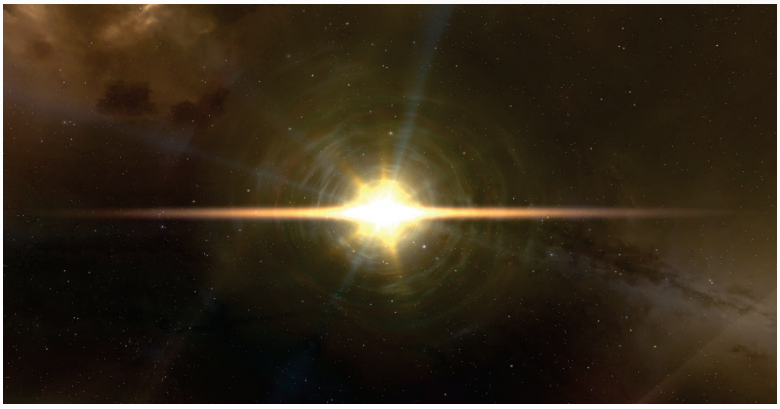
- The **Sleeper** race is one of the known ancient space faring races of New Eden, the others are Takmahl, Talocan and Yan Jung. The Sleepers are considered, as are the other ancient races, descendants of humans and populated New Eden thousands of years ago before they vanished.

  These days the only remains of them in New Eden are ruins and strange artifacts. Some of those ruins can be found in the Ani Constellation in Minmatar sovereign space. The technology of the Sleepers is said to be comparable to Tech 2 level in some areas, in some other areas they had much more advanced knowledge. From those few known artifacts it was also deduced that the Sleepers were masters of virtual reality, neural interfacing and cryotechnology.

- The **Talocan** are one of the four known ancient space faring races of New Eden. The Talocan were, judging from the remains of Talocan technology found in the archaeological record, masters of Spatial Manipulation and Hypereuclidean Mathematics. Talocan archaeological sites can be found in Okkelen Constellation within Caldari space.

- The **Takmahl** were a race of humans once part of the Amarr Empire. For reasons that remain unknown, but were very likely related at least in part to their Sani Sabik practices, they were exiled from the Empire, and lived for centuries in solitude in the Araz constellation. Some in the Amarr Empire believe them to be the precursors of the Blood Raiders. They supposedly worshiped different gods and were labeled heretics, which possibly caused their exile, but they were undoubtedly masters of cybernetics and bio-engineering technology. Their relics and technology can still be found to this day in the Museum Arcana, although the Takmahl themselves are no longer to be found. Their fate is unknown.

The Ancient Gate of New Eden – a.k.a. The EVE Gate



The gate, although three light years away from New Eden's star, can be seen brightly in the sky of the New Eden system. At this distance, it would take several years of high-speed travel to reach. A sole planet, New Eden I, orbits around the small yellow star of the system. The only entry into the system is a star gate to Promised Land.

In 7703 A.D. the wormhole opened, and in 7987 A.D. colonization of EVE became possible. mega-corporations, religious factions and ethnic groups quickly begin colonization of the EVE cluster, founding several hundred small colonies. At some point however, the gate collapsed, severing the colonies from the worlds which sustained them, bringing a dark age upon the inhabitable worlds, while millions more perished on other colonies in the ensuing chaos.

During their expiation, the Amarr Empire claimed the region of Genesis and the EVE Gate as their own. To them, as to many in EVE, the gate is a place of religious significance. Unfortunately, the region surrounding the Eve Gate is still lawless, and is inhabited by several groups of pirates, both faction and capsuleer. It is rumored that the wrecks of the many ships which were destroyed during the final days still float in the void around the gate. The lack of wreckage detected by scanners has not culled the speculation; some say that the ancient vessels have been cloaked by the Jove to prevent advanced technology from falling into the wrong hands.

In 23346 A.D. a bright star appeared to the EVE cluster. The mysterious "Star in the North" is speculated to be the closing of the Eve Gate in the Milky Way galaxy. However, several capsuleer scientists have dismissed this claim, given that any light travelling from such a distant location would undoubtedly require more than ~20,000 years to arrive here. In late November of that same year, the star disappeared from the sky without explanation.

Due to its mysterious nature, the EVE gate is referenced in a number of theories, conspiracies, and legends in New Eden's history. In Y109 a massive light source, bright enough to be seen throughout New Eden was observed by the population. Lasting for several weeks, the light vanished as quickly as it had appeared. Popular opinion holds that this "bootini star" was actually the light from the EVE gates collapse in the ancient home of New Eden's colonists, finally reaching their children's eyes. Scientists were quick to dismiss this notion based on their calculations of the theorized distance to the ancient homeland and estimated passage of time, but some still choose to believe that the bootini star was their brush with ancient history. They theorize that the EVEgate may have moved the ancient colonists through time as well as space, or that New Eden itself moves on a different timescale.

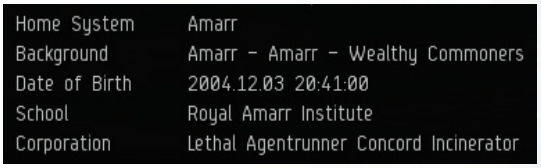
The truth may never be revealed.

Welcome to EVE!

Welcome! Congratulations on obtaining your CONCORD Pilot License! When you create your character, also known as a pilot, you are free to choose his or her race, gender, bloodline, and name. All of these decisions are permanent and cannot be altered later so it is good to pay careful attention to the look of your character, making sure you are happy with your choices. Also of note is when choosing a name, please pay attention to your intended capitalization. EVE names are all case-sensitive. There is a 'Last Name' field and a 'First Name' field – the full name can have a two space in it...

At the beginning, there may be a lot of unfamiliar words / expressions, you can get some help in the understanding just check the "**EVE-Specific Glossary**" section.

Race, Bloodline And Profession



The various character races and bloodlines differ in their background (history), looks, and initial skills and attributes. These differences can be equalized easily later by more training in particular areas and less in others. Since everyone can learn every skill, it is only matter of time to reach all skills at level V (no one has done it yet as it would currently take about 20 years' worth of skill training). It is practical to choose a character that you will be happy with, for that pilot will grow and change as you explore EVE Online for years to come. If role-playing is important for you, choose a character whose background story appeals to you.

WARNING! The choice you make about your character's race, bloodline and gender are permanent and you cannot change them later!

Before Anything Else! – The Career Agents

Before doing anything else, it is highly recommended you complete all tutorials and the mission series offered by Career Agents (in case you have not done so yet, F12 – Show Career Agents). It is important to be acquainted with the basics of the game, its controls, and structure. If you complete these missions, you should have some ISK when you are done. All the recommended learning category and other skills will be at level II and you may even have up to five frigates to fly. Many aspects of the game are introduced by the Career Agents. You will not only learn trade and kill missions, but also exploration and PvP missions as well which introduce you tactics like webbing and warp scrambling. Overall, the experience, much-needed ISK, ships and implants gained from these missions all come in handy. After completing these, you can then start to look for a corporation to join, where the 'veterans' will help you. You can see a detailed, step-by-step walkthrough for the Careers at the following links:

- **Balancing the Books Mission Guide**
- **Cash Flow for Capsuleers Mission Guide**
- **Making Mountains of Molehills Mission Guide**

Eve Is Not (Just) A Single-Player Game

EVE Online is not about a single-player experience, so we suggest seeking out some friends as soon as possible. The Help channel and various language-specific channels are all great places to meet new people. We advise you to join these as soon as possible. To join a chat channel, click on the 'Open Channel Window' button on the header / top part of your chat window. In the 'Channels' window, either select one of the listed channels, or type the name of any help/community channel you want to join.

Some help/community channels:

- **English**: Help, Rookie Help
- **German**: German, Hilfe
- **Hungarian**: HUN, Languages - Magyar
- For other languages, check under the 'Languages' category.

Most of these channels have a delayed member list, meaning that the names of members will only display in the channel's list window once they first start talking. Do not be afraid to ask questions. Everyone was a newbie pilot once, and we all know how complex EVE appears in the first few days.

You will find people who are glad to answer your questions. Since most of these channels are busy and it is hard to keep track of all the conversations, you may also be interested in joining various community channels.

Corporations and alliances often run such channels. While in the first few days, it may be unwise to join a corporation because you do not know yet what kind of playing style (and corporation) you will prefer, it is wise to join their public channels if they offer help. That way you can get to know more people and more corporations, which is important in developing your playing style.

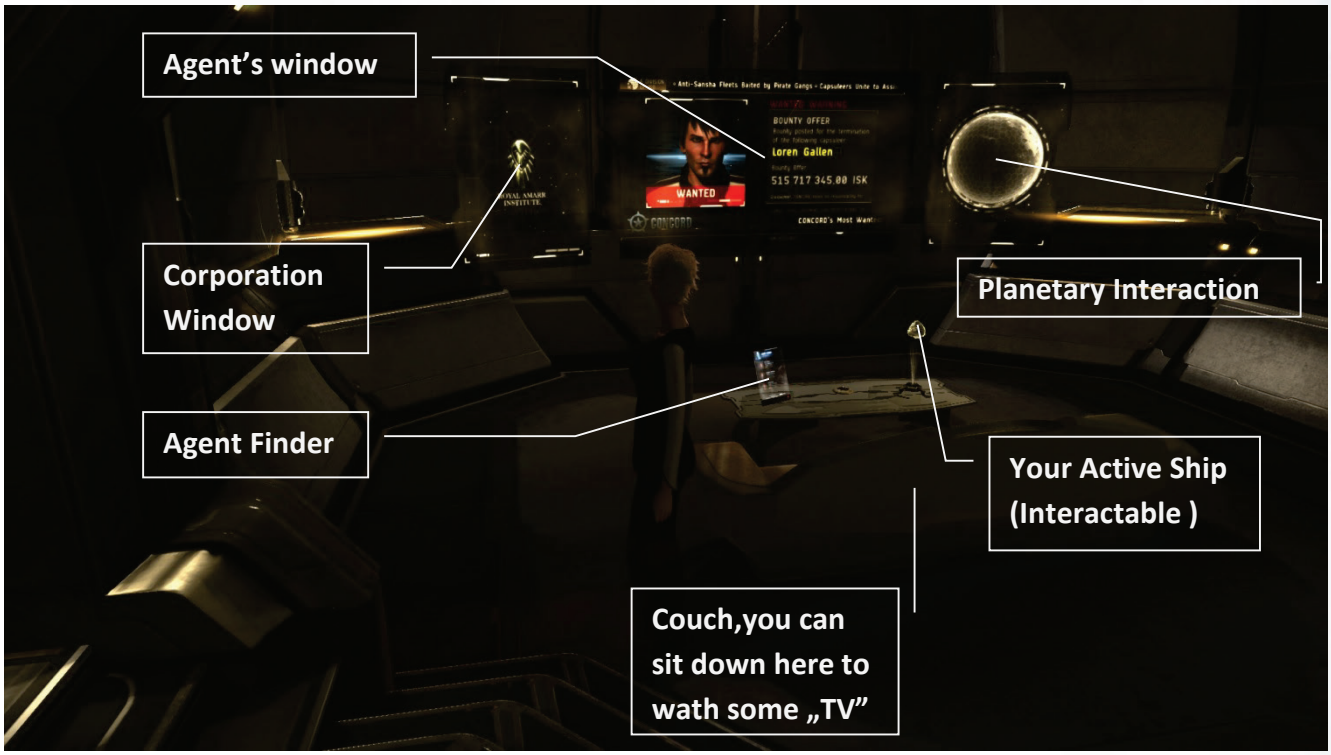
Educational organizations

In EVE Online are Alliances, Corporations or other entities which dedicate themselves to helping new players start their careers in EVE or help more experienced capsuleers to learn new skills.

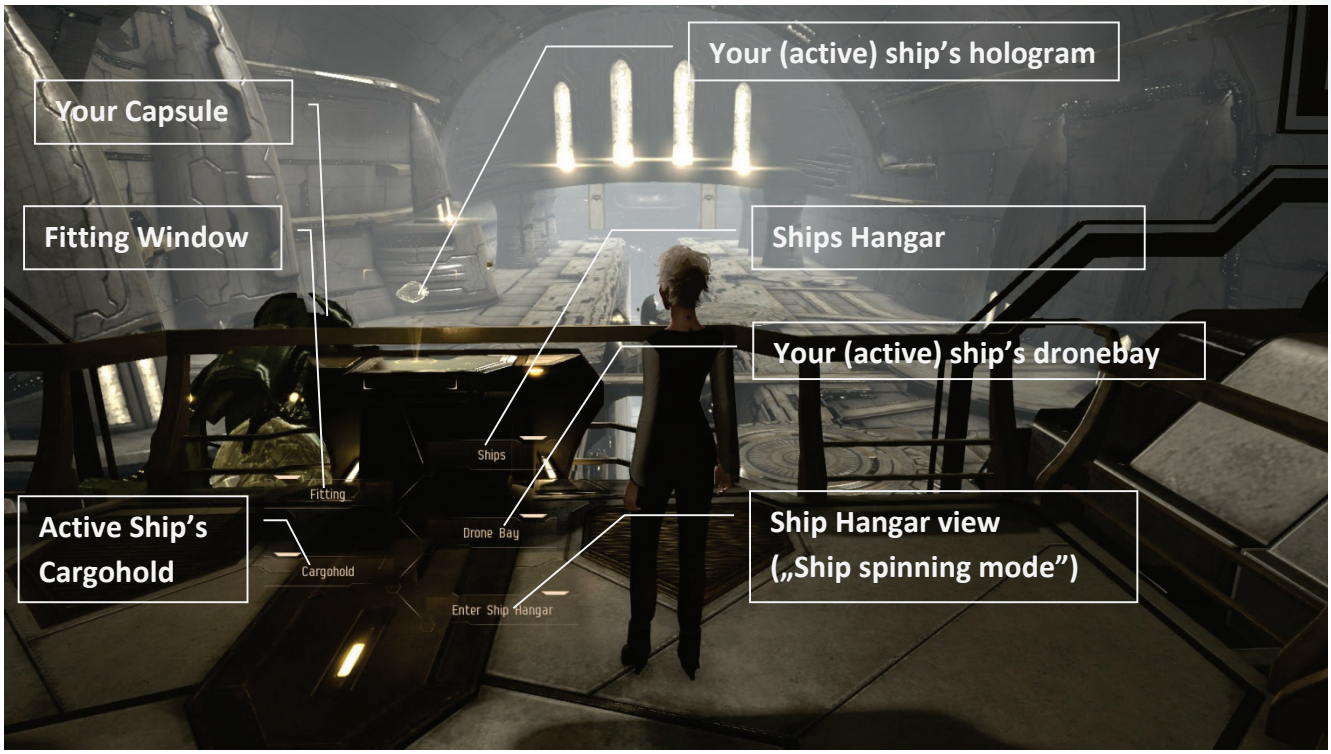
http://wiki.eveonline.com/en/wiki/Educational_organizations

GUI (Graphical User Interface) - Station

When you first enter to the game, your game window will look like this. You will see this when you are at the station and the Captain's Quarters is turned on. There is two main areas, the **Captain's "Room"** itself:

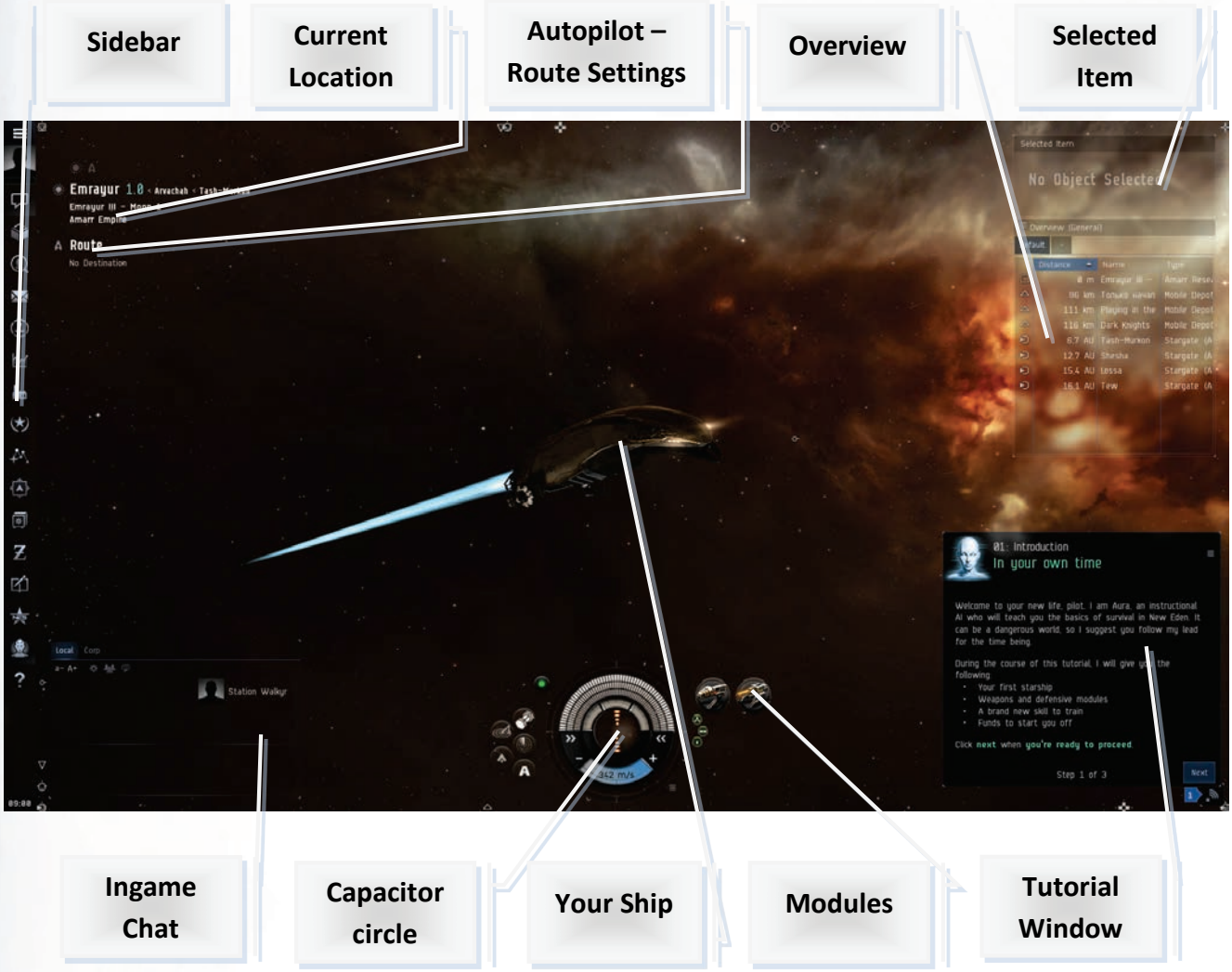


Hangar's balcony:



GUI (Graphical User Interface) - Space

When you first enter space, your game window will look like this. This view will not change dramatically during your EVE Online career:

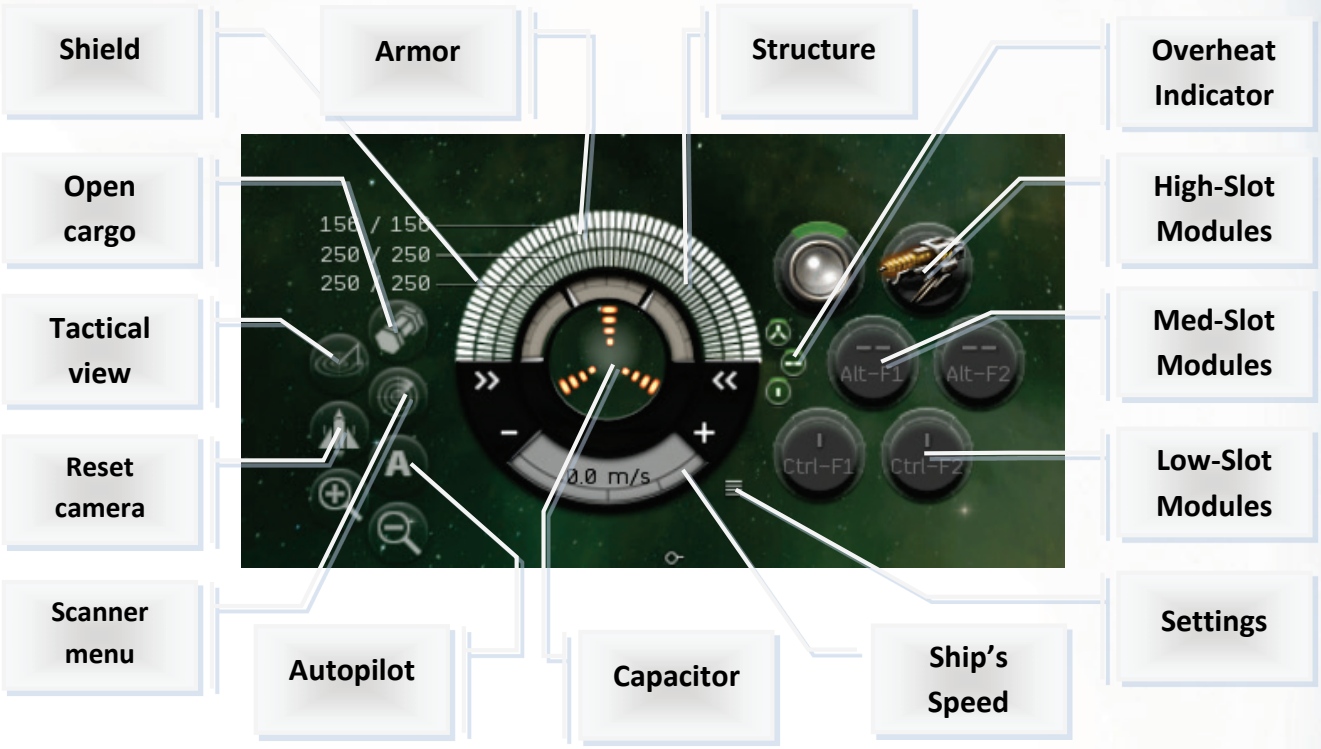


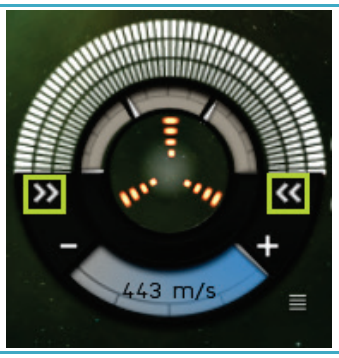
The UI of EVE is rich in options, as you can already see, even compared to that of other MMOs. Concentrating on mastering the basics of the interface will help you to become a great pilot...

- **On the right** side of the picture you can see the **Overview**
- **On the lower left** side is the in-**game chat** window
- **On the lower middle** part of the picture is the **HUD** (Heads-Up Display) of your ship
- **On the left side** different information windows are waiting to be discovered
- **Beside that** you can see your **current location**.

You are free to move the UI elements and, with the exception of your HUD (Capacitor Circle and Modules Area), you can also resize them to save some valuable screen space. Saving screen space only makes sense if you can use the extra space. Moving or resizing windows is just like your computer's operating system, but the HUD does not have the usual window frame.

The most important part of the UI is your HUD (Capacitor Circle and Modules Area) where you can see the status of your ship and modules, set your speed, as well as overheat and activate your modules.

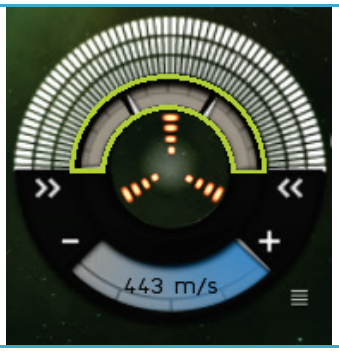




The >> and << signs on either side of the capacitor circle can be used to toggle showing the icons that are to the left and right of the circle.

Hiding the more generic icons on the left can save some more screen space and you won't miss these buttons if you bind their functions to hotkeys. On the right-hand side you can show or hide the module icons. You can bind hotkeys to these icons as well, but doing so prevents you from the visual feedback about the state of the various modules. Hidden modules can be made visible here as well.

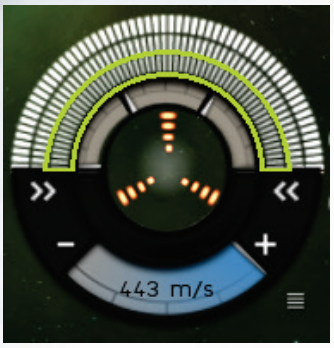
In the centre, you can see the level of your capacitor. While this image shows only two lines in your starting ships, there are more lines available in other ships, even filling the entire circle in the more powerful vessels. The capacitor is the main energy source of the ship. It powers the different modules. How this energy source is managed is essential for the survival of most ships. The other feature of the capacitor meter is that you can drag and move it by holding down the CTRL key then holding down the left mouse button on it.



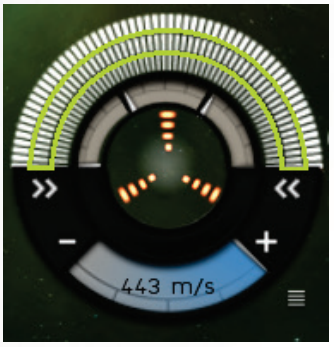
Moving outwards is the thermometer, divided by three parts. The thermometer warns you about the overheat level of the exaggerated modules.

Since the modules can be used on three types of energy levels, and the levels can be overheated separately, three thermometers are needed.

However, overheating modules requires certain skills you will not have access to at the beginning.



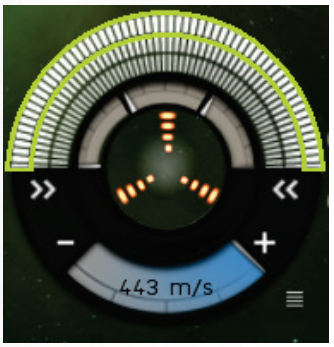
The next meter tells you about the integrity of the ship's hull with the damage level shown in red. If the hull is destroyed, you will end up in an escape pod amongst the wreckage of your ship. NPC enemies (Non-Player Characters – opponents controlled by the game) don't shoot at your pod, but players can attack it and will do so. If the hull of your pod is destroyed, you will die and find yourself in your clone in your designated home station. Also when your ship is destroyed, some of your cargo and modules will be destroyed as well. The rest, however, remains in the wreck, and can be looted from there. In addition, useful salvage parts can also be retrieved from the wreck.



The next meter shows the status of your ship's armor. When the armor is lost, then the hull begins to take damage.

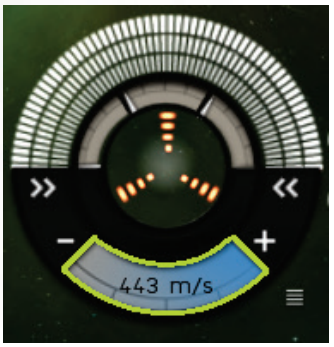
While hull damage is always a serious problem, the armor serves as the first line of defence for many ships and can be repaired by various systems while in flight.

On the other hand, if your ship's primary line of defence is the shield and you start to get armor damage, then it is high time to warp-out.



The next meter, and first line of defence of the ship, is its shield. It does not consist of material, but instead is a force field of energy. The ship's reactor automatically regenerates it.

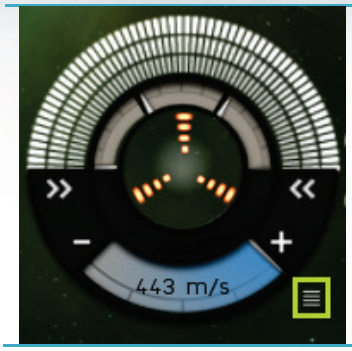
Many modules can be fit to allow faster regeneration. The first attacks always damage the shield. If the shield is lost, the next damage will be to the armor. The shield recharge rate depends on the state of the shield. If the level drops under 30%, the recharge will slow down as well. The three divisions of the thermometer can help you to estimate where this 30% is.



The meter on the lower part of the HUD shows the speed of your ship. You can adjust the speed by clicking anywhere on the meter, the left side being slower and the right side being faster. The meter always compares your speed to your current modified maximum speed, which is important if enemies slow you down. To provide an absolute measurement (which is important) you also have a numerical output. (Note: To see the speed midwarp, move the cursor over the meter.) Speed and distance serve as another important aspect of defence.

It is not necessary to find the right part of the speedometer to stop, or to speed up the ship to the maximum – there are two small triangular buttons that can be used to do this instead.

While the left triangle stops the ship, the one on the right is responsible for increasing the speed to maximum.



To the right of these meters is a small box with lines.

Clicking this opens up the Settings menu.

This menu provides options to further configure your HUD as explained below:

- **Display Passive Modules:** Shows / hides fitted module icons that do not require activation.
- **Display Empty Slots:** shows or hides empty module slots of the ship.
- **Display Readout:** shows the numerical readout of your structure, armor and shield levels.
- **Display Readout as Percentage:** Displays the levels of the above readouts in %.
- **Display Zoom Buttons:** Puts a zoom in and zoom out button to the bottom left side. They enable the camera movement compared to your ship or the actual target. When the zoom buttons are enabled, they will display on the left side of the HUD. They move the camera closer or further in relation to its target object. It will not go through the target object, but will simply zoom to it and not move. Since zooming is available via the mouse wheel by default, the zoom icons start out as hidden.
- **Display Module Tooltips**: When enabled, just hover the mouse over said module (or module group) for a second and a useful „tooltip" will appear, providing information we may need.
- **Lock Modules in Place:** You are free to move module icons by default. You can use this option to lock them in place. If you have enabled this, it will be replaced by an option to unlock your modules.
- **Lock Overload State: I**t locks the overload (overheat) status of your modules, to prevent accidental overheating.
- **HUD Aligned to Top:** Moves the HUD to the top of the screen.
- **Configure Damage Alert Settings:** Health bars on the HUD for your ship flash when the user-defined Damage Alert thresholds have been passed. The Damage Alert thresholds can be configured in the HUD menu.
- **Enter / Exit moving mode for Notifications:** You can move the position of the damage notification, system messages window.

Module information

If we would like to know some information about a module (something like: range, damage, ammo loaded) all we have to do now is to hover the mouse over said module (or module group) for a second and a usefull „tooltip" will appear, providing the informations we need.

This works on all modules, although sometimes the usefullness can be questioned (ie.: on a salvager I, all we get is the range). It does however help us in quick-checking modules without the need to fall back to the fitting window (like quick-checking hardeners before embarking on a mission).

The GUI buttons

Activating the autopilot makes travel simple through the endless expanse of systems. However, this comfort has a price, as the autopilot does not warp directly to the gates, but instead warps to 15km from the gate with the ship then slowly approaching from there.

This makes travel slower than directly warping to gates by manual control. In some parts of space (usually low-sec or Nullsec), enemies can ambush you while the autopilot approaches the gate, so it is not safe to go 'Away From Keyboard' (AFK) completely while your autopilot takes you to your target system.

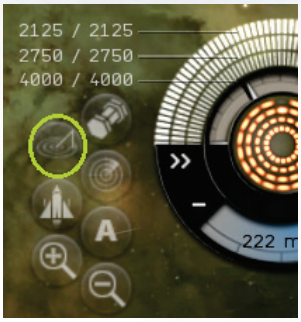
The little spaceship icon to the left of the capacitor wheel restores the default camera setting. It centres the view on your ship, at the default viewing distance.

Because clicking in space can set a new course for the ship to fly, you can return to the familiar perspective after altering the camera by using this button.

Use the Scanner to explore the system you are in. When you press the button you encounter a new radial button menu. From there you can enable or disable the sensor overlay by pressing the eye icon on the top.

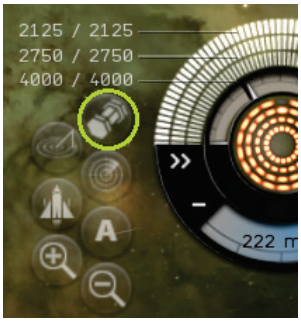
You can also access all the specific scanner tools directly from there; probe scanner (left), directional scanner (right) and our beloved moon scanner (down) as well.

The radial scanner menu works as a pop up menu as well as a gesture tool like the new radial menu for ship actions where you can press the button and drag in a direction to select a button and release to select it.



The Tactical Overlay button toggles the tactical view on and off. It enables you to see the distance between objects and your ship, your targeting range, and the effective range of the modules fit to your ship, such as weapons or salvagers.

During combat, this information can be very helpful in choosing the right target or deciding where to fly.



The cargo icon opens the cargo hold of your ship. You can organize your items either by simply dragging and dropping them or by right-clicking on an item in your cargo and choosing an option from the contextual menu.

The Jettison option throws the selected items into space in a jettison (jet) can. You can drag and drop items from wrecks and other containers into your cargo or from your cargo into containers in space.

The three small icons just to the right of the capacitor circle serve to overload modules on the relevant slot levels.

You will not have the skill required for overloading modules starting out as a rookie pilot.

These three icons can be hidden along with the buttons for fitted modules by clicking on the << button.

The module icons of those modules fitted in the low slots of the ship appear in the bottom row by default. The module display, however, can be rearranged. This way the user interface can be customized to suit your taste.

When playing in a lower screen resolution, you can get more space on the screen for anything important. Modules can be regrouped by function or by any other point of view such as modules to be used at the same time. (The picture to the left shows a customized icon layout as an example.)

The middle row of module icons displays medium slot modules by default. In the case where you have passive modules hidden, you can still drag another module on top of a hidden one. After doing this, if you toggle the passive modules display back on, you'll see that the passive module has switched places even though it was hidden before. As discussed earlier, use the Settings menu to toggle the display of passive modules. Although passive modules do not require activation, you can put them offline or online.

This may be necessary when CPU or Powergrid limitations don't allow every module to be online.

The upper row displays high slot modules by default. They too can be rearranged. Weapons are special amongst the high slot modules, as they can be grouped in addition to being rearranged. Although weapon groups are represented by a single button, they stand for one or more modules.

Only like weapon modules can be grouped. Any difference in the modules, and the modules cannot be grouped. You can, however, create multiple groups (like three Medium Railguns in one group and three Rocket Launchers in another).

An active module is marked by green light. On deactivation, the last cycle will be shown by a red light. The white line around the module is the activation timer.

This timer can be visually toggled to not display via the Hide Activation Timer option.

Offline modules are indicated by its faded appearance. You can switch a module on- or offline by right-clicking on it and choosing the appropriate mode in the pop-up menu.

Changing the type of ammo, toggling the auto reload on or off, and the command to manually reload weapons are all available in this menu as well.

Locations In Space are indicated on the compass, it's contain:

- Cosmic Anomalies
- Cosmic Signatures
- Landmarks
- Personal Locations
- Corporate Locations
- Agent Objectives

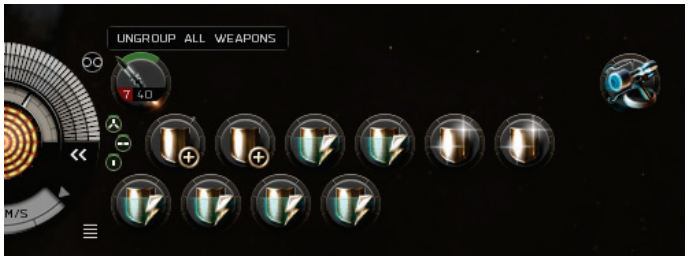
Each type will have a unique colored symbol to make them distinguishable from each other (similar to the Overlay icons you are already familiar with), as well as a bracket that will again often be familiar to you.

There is a compact filtering menu that allows each type to be toggled, as well as giving you the option to turn the entire overlay off should you wish. The compass faces in the direction of your camera and displays markings for all unfiltered Overlay items, color coded as they are in space.

Weapon Grouping

It's possible to group the ship's guns/launchers together. Setting up the group is done through a single drag and drop and/or with the 'Group All Weapons' button, while activation is toggled by a shortcut or button.

This is how the default weapon management
panel works. Currently, each gun is displayed and controlled individually.



Grouping weapons is done through a new '(Un)Group All Weapons' button.

Dragging and dropping same modules on top of each other will create a weapon group.

Modules that cannot be grouped disappear when entering this mode or appear greyed out if they are not of the same type as the selected weapon.

Groups are displayed as shown on the left, with the number of weapons appearing as a red counter in the bottom left of the icon.

The merged icon has all the standard options that would be available to the individual weapons with the exception of offlining. Putting weapons offline requires breaking down the group first.

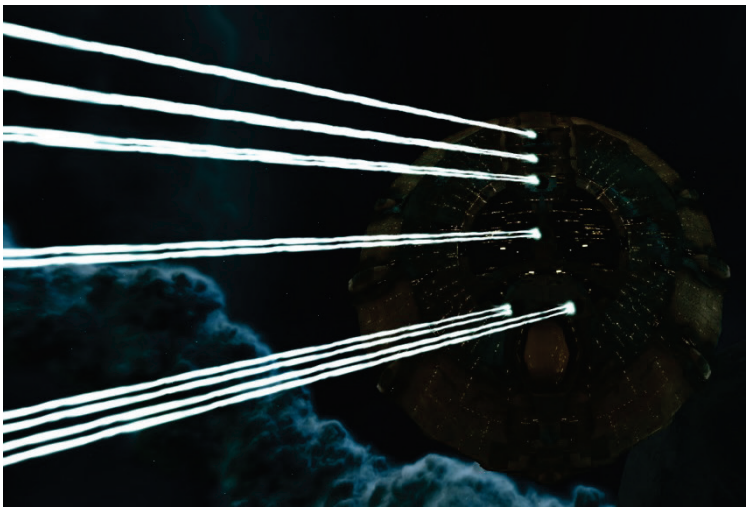
Weapon grouping allows the user to reload all stacked weapons with a new ammo type in one click.

This feature only shows a way of displaying turrets/ launchers in the module panel, it does not physically group weapons together in the fitting screen; as such it does not free up high-slots.

This also means that when your vessel is lost, your grouped modules will still be individually dropped inside the wreck (or be blown up in the ship explosion); no weapon group will appear to be picked. On the right is an example on how the fitting screen appears with this feature. Notice that weapons will now display the group they belong to.

Restrictions

Of course, there are limits to how this system will work. Since weapons are bound together, it will not be possible to attack multiple targets with the grouped bank. However, players will have the ability to create smaller weapon groups (two links of four turrets instead of one link of eight, for instance) for dealing with multiple targets. Another issue is with the types of weapons that can be grouped.



Since all grouped weapons have to be exactly the same, you cannot have a mixed group made of Tech I, Tech II and named/faction/ deadspace variants at the same time. That also means they all have to be fully repaired, fitted and online before this feature may be used.

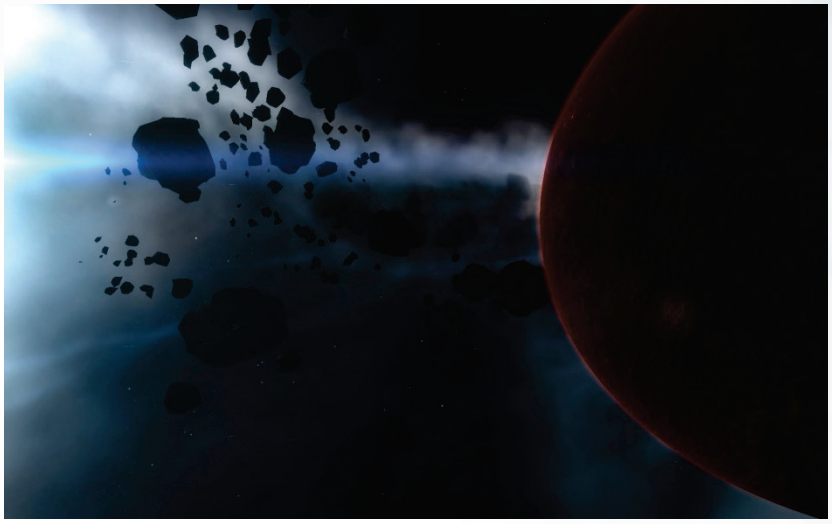
Advantages

The most obvious advantage gained with this method is easier weapon management. Also, since weapons are grouped together, this method frees the F1-F8 shortcuts up on your module overlay for other mid/low-slots (remember, this does not free the ship module slots themselves).

As a side effect, using grouping will have a beneficial effect on overall latency since calculations are counted from one combined group and not eight individual modules in an extreme scenario; as such we highly recommend its use for fleet battles.

FAQ

Some commonly asked questions regarding grouping:



Which modules are affected by this?

Only turrets and launchers for the time being. (No modules can be grouped as yet.)

Is there any other way to group modules?

Yes, you may directly drag/drop modules without having to use the button.

How is heat applied to the stack?

Heat is applied equally to the weapons inside the group; since this feature doesn't change anything to the module position themselves in the fitting screen, spacing weapons to reduce overheat effects will still work properly.

How are the grouped weapons' attributes calculated?

The system was designed to retain balance between grouped and individual weapons. For example, damage multiplier and capacitor consumption will be properly multiplied depending on the number of grouped weapons, while falloff, tracking and range will remain the same.

Hit dice are rolled separately for each module that is grouped while taking into account wrecking hits, so you won't have a wrecking hit taking the sum damage of all weapons (which would just be insane).

How does this work with ammunition?

Grouped weapons use the same amount of ammo as they would in individual mode. If you have N x Weapons stacked, they will take N x Ammo per reloading cycle and consume N ammo per shot.

Since all stacked weapons need to have the exact same type, can I load damaged crystals into them? Yes and damage will be equally distributed among all crystals when received. If one crystal breaks first you will however need to reload the stack.

The Sidebar

The NeoCom panel (sidebar), by default, is located along the left side of the EVE game screen. It provides access to the tools that you'll need to control your life within the EVE Universe.

At the top of the NeoCom there is a new EVE Menu ('E' Icon) where all menu options can be found. The root of the NeoCom acts as a shortcut bar and users can move icons around, delete them from the root and add new ones from the EVE menu.

The EVE Menu always has all the options available to users through the NeoCom. Users can only remove, add and reorganize icons in the root menu, the EVE Menu index is always the same. Users can drag icons from the EVE Menu to the root of the NeoCom which will create a shortcut for it.

Character Sheet: From here you can manage everything about your pilot including skill training, attributes, implants, and jump clones. It also has a record of all of the ships that you've killed or been killed in. The most important item in the Character Sheet is the skill queue. To access it, look at your skills, then click the skill queue icon. It's here that you'll tell your character to learn new skills.

Chat: By default, the Chat window is available right below the skill queue progress bar in the NeoCom. Users can click the Chat icon and get a list of active channels.

Inventory: "One window to rule them all" you can see all the available ships (while docked), cargo and other holds of your active ship, and In-space inventory locations (POS). You can still open up multiple windows if you want to (either through right-click options or SHIFT clicking tree entries).

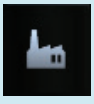
Please note: The Items and Ships windows will appear in the station services panel if the "Merge "Items" and "Ships" into station panel" checkbox is selected on the General Settings Tab of the ESC Menu.

People and Places: This is your tool for navigation across New Eden. People & Places lets you create and organize your bookmarks, see if your contacts are online, and search for locations. You can add bookmarks (places in space that you want to remember) and set your autopilot to go to any bookmark you have previously saved.

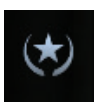
Eve Mail: This allows you to send & receive EVE mail to and from other players.

Fitting: This gives you access to what is fitted on your ship, what is in your drone bay and what is in your cargo hold. (You can open it in the space too!)

Market: This is the commerce hub of New Eden at your fingertips. Near-anything that can be looted, manufactured, salvaged or stolen can be found for sale here. Please note: all the markets are regional, you can't see other region's supply and demand.



Science & Industry: From here you can reach the manufacture or research jobs and the planetary interaction interface.



Corporation: This gives you ability to manage and interact with your corporation. It includes information about the corporation you belong to, limited information on other members, corporation assets, and a wide array of corporation management tools.

Map: All information about the entire universe is at your fingertips. Accessed either by clicking the map button in the NeoCom panel or by pressing F10, you have your choice of a 3D or 2D (flattened) view of the galaxy.

ISIS: Interbus Ship Identification System. Like the name suggests, the ISIS is a tech tree system to identify ships in EVE. It presents all ships in the game in a visual and interactive way and illustrates clearly the skill requirement progression path for unlocking ships while giving players the high level information they need to decide which faction, ship group and ship to progress towards. The tree is dynamic and shows which ship groups and ships you are training for and will give you a clear indication when new ships have been unlocked or your ability to use them effectively has changed.

Assets: This shows you where all your assets are located across New Eden. Often, players have ships, items, and minerals in more than one location. If your assets list becomes unmanageable, there is a search function which will let you find any item you own by entering its name or the first three letters.

Wallet: This shows how much ISK and shares you own, bills you have to pay, a journal of transactions, a list of all open buy/sell orders, and a list of your recent monetary transactions. If you are a member of a player corporation, and have the appropriate rights, you can also see and manage the corporation's finances from here, too, from the Corporation tab.

Journal: This provides a way to track four different areas of information: agents, expeditions, contracts, and the epic journal. Under the Agents tab, you can track what missions that have been offered to you or that you are currently running, which agents are currently performing research for you and the status of that research, and the number of loyalty points you've earned with each NPC Corporation after completing missions with that corporation.

NES – New Eden Store: There you can buy visual customization for your avatar or ship for the virtual currency AURUM**.** A healthy mix of clothing items, tattoos (for both right and left arms) and ship skins.

Tutorial: Appear when a tutorial mission has been started.

Help: This gives access to the EVE Help tools and extensive tutorial options.

SUPPORT – You can open a support ticket to help you through program issues that you may be having. It allows you access to the game's knowledge base and you can file a Support Ticket here to address problems that may have occurred.

TUTORIAL - The tutorial is essential for any pilot's success and will guide you through the basic processes of the Eve universe. This tool also provides an easy-to-navigate list enabling you to directly choose tutorial topics of immediate interest to you at any point during your play. Career Agents can also be reviewed and located through this tool.

Hidden (chat) window(s): Appear when you minimize a window, pressing on it "brings up" the hidden window.

Undock: Only while docked In a station! – At the station services.

13:37	**Calendar**: The display of the time is also a button that will open the Calendar. From here you can view, create, and remove scheduled events that can be shared with other players.

You can reach the following options when you open the ~~Start~~ EVE menu:

Accessories: You can browse your saved bookmarks (**Browser Bookmarks**), you can open the ingame **Browser**, **Calculator**, **Notepad** and the ingame **Log** (system messages, incoming / dealt damages).

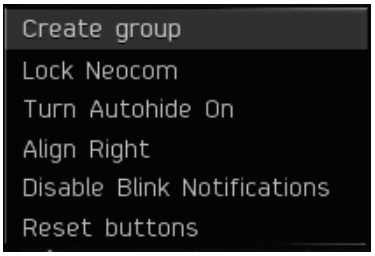
Business: As its name suggest, you can found everything there needs for a successful business:

- **Market**
- **Contracts**
- **Wallet**
- **Science & Industry**
- **Agent Finder**
- **Militia Office**

But, to be socialized, with the opening of the **Social menu**, we can access:

- **EVE Mail**
- **Calendar**
- **Corporation**
- **Sovereignty**
- **Fleet**
- **Chat Channels**

After a right click on the sidebar, we can make new groups too. With „Drag & Drop" we can rearrange our tools.



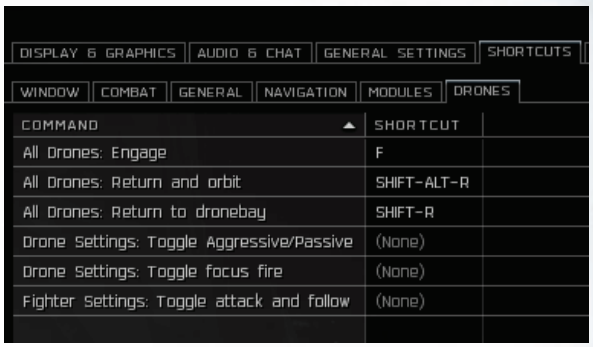
With this method possible to move and/or hide each/all tools.

Although technically it is not part of the Side Bar, the new 'Agent Mission Overlay' is worthy of mention: this is the area where you can monitor your active missions (where we picked up the mission, where do we have to go, etc.) and with this, simplifying our lives considerably.

We can even talk to our agent with the help of this window (Start Conversation) or we can catch-up on the details of whom or what to shoot (Read Details).

Shortcuts – The easier way

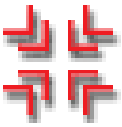
There are times in EVE Online where split-second decisions make the difference between life and death. It is entirely possible that those decisions must be made through a right-click menu. To be able to do shortcuts properly, there never used to be any other option than disabling the 'Set-Chat-Focus-On-Any-Key' functionality. Annoying as it might be for the chatty of you to begin with, this will by far be outweighed by the benefit of freeing up the entire keyboard, which has been held ransom by the chat focus option. Instead, there will be a special 'Set Chat Focus' command that can be bound to any key (SPACE by default).



Bind Shortcuts to "Any" key

It is now possible to bind shortcuts to almost any key on your keyboard, with the exception of reserved keys like ENTER, ESC, etc. No longer will you be forced to include mod keys (CTRL, ALT and SHIFT) in your shortcuts (even though you still can, of course).

Mouse Buttons



EVE now recognizes that your mouse might have more than two buttons! You can now bind mouse buttons three, four and five directly to shortcuts, or use them as mod keys to create shortcuts like MOUSE4 +A (if that's your thing).

Combat Shortcuts

Most people agree that targeting stuff through CTRL+Click is the way to go. You can now do most in-space essentials like warp, approach, orbit, keep at range, etc. by holding down the designated shortcut key and clicking the target. Those shortcut keys are, of course, configurable, but the defaults are conveniently bound to buttons on the left side of the keyboard:

- **A:** Align to
- **Q:** Approach
- **D:** Dock/Jump/Activate gate
- **E:** Keep at range
- **CTRL:** Toggle lock target
- **ALT:** Toggle look at
- **W:** Orbit
- **T:** Show info
- **S:**Warp to

Don't Like Clicking?

You might be interested to know that you can execute the combat shortcuts explained above through your keyboard alone. Simply set focus to the Overview (there is even a new shortcut to do that: ALT+SPACE) and press one of the combat shortcut keys.

On top of that, there's the following:

- Improved shortcut bindings System in the ESC menu. Shortcuts are now neatly categorized, and bound and unbound commands are now displayed in the same list. The key binding pop-up window has been made simpler to use as well.
- Default shortcuts assigned to more commands, for example, commonly used windows, have been bound to ALT+key shortcuts. ALT+S for science and industry, ALT+W for wallet, etc.
- Combat shortcut buttons are now included in the mouse hints of the Active Item buttons to make it easier to memorize them.

Current Location, Or 'Where Do I Want To Go Today?!'

It is vital to have an understanding of the environment that you fly through, visit, or live in. Knowing things such as the security status of the system, who holds sovereignty there, is it a choke point and so on is vital information. Most of this information is displayed at the top left side of your screen.

To toggle more or less information, right click on the background, then choose Configure

Four important things are shown in this part of the display:

- **Where are you?** (Current Location, Constellation, and Region) This comes in very handy for knowing about your immediate surroundings in the universe.
- **What is near you?** (Nearest, docked) It is useful to know what the nearest objects are. Knowing what is in the system is important: what stations are close by, who is docked, who is in local, etc.
- **Who owns this area?** (Sovereignty) This is useful to know if you want to conquer that area, or pass through it. It is also useful in Empire space, to know which empire controls this particular part of space.
- **What is the security status of the area?** (Security level) This is essential information about the system. Do you need to be wary of CONCORD or pirates, or can you expect attacks from a rival alliance?

The Security Status Of The Systems

In the universe of EVE, every system has a security level which is represented by a number between 0.0 and 1.0. The higher the number means the better the security, while the lower the security level of a given system means:

- More valuable minerals are in the asteroid fields
- Bounties on NPC ships are higher
- Agents give different kinds of missions
- Mission rewards are higher

The following list helps you to understand what you should expect in systems of certain security status:

High-sec or Empire space (0.5 to 1.0): These are typically territories of the four big empires that rule the EVE universe. Here CONCORD reacts to unlawful aggression. Only NPC stations and Sentry Guns are present. Sentries at the gates will also shoot aggressors.

Low-sec or Low-sec Empire space (0.1 to 0.4): Sovereignty here is also typically held by one of the four factions, but WITHOUT CONCORD as extra protection.

Nullsec (0.0): Here the territories are either lawless, controlled by different pirate factions or by player alliances. There are not only NPC stations, but also other outposts as well, built and occupied by players. In addition, Drone Regions can also be found here, where, not surprisingly, drones rule the territory.

Wormhole (WH, 0.0): 'No man's land.' There are neither stations nor static gates to be found in unknown space.

	Security Status Of The System	Concord Activity	Sentry Guns At The Gates	Value Of The Best Ores And Npcs In The Asteroid Belts
High Sec	0.5-1.0	Yes	Yes	Low
Low Sec	0.1-0.4	No	Yes	Moderate
0.0 (Null Sec)	0.0	No	No	High
Wormhole	-0.0 ☺	No	No Gates	Moderate to High

Other Options

Right-clicking on your ship displays another menu. Here you have options such as abandoning the ship using the Eject option. If you eject your pod into space, leaving your ship without a pilot in space, then any pilot's pod with the skills to fly that ship can board it. Self-destruct is another menu option.

When right-clicking on certain structures or ships there may be more advanced commands including the ability to set access passwords, the ability to open various bays and hangars, and access to fitting services, etc. These advanced functionalities will be described later in the guide.

Right-clicking on items in containers, hangars, in space or on characters in chat windows displays a contextual menu with various options. Some of the options from the contextual menus for selected ships, items in space, and drones are also icons in your Selected Item Window. You can right click on the icons in the Selected Item Window for advanced options like setting the default range to warp to, or the default range to orbit, etc. These commands are detailed in the basic tutorial of the game. You can also control-click on objects in space or in the overview to target them.

The Radial Menu

To call up the radial menu you need to hold down the left mouse button on an item for a moment like on the original Action Menu. That works on brackets in space, the overview and on your Targets.

Primary actions are actions we feel are most used or unique to a particular type of object.

Some examples:

- Primary actions are at the 12 o'clock position
- Targeting is always at the 6 o'clock position. That allows us to keep that consistent across the board. We tried having it as the primary actions for some things, like ships, and then it had to be elsewhere for items with other primary actions. It became messy pretty quick.
- Show Info is always on the 9 o'clock position for a quick access to vital info.
- Plus / More options are at 3 o'clock. There are options like Bookmark and Look at. We made a conscious decision on not going all in on migrating ALL THE OPTIONS into that submenu, some things are better left in right click menu.
- Navigation options are placed on the 45 degree axis; Align, Warp To, Keep at Range and Orbit. The range of these options depends on the distance of the mouse pointer from the center of the menu. So all ranges can be set in a single motion, their placement is deliberate to minimize errors.

The Information Panels

You can see the Autopilot Route, Current System, Factional Warfare, Incursions, Agent Missions and Planetary Interaction information panels there.

Each panel now comes in three flavours; normal, compact and collapsed. Normal mode is the most verbose one, compact mode only displays the most relevant stuff, while collapsed mode will minimize the panel to the top icon row, where it can be accessed by hovering over the relevant icon.

Going between normal and compact mode is accomplished by single clicking the panel header or the small triangle in front of it, while collapsing is done either by double clicking, or single clicking the top row icon.

You can re-order the panels, which is simply done by dragging the top row icons around.

You can change the Autopilot's settings at the „A" (Autopilot, Route) menu. You can show/hide the route completely, just hover your cursor right next to the „A" and a small triangle will appear, you have to click on it.

The Safety System

In Retribution, there will be two levels of illegal behaviour: "suspect" and "criminal". The safety system ensures that you cannot commit illegal behaviour without deliberately switching off your safeties first.

Your new safety system has three states: enabled, partially disabled and disabled.

- While ENABLED, you cannot commit any kind of illegal act
- While PARTIALLY DISABLED, you can commit acts that will get you a suspect flag, but not those that would get you a criminal flag
- While DISABLED, you can do anything you like, up to and including criminal acts

Your safety settings can be adjusted using this cunning new button on your HUD:

Clicking the little round button brings up the safety settings options, where you can select your desired state. Going UP the list (i.e., moving to a less-safe setting) requires confirmation; going DOWN the list does not.

Changing your safety setting happens instantly, but moving to a safer setting will not clear flags that you've already incurred.

If you try to attempt an action that's prevented by your safety level, you will simply not be allowed to do it (this is enforced both on the client and on the server). These commands are all highlighted in the UI - in red or yellow, depending on their severity - and if you try to click one of them, the safety button will blink to remind you where you need to change your settings.

The upshot of all this is that you can never just do something illegal by accident: you always have to deliberately go and disable your safety settings first.

On the other hand, if you're out to cause trouble, you'll never be bothered by last-minute pop-ups again: if you're on a lowsec roam and you turn your safeties off, you're in full free-fire mode from that point forward. And, pilot beware, if you fully disable your safeties in hi-sec then you're just one button-press away from a visit from CONCORD. Use at your own discretion :)

Log Off Safely

This system is pretty straightforward: if you are not doing anything dangerous, you can now opt to "Log Off Safely". This will give you a big on-screen timer showing you how long until you log out.

When the timer runs out, your ship is immediately removed from space and you're informed that you successfully logged out.

You will also notice here that there is a button marked "Abort". If, while you're in the process of logging off, you see some dastardly pirate slash noble upholder of justice delete as appropriate flying over to end your ship's meagre existence, you can abort the process and defend yourself.

This should ensure that you'll never (again) die because you logged out a minute too soon and got podded while the client was closed.

You cannot safely log off while:

- You have active modules
- You're ejecting from a ship
- You have aggression from players or NPCs
- Your ship is exploding or self-destructing
- You're issuing movement commands
- You're launching or jettisoning objects
- You're joining a fleet
- You're deploying or reconnecting with drones
- You have a target lock or are targeted
- You're warping
- You're de-cloaking or under gate cloak

You can't initiate a safe logoff while any of these things are happening, and if they happen once the countdown is running, it'll be aborted.

The Overview

Perhaps the most important element of the user interface is the Overview. By default, this is a window on the right side of the screen that lists and organizes the items in space. You can set what you see, how you see it and in what order you should see it. There are two other windows that supplement the Overview. The Selected Item window shows the icons of the orders you can give in relation to the item you click on. When a ship with a drone bay has drones in the bay, then a third drone window allows for managing them.

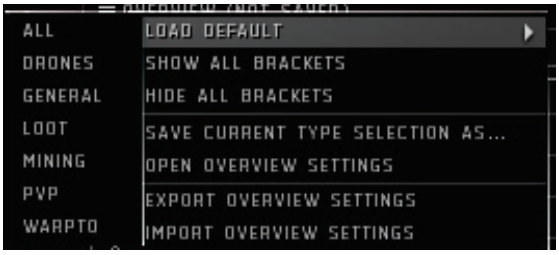
You can customize the overview to list all or just particular objects. The window can also be resized, but be careful how much screen space is used. Too short of a list view could be dangerous if enemies appear at the bottom of the list and not directly in view. Too much and you could experience lag, especially when in a large fleet fight. Lag is a computer phenomenon where what is being displayed does not keep up with real time. In other words, you do not see what is really happening as it is happening. It is essential to find a balance in displaying useful and necessary information.

Overview Range

The overview will display objects based on two areas in space: the current system you are in and 'the grid'. The grid, or immediate area in space, is usually a range of 300-700km. Smaller objects such as NPCs, other players' ships, wrecks, containers, and asteroids will only display if they are on the same grid as you. Larger celestial objects in the system such as gates, stations, and planets can be set to display all the time.

The Overview Settings Menu

Click on the little white box with lines in the upper left corner of the Overview to get the contextual menu for Overview options. The **first section** contains the overview configurations that were setup and saved before, 'Load Default', contains the default overview setups of 'General' , 'Mining', 'All' etc.



You can create several tabs in the overview window, each with its own display rules. Once the tabs are setup and the saved overview displays are loaded into the tabs, you can quickly switch to the most suitable view according to the current situation. For example, you may have one tab for combat showing ships and drones but no asteroids, and another for mining showing all the asteroids.

In the **second section**, you can delete the saved settings and toggle the brackets display on and off. Brackets are the different space items (ships, planets etc.) represented by small icons. Turning off brackets can significantly reduce lag.

In the **third section**, you can save current settings and can choose to configure the Overview. The Overview settings will be discussed in the next section.

Last, but not least, are several options to save the current settings, open the overview settings to customize them, export the current settings to save them to file, and import overview settings to load them from a previously saved file. Export and Import are handy when you need to reinstall your game, and you want to keep your overview settings backed-up for safekeeping.

Things That Matter Most

With the infinite possibilities of Overview settings, even a small mistake can cause disastrous results, either because you do not have enough information, or you have too much of it. Too much information can cause lag, cover too much area on the screen, or force you to scroll to see the more important items in space.

What is the solution? Set what is essential to see during a given situation at the moment its happening (such as PvP, mining, or mission running), and then save those settings. Next, load that view onto a unique tab so you can easily switch from one view to the other.

Filters - Types

Here you can set the types of objects to be appear on the Overview, be it an asteroid, drone, ship or an NPC. In most cases, you can safely uncheck the Empires and CONCORD ships (but we recommend to not uncheck the mission specific enemies).

In case you do not want to mine, the asteroids can be taken off the list as well. Anything changed will be labelled as 'Not saved' until you do so.

The categories of objects you can set to display or not display are as follows:

Asteroids: It lists every mineable asteroid. Primarily of use to miners.

Celestial: Those larger, more significant objects in the system acting as independent entities, like stars, planets, moons, gates, beacons and asteroid belts.

Charge: All kind of bombs, used to be able to see them and perhaps get a chance to dodge them before the explosion.

Deployable: The only current item is the Mobile Warp Disruptor, more commonly referred to as a warp scramble bubble, or just bubble.

Drones: Every pilot's controlled or abandoned drone falls into this category. It is useful to see them to avoid hitting them with a smartbomb or, on the contrary, if you want to target the enemy's drones.

Entity: Everything else in space, like billboards, sentry guns, and mission NPCs. In short, it is useful to leave this category on during missions. Seeing the sentry guns is also useful for survival if you are a pirate.

NPC: Every NPC ship (except for mission ships), friendly or hostile. Faction and CONCORD forces, NPC pirates (aka 'rats'), rogue drones, and so on all fall into this category.

Planetary Interaction: You can find the Customs Office here; we will cover this in the Planetary chapter.

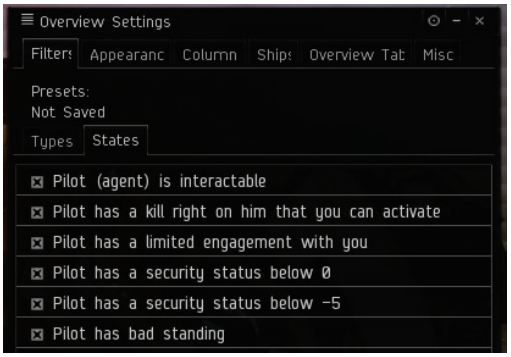
Ship: Player-controlled starships of any size. If the need arises, you can uncheck the appearance of different kind of ships. This is handy if you are assigned the role of 'kill all the frigates' in a fleet. Make a tab where only frigate-sized ships are shown.

Station: As it says, this pertains to stations in a system.

Structure: This pertains to player-owned structures, mainly starbases (also known as POSes).

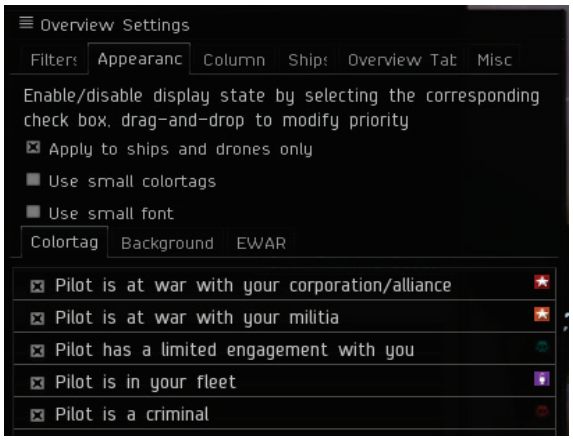
Filters – States

This menu allows you to toggle the visible states of items listed in the Overview. These states works as an additional filter specific to ships and wrecks on the grid. For example, you may not want to have fellow fleet members cluttering up the list. In addition, it is useful when looting wrecks and you do not want the already viewed ones on the list. You can filter players by their security status as well.



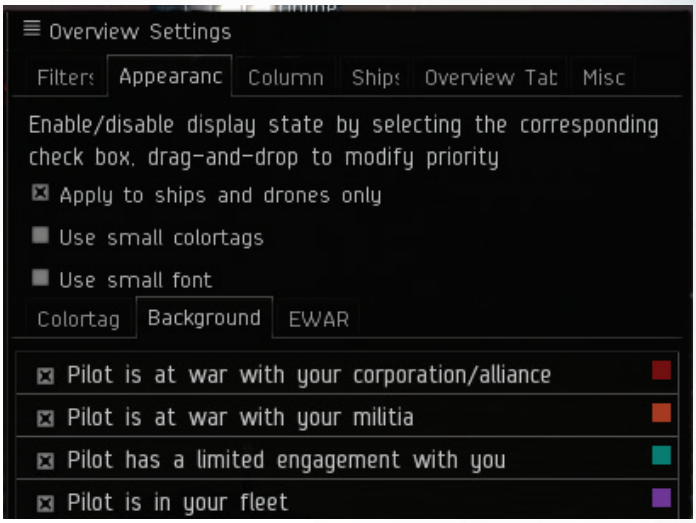
Appearance – Colortag

The Appearance menu is where you set how various items should visually appear on your Overview. On the Colortag tab you can decide whether the given sign should appear on the given bracket on the Overview, and if so, how. These settings can be modified by right-clicking on them. The priority can be arranged by moving the chosen element up or down on the list. These settings affect both the Overview display and the chat window display. For example, it does not matter whether a given player is an alliance member, because in this case his or her security status is not important. However, it is essential to see whether the given player is 'blue' (allied or friendly) to you or your corp regardless of his or her security status. You make this visual sign as a small symbol or as a larger visual indicator. This is useful at different resolutions, and the small symbol is not too distracting.



Appearance – Background

Like in the Colortag sub-menu, the appearance of a given ship can be modified, but in this case, the background is changed. The colours and the priority can be altered here. You can also set the background to flash on and off. This only modifies the Overview display and does not affect the chat window. A useful trick is to set 'war targets' to flash red. It makes them very obvious when they are on your Overview.



By using a combination of the Colortag and Appearance settings, all necessary information can be set to suit your needs. Do not forget that one of the basic secrets of success is to know who is around you, and whether they are friend or foe.

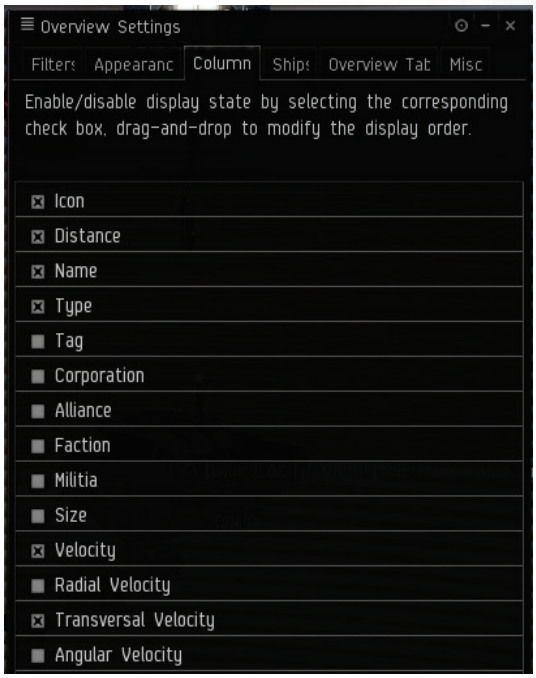
Appearance – Ewar

On this tab, you can set whether or not to display visual indicators about the effect of a particular electronic warfare action being done to your ship.

My personal advice is to leave them all on as this is very useful in both PvP and PvE situations.

Columns

One of the most important parts in configuring the Overview is the Columns tab. Here you can choose to view additional information about what you have set to display. This way you can more easily gather information about your surroundings including types of object, distance, speed, etc.



Icon: Displays a quick visual indicator of what type of object is displayed. Detailed abbreviations are found in Appendix II).

Distance: Distance between you and the target object.

Name: Name of the given object. For example, a stargate displays as 'Stargate (Jita)', a station displays as 'Brutor Tribe Bureau – Moon 8 – Rens VII'.

Type: Identifies the ships flown by other pilots (Rifter, Tempest, Brutix, Avatar, etc.).

Tag: Displays the information set on the 'Ships' tag. More about this in the next section.

Corporation, Alliance, Faction and Militia: Displays the target's affiliation. Not that useful as the same information can be read by using Tags.

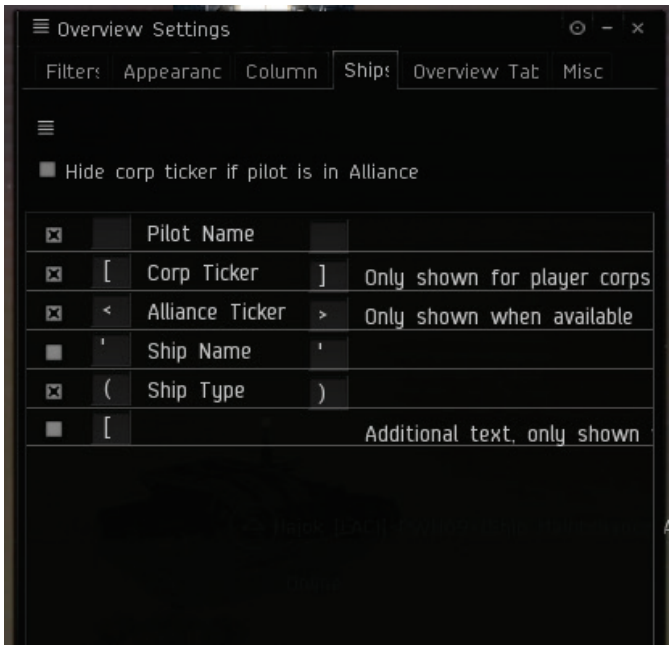
Size: Only useful if you want to target ships of a specific size, such as frigates, cruisers, or battleships.

Velocity: Displays the relative speed of an object. This is useful if you want to follow a ship and accelerate to its speed. It is also useful to see if a ship at distance is moving aggressively or slowly.

Radial Velocity, Transversal Velocity and Angular Velocity: Shows the target's movement in comparison to yours. Putting aside the complicated mathematical equations, the lower these values are, the higher your chance is to hit your target. So, if the value of the Angular Velocity is lower than your weapon's tracking (and assuming the target is in your weapon's range) then you have a good chance to hit. Moving the chosen items up or down can set their order on the Overview.

Ships

Here you can set the data regarding the target ship:



Player's name: The name of the pilot.

Corp and/or Alliance tickers: The short version of the name of the Corporation and/or Alliance.

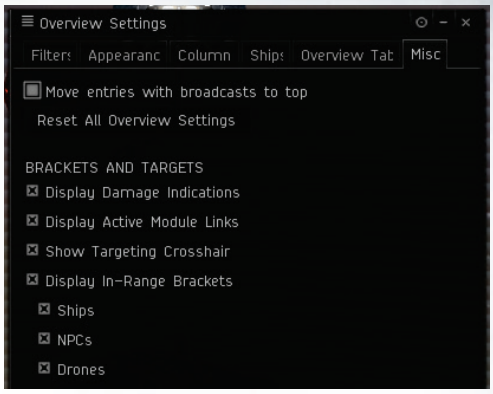
Ship name: The name of the target ship.

Ship Type: The type of the target ship.

Other: Displayed only if the corp ticker is enabled.

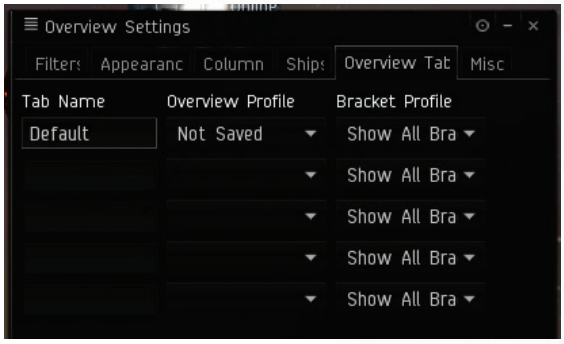
The chosen items can be moved up and down, thus determining the order from left to right on the Overview.

Misc



In the Misc tab, you can choose whether you want to see the broadcast messages on the top of your Overview window. It is useful if you use remote repairers or Remote Shield Booster arrays to help your fleet members to tank (referred to as 'remote tanking'). You can also reset all settings to defaults.

Overview Tabs



Finally, here you can assign various saved Overview settings to different Overview tabs. With this option, you can have separate tabs for mining, mission running, PvP combat, logistic duties, exploration, or any other activity.

As you can see, the previous settings options can give you plenty of choices when creating tabs, letting you place some helpful, preconfigured settings just one click away. Of course, experienced PvP pilots can have different setups for offensive, electronic warfare and support duties.

Legend

The table on the right shows the Overview icons. As the game expands, new icons may be introduced, however, this explains the basics in order to get you started. This is a good reference for everyday use and for understanding most of the icons.

	Frigate, Shuttle, Destroyer		**Cruiser, Battlecruiser**
	Industrial		**Battleship**
	Fighter		**Drone**
	Bomb		**Pod**
	Container		**Filled wreck (= LOOT!)**
   	White: Owned by you (or your fleet / corpmate(s)) **Blue: Free for all** **Yellow: Owned by other player**		**Empty wreck**
	Sentry Gun, POS Turret Battery		**Beacon (Cyno, mission, event, stb…)**
	Large Collidable Object		**Acceleration Gate (Mission's gate)**

Neutral NPC		Hostile NPC	
	Frigate, Shuttle, Destroyer		Frigate, Shuttle, Destroyer
	Cruiser, Battlecruiser		Cruiser, Battlecruiser
	Battleship		Battleship
	POS Tower		Laboratory Array
	Anchored POS module		Cynosural Field Generator
	Moon Harvester		Ship Maintenance Array
	Reactor Array		POS Missile Battery
	POS Shield / Sensor / EWAR Array		Energy Neutralizer Battery
	Bookmark		Star
	Planet		Moon
	Wormhole		Asteroid field / Belt
	Stargate		Station

If you have set up your Overview, export it, and backup the settings file to a safe location. This way, if you have to reinstall EVE, your OS, or plan to play EVE on a different computer, you will not have to configure everything again. Simply import these saved settings.

Advanced Piloting Techniques

This is meant to be a compilation of the various things that separate capsuleers from monkeys. There is more to piloting a ship than locking a target and pressing a button, after all. (From : http://wiki.eveuniversity.org/Advanced_Piloting_Techniques)

Now we have the option to opt into keyboard controls for the ship. This feature is currently in beta and disabled by default. In order to opt in; assign keyboard shortcuts to the actions "direction down", "direction left", "direction right", "direction up" in the ESC menu, via the "Navigation" tab under "Shortcuts".

So, in a one on one fight between two equal ships, how do you get the upper hand and come away with the win? A similar question would be,: in a swarm of fifteen tacklers barrelling towards an enemy fleet, how do you keep yourself alive when frigates are popping all around you?

Capsule Controls: A Beginner's Reference

First things first, you should know what tools you have at your disposal.

Autopilot

The autopilot is capable of setting a route to one or more waypoint systems, and automatically flying your ship there. However it warps to all stargates at 15km, so travel time is significantly greater than manual flight. You will also be a sitting duck for ship-scanners, or gatecamps if you decide to go into low-sec space with autopilot on, so for the purposes of this guide, keep it off! Besides, the whole point of this guide is that you can pilot your ship better than the computer. What the autopilot is most useful for is route-plotting.

Tactical overlay

The tactical overlay button (above the Reset Camera button in the buttons to the left of your capacitor/health circle) puts range markers on your view of space (or, if you have it open, on your solar system map) so you can get a better sense of distance. If you mouse over one of your modules while in the tactical overlay, a bubble will appear around your ship that shows the range of the module. (See this guide for more information: Getting the Visual: Optimal Range and Falloff).

Directional and system scanner

The system scanner will scan the system for Cosmic Signatures, which are less advanced versions of the actual sites found with exploration. If you have scan probes fitted, they will integrate to form a much more powerful system scanner (see Scanning & Probing for more details).

The directional scanner is a tool on every ship which can scan a sphere with a radius of around 14 AU around you. You can manipulate the scanning range and the direction of the scan from 360o to 180o all the way down to 5o to figure out where something is. There are class recordings and a video on this subject in the archive, and a detailed guide on this wiki.

Throttle

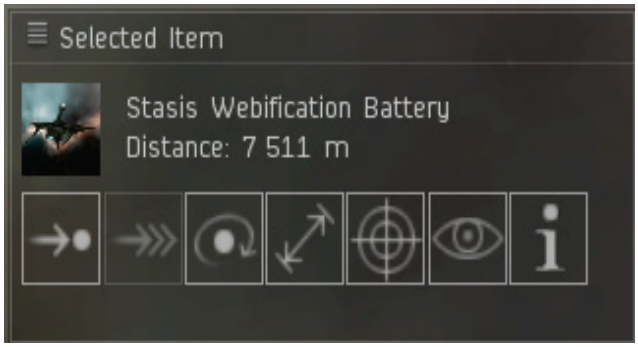
The velocity control (where your velocity is displayed) lets you manually choose what velocity you want to travel at, up to your max velocity. Ctrl-space will stop your ship as long as you are not in warp. If your warp drive is active, but you are still aligning, ctrl-space will stop you and cancel the warp. If you use a custom throttle velocity, you'll have to set it again after you jump through a stargate, since it resets to full speed again.

Double-click

Double clicking in space sends your ship in the direction you clicked. If you imagine, from the perspective of the camera, a vector shooting out from the middle of the screen, the horizontal and vertical angles are determined by where you click on the screen, and the depth component is determined by which way the camera is facing.

Elements of the "Selected Items window"

Approach



The approach button simply aligns your ship in the direction of the selected object and increases your velocity to the velocity you've set in the throttle. This maximizes your radial velocity and minimizes your transversal velocity. This is the same as the "align to" command, but "align to" is used for objects at warp distances, and approach used for objects at subwarp distances (less than 150 km).

Orbit

The orbit button tries to put your ship in a circular orbit around the selected object. The value can be set by right clicking and manually entering a default orbit distance, or by right-clicking the object in the overview and choosing from some preset distances. Orbiting maximizes your transversal and angular velocities, and minimizes your radial velocity.

Your ship's agility will determine your orbit speed: the better your agility (lower agility modifier), the closer your orbit speed will be to your maximum linear velocity. Depending on your agility and the relative speeds of you and the target, your orbit may drop from circular to elliptical, or even to the point where you can't maintain a stable orbit if the other object is moving too fast.

Keep at Range

This draws a line between your ship and the selected object, and adjusts your ship velocity to move you backward or forward along that line in order to maintain the selected range. Like orbit, the default value can be set by right clicking the icon, or you can choose from presets in the right-click menu. Keeping something at range will minimize your radial, transversal, and angular velocities.

Warp

Starts the process of warping to the selected object greater than 150 km away. To warp to something it must be an object in space, a bookmark, or a ship in your fleet. You can adjust how far you will land from your target when you come out of warp, from 0 to 100 km. Again the default value on the button can be changed by right-clicking and presets can be found in the right-click menu. For example, warping to something 150 km away within 100 km will move you inline toward the object 50 km.

When you press the warp button, first you have to align to the target. There are two steps to aligning which happen at the same time:

- lining up the target with your ship's movement direction within 5o
- increasing ship velocity to 75% of its maximum

Your ship will not warp until it meets both of these criteria.

How long this process takes depends on your ship's agility and acceleration. Once you are aligned you will see your normal engines cut out, your warp engine will turn on and you will no longer be able to stop the ship until the warp bubble collapses. Until your warp engine actually turns on, you can still be locked, tackled, bumped (see below) and fired upon as normal.

Jump

Pretty self-explanatory, you jump through the stargate if you are within 2500 m. In order to jump instantly you can spam the button starting half a second before you drop out of warp (you can see your engines slowing down). You may also want to set a keyboard shortcut to turn the autopilot on midwarp, which will then jump instantly for you if you are following a route. If you do that, be sure you disable the autopilot immediately after the jump.

Every time you use any jump drive, jump bridge or jump portal (hereafter all treated as "a jump"; note that this does NOT include stargate travel!), you will accumulate jump fatigue. If your fatigue is below 1 before a jump, your fatigue will be 1 + (light years travelled) after the jump. For subsequent jumps, the fatigue is multiplied after each jump by 1 + (light years travelled). This stays on the character, and decays at a rate of 0.1 per minute.

After a jump is complete but before your fatigue is increased, you gain a jump cooldown timer. The length of this timer is a number of minutes equal to your jump fatigue (before being increased by that jump!), and you are unable to make another jump of any kind until this timer expires. Note importantly that, because fatigue decays at a slower rate than a cooldown timer, you will retain fatigue for a length of time after your cooldown timer expires. Additionally, there is a minimum jump cooldown of 1 + (light years travelled) minutes.

Look At

This changes your camera’s anchor point from your ship to the selected object. You can use this to see where, if anywhere, another ship is aligning, and what kind of weapons it has equipped. Unfortunately missile launchers don’t show up, nor do smartbombs (though the absence of turrets on a turret battleship is a good sign of smartbombs).

Flying Manually For Fun and Profit

Warping

Warping is critically important for moving around space, and manual piloting of your ship has a big impact on how well the warp drive will work.

When you press the warp button, several things happen. Your ship begins to align as described above. You lose a certain amount of energy from your capacitor based on skills and the distance of the jump (if you cancel the warp at this stage the energy is still lost). Once you are aligned, you warp to your destination, accelerating up to, and then decelerating down from, your ship’s warp speed.

Alignment

Pods align instantly, and shuttles nearly so (about 1 second). So if you are paying attention, and have no lag, it is nearly impossible for you to be locked before you warp in these vessels (especially because your signature radius is so small). Frigates have a typical align time of 3-5 s, cruisers might be more like 7-9 s, and battleships, industrials, and larger ships can take 20, 30, or more seconds to align for warp.

Your align time depends on your mass. Higher mass makes it harder to accelerate, decelerate, and turn the ship. Every ship has an agility modifier, which you multiply with the mass to get an “effective mass” that determines how agile your ship really is. Modules like nanofibers or inertial stabilizers reduce your agility modifier and therefore reduce your align time. Eve Fitting Tool (EFT) can give you an approximate align time for your ship loadout.

So where does piloting come in? Well, for one thing you can pre-align your ship to a target so that you warp instantly, even in a massive ship. You need to move toward your warp destination and set your speed at or above 75% of your ship's max speed. Aligning and then stopping your ship does nothing. The direction your ship is facing does not matter. The game only cares about the direction your ship is moving. From a stop, it will accelerate in any direction at the same speed weather that direction is in front or behind the ship. Once aligned, if you need to warp out, you will then warp instantly since the pre-reqs of 75% of your max speed and moving within 5° of the target direction will already be met. If you are in a frigate, you tend to orbit a lot and pre-aligning might not be practical. But in a larger ship in a dangerous situation, pre-aligning might save your hull. Some people will tell you to always fight pre-aligned.

If you come out of a station in an industrial and align to something 90o away, you will have an agonizing wait while you make the turn at max velocity. This is because there are 2 ways that your ship can change speed (besides bumping). One is from the ships engines accelerating it in the direction it is aligning. This can be boosted by an Afterburner or MWD. The other is friction (yes eve space has friction) that slows it down when you hit stop or reduce your speed. The problem is the amount of friction increases with speed so it slows quickly at high speeds but as you slow down the rate decreases. The last bit takes a very long time to stop since friction is very low at those speeds. You just came out of the station and are moving at high speed. Now you align to something 90o away. 100% of the engine's power starts accelerating the ship in the direction of the align point and after your normal align time your ship is now moving toward the warp destination near the appropriate speed. But the ship is also still drifting in the original direction. This means that the ship is actually moving at an angle and will not align until friction slows the ship from moving in the original direction. That process can take a long time.

There are 2 ways to fix this. If you are in a ship that aligns quickly (like a shuttle) and there are hostiles on grid, you can hit stop ship. As long as you do not do anything else but hit the stop ship button, you will not be able to be targeted by the hostiles for 30 seconds. Once the ship comes to a halt, warp out. This ends up taking about the same amount of time as simply aligning but it minimizes the time that you are targetable.

The second way is faster. Rather than letting friction slow you down, you can double click toward the station (which makes you targetable) to let the engines stop you, then warp out once you are near zero velocity. A slightly faster way is to double click toward the station but at an angle toward the align point then warping when the ship stops moving away from the station. This method of using your engines to slow down then turning can be used for turning quickly in combat as well.

The bottom line is that you should always be aware of how long it will take you to get to the safety of warp. Whether you're hauling trade goods or at half structure in the middle of an enemy fleet, good warp awareness can come in really handy.

Speed and Alignment tricks

Another point to remember is that your required speed to align is always 75% of your current max velocity. Being webbed can sometimes help you get into warp faster, since it lowers your max velocity -- if you're piloting a freighter you can speed travel up by bringing a friend (within your corp, so they don't get CONCORDed) along to web you. This is also why tacklers are taught to 'point, then web'.

Using a propulsion module (usually a MWD) can reduce your align time if it is normally more than the cycle time of the module (this can be the case, for example, with an MWD on the Orca). By pulsing the module once, the aim is to get past your normal align speed, even though your align speed with the module active is much higher. Once the cycle ends, your max speed (and the required align speed) will drop back down to normal and you should warp soon after.

When you combine MWD use with a protoype/covops cloak, then you can use the MWD+cloak trick to align while cloaked, providing much better security in some situations.

"Warp within" and Bookmarks

Where you come out of warp is critical. As discussed above, autopilot is bad because you come out of warp so far from the gate that you cannot jump immediately. If you warp to 0 km on a gate, you'll land within jump range, which is crucial if you want to avoid confrontation.

Likewise if you're warping to a hostile gate, you'll be at a decisive advantage if you drop out of warp at your optimal range. The easiest way to do this is by warping within X km, where X is your optimal range. Remember you can set X to anything between 0 and 100 km by right-clicking on the warp icon. If you have bookmarks around the gate you have even more options for recon, or for warping past the gate, or somewhere unexpected. For more information about bookmarks, there's a really good thread on the forums here

One last thing about warp within: if you warp to a cloaked ship in your own fleet, never warp to 0 because that will break their cloak and leave them vulnerable. Warp to no closer than 5 km.

Manual Flight and Gunnery

The second major topic has to do with tracking mechanics. Damage from both turrets and missiles is affected by how the ships are moving. You can read about the details of tracking here and try a neat flash-based guide here; and you can read about the details of missile damage here. A boiled down summary:

- the higher your angular velocity, the harder you are to hit with turrets.
- the higher your absolute velocity, the less damage you take from missiles.
- the smaller your signature radius, the harder you are to hit with turrets (provided you move) and the less damage you take from missiles

So, given these facts how can you sway a fight in your favor? Well first you have to assess the situation and decide what angle you want to take. Are you better at offense or defense? The relevant numbers are the time it will take you to beat your opponent's tank versus the time it will take him to break your tank. Your only goal is to make that first time less than the second time, which you can do through increasing your applied DPS, or increasing your survivability.

It might work better to use examples:

Two identical frigates: Artillery vs Autocannon

The pilot using artillery knows that artillery does less damage per second (DPS) than autocannon. But if he can maintain a range of 20 km, he knows that he can damage his opponent while his opponent's autocannon can't damage him: the artillery will win in the end. So he can set his orbit to 20 km, or if he wants to do more damage, he can keep him at a 20 km range so that the angular velocity goes down and the artillery track more easily.

The autocannon pilot knows he has to get up close in order to do any damage. Once he's there, if he goes into orbit he'll have maximized his angular velocity and will probably avoid all the fire from the slow-tracking artillery, while applying lots of DPS from his fast-tracking autocannon.

You might notice that in this situation, whoever has the higher speed and agility is going to have a decisive advantage: they will control the range of the fight so their guns are doing maximum damage, and they will be able to set an orbit around the other ship such that they will take minimum damage.

If you are the slower ship in this situation, it's an uphill battle but it's not over. Taking another example:

A frigate vs. a cruiser

The frigate pilot knows that he won't last long if he lets the cruiser's medium guns track him with low angular velocity. But he also knows that his defense will be very high if he can get under the cruiser's guns by establishing a close orbit.

Getting in close without getting hit is a problem though. The best technique for frigate pilots to do this is to 'spiral in' on the target rather than simply approaching directly (read about spiralling in in detail here).

The cruiser pilot knows that medium weapons struggle to properly hit the frigate –- and the frigate will have the speed advantage, and so can make itself very hard to track. But there are a couple of options. One is to deploy drones, which have a much easier time tracking and orbiting fast ships. Another is to minimize the transversal so that he can get some good hits off. As the frigate is approaching, he can try to keep at range to keep angular velocity low. Even if the frigate successfully gets into a close orbit around the cruiser, it's not over yet. If the cruiser has a decent velocity it can make the frigate's orbit elliptical: and when the frigate goes around the narrow ends of the oval its transversal will be lower than average. Changing directions frequently and sudden bursts of speed from a pulsed overheated propulsion module will also make the frigate adjust its orbit and possibly lower its traversal.

This works even better if the cruiser pilot times his direction/velocity changes well: for example, as the frigate is moving across the top of the cruiser pilot's screen to the left in his orbit, the cruiser pilot can make a quick right turn and this will make the frigate chase the cruiser –- with low angular velocity –- for a little while.

A cruiser in a L4 mission

Let's assume for fun you're in an autocannon ship and all the enemies are turret based as well. You might be suicidal running a L4 mission in a cruiser but this is just a thought experiment. First thing in a close range heavy fire situation: always keep moving. You'd want to have an afterburner on constantly. Next you'd have to figure out what was doing the most damage. It might not be a battleship -- a lot of that damage is reduced because of the size difference. It might be an elite cruiser. Whatever it is, you'd orbit it to minimize the damage. Then you'd set your drones on the frigates that are warp jamming or webbing you, and, using the overview, pick out ships that have a low angular velocity to attack.

Now obviously you'd want a massive tank (a HAC or a T3, perhaps?) to actually pull this off. But the point of this is twofold: a lot of these maneuvers will fail in missions because there are just too many ships and well..have you seen the last scene in "Butch Cassidy and the Sundance Kid"? Just like in other games, pilot skill is going to shine more in small gang or solo fights.

The second thing is that long range weapons are often really good for PvE. By staying at long range using missiles, beam lasers, railguns, artillery or drones, you avoid a lot of short-range turret-based DPS and the enemies present themselves in sub-waves separated by the different times they take to get close to you.

Bumping

Bumping is basically the act of throwing your ship directly at an opponent at high speed, to turn his ship around and mess up any aligning or movement he's trying to do. (You're welcome to shout 'Ramming speed!' while doing this, provided you don't do so over

Mumble . . .) The faster and more massive your ship is, the better: Machariels and Stabbers with battleship-sized MWDs fitted (you'll probably want some Reactor Control Units to get enough grid) work nicely. Bumps may keep a slowly-aligning ship from entering warp indefinitely. They can also, together with webs, delay a ship which is trying to burn back to a gate after jumping into a gatecamp.

Modules

Knowing what your modules can do -- their ranges (cold and overheated), the amount of capacitor they're likely to use up, and their effects -- is very important. Even better, know your enemies modules and what they're capable of. Use the Look At button to see if that guy has artilleries or autocannons. Figure out from their speed in your overivew if they're using an AB or MWD. Once you have some experience, you can often deduce how your opponents will behave if you know which kind of propulsion module and which weapons they're using.

Thermodynamics

The Thermodynamics skill lets you overheat modules, at the cost of damaging them. Usually this just gets you more oomph -- more DPS from guns, stronger jam strength on ECM jammers, &c -- but overheating webs, warp disruptors and warp scramblers increases their range, letting you catch the enemy earlier, or hold them at a longer range for a short while. You can read a detailed guide to overheating here.

Pre-activating Modules

If you are in the middle of locking someone, you can activate your modules and they'll instantly turn on when you've completed the lock. This can make the difference between a tackled target and a free target.

Attributes and Skills

To see your attributes, skills, and related settings, open the Character Sheet tool from the NeoCom. As you can see, your character has five attributes which determine how fast you can learn skills.

Learning is simple. Every skill has two attributes: the primary and the secondary. Every minute, your pilot trains a certain amount of points with the primary attribute counting for double, and the secondary attribute counting times one.

Experienced players claim that an average player who wants to focus on fighting, agent running, or mining should aim for a balanced distribution of attributes, with Perception and Intelligence slightly higher than the others and Charisma lower than the others.

An important note is that each skill has a difficulty multiplier ('Rank'), which indicates the length of training time that is needed to acquire that skill.

A skill with a multiplier of one ('Rank 1') can be learned in a relatively short time all the way up to Level V, whereas a skill with a multiplier of 14 ('Rank 14') would need more than 40 days of training time for Level V, even if both relevant attributes are set to the max values.

Learning Speed

Your learning speed will increase the higher your attributes are. This speed is calculated according to the following formula: Skillpoints / Minute = (Primary attribute + Secondary attribute /2).

To calculate the total time needed to learn a skill, multiply the total number of skillpoints you will earn from training a skill to Level V by the difficulty factor or rank. Then divide that result by the learning rate.

Overall, if you increase your attributes by utilizing implants, or through neural remapping, then the skills based on those enhanced attributes will take less time to train. For example, the Science skill is a rank 1 difficulty level, and its two main attributes are Intelligence and Memory.

Learning Times With Even Distribution (DD:HH:MM:SS)

		Required SP	Without Implants	Implant Set +1	Implant Set +2	Implant Set +3	Implant Set +4	Implant Set +5
			Int: 20, Mem: 20	Int: 21, Mem: 21	Int: 22, Mem: 22	Int: 23, Mem: 23	Int: 24, Mem: 24	Int: 25, Mem: 25
Skill LVL	1	250	00:00:08:20	00:00:07:56	00:00:07:35	00:00:07:15	00:00:06:57	00:00:06:40
	2	1414	00:00:47:08	00:00:44:53	00:00:42:51	00:00:40:59	00:00:39:17	00:00:37:42
	3	8000	00:04:26:40	00:04:13:58	00:04:02:25	00:03:51:53	00:03:42:13	00:03:33:20
	4	45255	01:01:08:30	00:23:56:40	00:22:51:22	00:21:51:44	00:20:57:05	00:20:06:48
	5	256000	05:22:13:20	05:15:26:59	05:09:17:35	05:03:40:17	04:22:31:07	04:17:46:40
SP / Hour			1800	1890	1980	2070	2160	2250

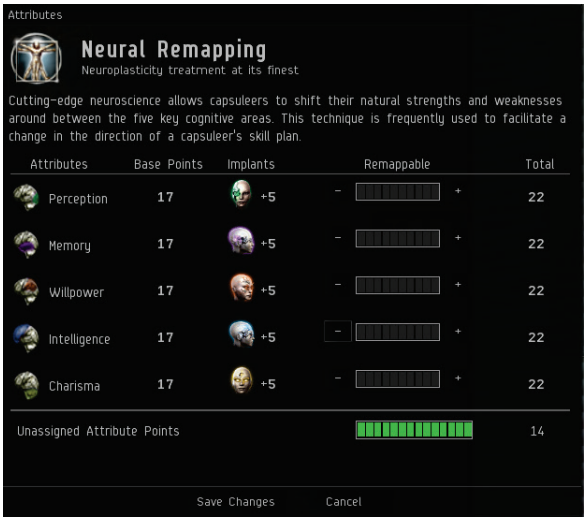
Learning Times With Remap, Best Learning Speed (DD:HH:MM:SS)

		Required SP	Without Implants	Implant Set +1	Implant Set +2	Implant Set +3	Implant Set +4	Implant Set +5
			Int: 27, Mem: 21	Int: 28, Mem: 22	Int: 29, Mem: 23	Int: 30, Mem: 24	Int: 31, Mem: 25	Int: 32, Mem: 26
Skill LVL	1	250	00:00:06:40	00:00:06:25	00:00:06:10	00:00:05:57	00:00:05:45	00:00:05:33
	2	1414	00:00:37:42	00:00:36:15	00:00:34:55	00:00:33:40	00:00:32:30	00:00:31:25
	3	8000	00:03:33:20	00:03:25:08	00:03:17:32	00:03:10:29	00:03:03:54	00:02:57:47
	4	45255	00:20:06:48	00:19:20:23	00:18:37:24	00:17:57:30	00:17:20:21	00:16:45:40
	5	256000	04:17:46:40	04:13:24:06	04:09:20:59	04:05:35:14	04:02:05:03	03:22:48:53
SP / Hour			2250	2340	2430	2520	2610	2700

You can see the requirements of various skill levels and difficulties on the following tables. The skill point (SP) requirements for various levels includes skillpoints from the levels you have already learned. The game will only display the differences.

	Learning Times With Maximum Speed (2700 SP/HR, TIME FORMAT – DD:HH:MM:SS)									
	Skill lvl 1		Skill lvl 2		Skill lvl 3		Skill lvl 4		Skill lvl 5	
	SP Need	Learning time from lvl 0	SP Need	Learning time from lvl 0	SP Need	Learning time from lvl 0	SP Need	Learning time from lvl 0	SP Need	Learning time from lvl 0
Rank 1	250	**00:00:05:33**	1 414	**00:00:31:25**	8 000	**00:02:57:47**	45 255	**00:16:45:40**	256 000	**03:22:48:53**
Rank 2	500	**00:00:11:07**	2 828	**00:01:02:51**	16 000	**00:05:55:33**	90 510	**01:09:31:20**	512 000	**07:21:37:47**
Rank 3	750	**00:00:16:40**	4 242	**00:01:34:16**	24 000	**00:08:53:20**	135 765	**02:02:17:00**	768 000	**11:20:26:40**
Rank 4	1 000	**00:00:22:13**	5 656	**00:02:05:41**	32 000	**00:11:51:07**	181 020	**02:19:02:40**	1 024 000	**15:19:15:33**
Rank 5	1 250	**00:00:27:47**	7 070	**00:02:37:07**	40 000	**00:14:48:53**	226 275	**03:11:48:20**	1 280 000	**19:18:04:27**
Rank 6	1 500	**00:00:33:20**	8 484	**00:03:08:32**	48 000	**00:17:46:40**	271 530	**04:04:34:00**	1 536 000	**23:16:53:20**
Rank 7	1 750	**00:00:38:53**	9 898	**00:03:39:57**	56 000	**00:20:44:27**	316 785	**04:21:19:40**	1 792 000	**27:15:42:13**
Rank 8	2 000	**00:00:44:27**	11 312	**00:04:11:23**	64 000	**00:23:42:13**	362 040	**05:14:05:20**	2 048 000	**31:14:31:07**
Rank 9	2 250	**00:00:50:00**	12 726	**00:04:42:48**	72 000	**01:02:40:00**	407 295	**06:06:51:00**	2 304 000	**34:13:20:00**
Rank 10	2 500	**00:00:55:33**	14 140	**00:05:14:13**	80 000	**01:05:37:47**	452 550	**06:23:36:40**	2 560 000	**38:12:08:53**
Rank 11	2 750	**00:01:01:07**	15 554	**00:05:45:39**	88 000	**01:08:35:33**	497 805	**07:16:22:20**	2 816 000	**42:10:57:47**
Rank 12	3 000	**00:01:06:40**	16 968	**00:06:17:04**	96 000	**01:11:33:20**	543 060	**08:09:08:00**	3 072 000	**46:09:46:40**
Rank 13	3 250	**00:01:12:13**	18 382	**00:06:48:29**	104 000	**01:14:31:07**	588 315	**09:01:53:40**	3 328 000	**50:08:35:33**
Rank 14	3 500	**00:01:17:47**	19 796	**00:07:19:55**	112 000	**01:17:28:53**	633 570	**09:18:39:20**	3 584 000	**54:07:24:27**
Rank 15	3 750	**00:01:23:20**	21 210	**00:07:51:20**	120 000	**01:20:26:40**	678 825	**10:11:25:00**	3 840 000	**58:06:13:20**
Rank 16	4 000	**00:01:28:53**	22 624	**00:08:22:45**	128 000	**01:23:24:27**	724 080	**11:04:10:40**	4 096 000	**63:05:02:13**

Play It Again, Sam! Or Neural Remapping



When your pilot is new, you can change the attribute allocation twice. After that, you can remap only once a year, but even then none of your basic attributes can be less than 17. Since neural remapping is only a once yearly option, consider your modifications carefully. It is strongly advised that you make a one-year skillplan using the EVEMON stand-alone tool from Battleclinic.com as it helps you determine the necessary modifications for optimal attributes. You'll need an API Key to make it work and an EVE account must be older than three days to acquire one. Nevertheless, it is worth using the program, so familiarize yourself with the skills, ships, and plans for future use. The total value of an attribute is the base points plus the implant boost (if any) plus additional attribute levels based on trained learning skills.

Training Queue

The first 'golden rule' of EVE Online: Always train your character!

It is advisable to start training the science skill and the cybernetics skill (necessary to use implants) as soon as possible.

The Skill Training Queue is there to help maximize your training so that there is no downtime between skills. Think of it as a waiting list where skills can be lined-up, waiting to be trained, during the next 10 years (up to 50 skills). This way, your character can train in the given skill order automatically. It is required that the last skill on the list must start training within the next 10 years ☺.

Skill books represent skills that can be trained. When you want to learn a brand new skill, right-click on the skill book in your inventory. You have a choice of either training that skill to level one right away or to inject the skill. If you have every prerequisite skill, then the new skill will either be added into your training queue or trained to Level I or it will be injected into your skills list at Level 0 for training at a later time. You can also add new skills by selecting to train after the current queued skills, but this only works if there is room in the 10 years time limit!

You can manage your skill queue by clicking on the Open Training Queue button in the skills area of your character sheet.

This window displays your skills list on the left and training queue on the right. Click on the skill you want to train on the left, and then click on the Add button to add the skill to the queue. If you check Skills That Fit within Queue's Timeframe, then only skills that can be trained within the 24-hour interval will display. Do not forget to press Apply when done. The Remove button takes the selected skill out of the training queue.

Attributes By Skill Group

The following table shows the TYPICAL Primary and Secondary attributes needed to train a given skill category. Of course, this is only in general. Later, it is worth planning a one-year training schedule in EVEMON, and remapping your attributes accordingly. It accelerates training significantly!

	Intelligence (INT)	Perception (PER)	Charisma (CHA)	Willpower (WIL)	Memory (MEM)
Armor	Primary	-	-	-	Secondary
Corporation Management	-	-	Secondary	-	Primary
Drones	-	Secondary	-	-	Primary
Electronic Systems	Primary	-	-	-	Secondary
Engineering	Primary	-	-	-	Secondary
Gunnery	-	Primary	-	Secondary	-
Leadership	-	-	Primary	Secondary	-
Missiles	-	Primary	-	Secondary	-
Navigation	Primary	Secondary	-	-	-
Neural Enhancement	Primary	-	-	-	Secondary
Planet Management	Primary	-	-	-	Secondary
Production	Secondary	-	-	-	Primary
Resource Processing	Secondary	-	-	-	Primary
Rigging	Primary	-	-	-	Secondary
Scanning	Primary	-	-	-	Secondary
Science	Primary	-	-	-	Secondary
Shields	Primary	-	-	-	Secondary
Social	Secondary	-	Primary	-	-
Spaceship Command	-	Primary	-	Secondary	-
Subsystems	All important except Charisma				
Targeting	Primary	-	-	-	Secondary
Trade	-	-	Primary	Secondary	-

What Should I Train?

What you should train depends on many things, but mainly it depends on whether you want a specialized or a jack-of-all-trades pilot. When you first start out, being able to afford skill books, ships, and fittings can be difficult.

So, planning out what you want to train based on expense is another approach to deciding what to train.

Career Path	Recommended skills
Base Skills (Everyone)	Capacitor Management, Capacitor Systems Operation, Power Grid Management, CPU management, Spaceship Command, Navigation, Warp Drive Operation
Skills for Miners	Mining Frigate, Mining, Astrogeology, Industry, Refining, Drones, Mining Drone Operation, Refinery Efficiency, Mining Barge, Exhumers
Skills for Industrialist	Industry, Production Efficiency, Metallurgy, Mass Production
Amarr Ships	Small Energy Turret, Repair Systems, Controlled Burst, Gunnery, Capacitor Systems Operation, Hull Upgrades, Motion Prediction, Sharpshooter, Rapid Firing, Missile Launcher Operation, Long Range Targeting
Caldari Ships	Missile Launcher Operation, Small Hybrid Turret, Standard Missiles, Rockets, Gunnery, Shield Operation, Shield Management, Long Range Targeting, Sharpshooter, Motion Prediction, Rapid Firing, Controlled Burst
Gallente Ships	Small Hybrid Turret, Gunnery, Drones, Scout Drone Operation, Repair Systems, Hull Upgrades, Controlled Burst, Sharpshooter, Motion Prediction, Long Range Targeting, Rapid Firing
Minmatar Ships	Small Projectile Turret, Gunnery, Motion Prediction, Rapid Firing, Sharpshooter, Shield Operation, Shield Management, Missile Launcher Operation, Standard Missiles, Rockets, Long Range Targeting

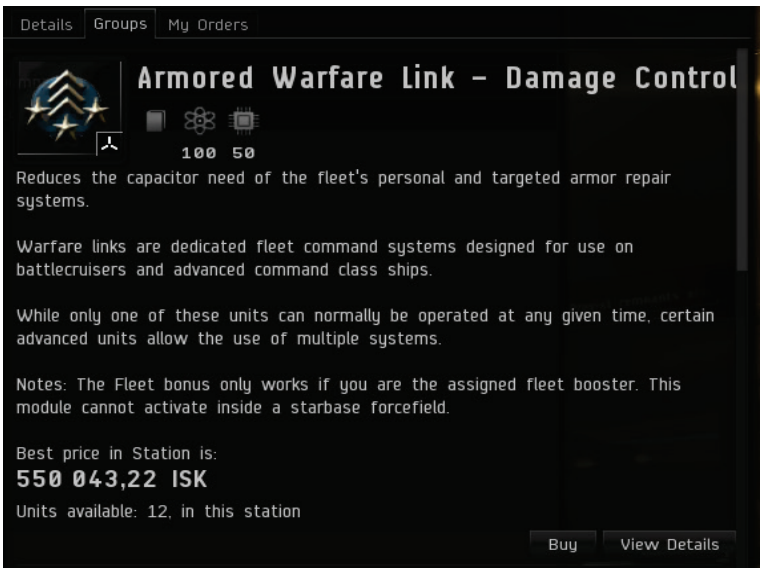
Getting skill(book)s

Thanks to our new search window we can find the things we would like to purchase much simpler.

All we have to do is write down the name (or part of the name – 3 letters at least) of the item and hit search.

For example ‘mjo’ or ‘gur’ and we can be sure that in both cases the Guristas Mjolnir Heavy Assault Missile will be among the hits of the search.

If you open the Market tool, you can check whether a certain piece of equipment, ship or implant can be used or not.



If a certain module can’t be fitted on the currently occupied ship, then both CPU and PG icons will be gray.

It can also filter results by various skill options. Be careful, do not forget these filters are set or you might be surprised if something does not display. The Market Settings tab **can filter results** by: Price, Jumps, and Quantity. And **can display results** from: High-Security space, Low-security space, Nullsec space.

Skill Requirements

All the equipment, ships and implants have skill prerequisites. To see them, select Show Info on the object, then go to the Prerequisites tab.

Some ship classes have faction specific skills required for them. For example, in order to fly a Caldari frigate, you need to learn the Caldari Frigates skill.

As you can see, most of the equipment, ships and implants require skills in order to use them. However, which skills are needed exactly? In other words, which skill do you need in order to fly that certain ship, or to use that given module?

It is a good question, and the answer is not entirely definite. Just because you can fly that certain ship doesn't mean that you can actually fly it well. Why?

Even if you can fly a particular ship all is in vain if you cannot fit the necessary weapons, protection and other additional equipment on it.

In such a case, even the best and the most expensive equipment is useless.

- **A Green Check** means the skill is trained to the required level.
- **A Yellow Circle** means you've started training the skill, but not to the required level.
- **A Red X** means the skill has not been trained at all. You must meet all the prerequisites, acquire the skill and train it.

After buying and injecting the skill, the Yellow Circle appears in front of the skill name on any prerequisites list

For what? And at what level?

Sometimes the question rise: 'But why do I need this for?' or 'Why do I have to train this up to level 3-4-5, it takes a whole lot of time!'

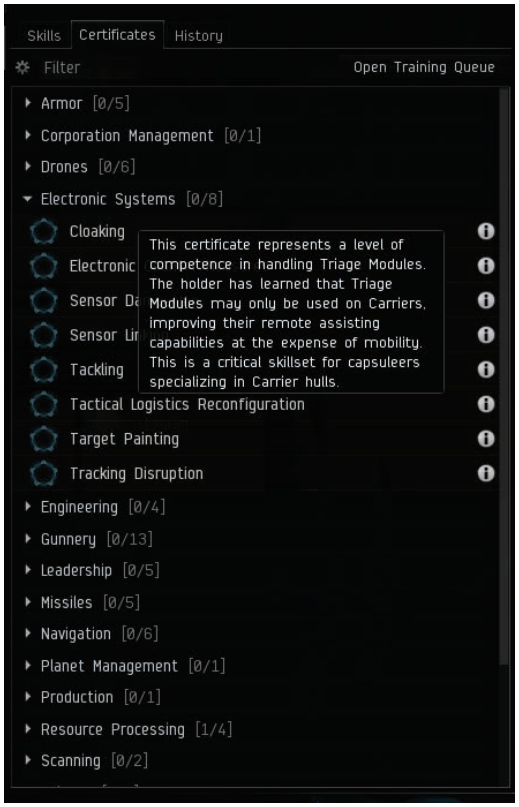
The answer was not always so simple as it is today. But luckily someone a CCP finally realized this problem and – what is more important in our point of view - solved it.

Now, if we open up a skill by 'show info' (either on the character sheet or on the market) you will notice a new tab, named 'Required For'.

This is where we can see what the skill enables us to use or to learn at the respective levels.

Of course this only means that the achievement of said skill level only means that we gain the potential to use the unlocked items. We still have to acquire them through the market.

Certificates: what are these and how do they work?



The Certificates helps us to organize the skill queue and follow the growth.

Important! The Certificates give you nothing but advice. You don't need to learn all skills in the Certificate to fly/do certain ships/activities!

In order to see the Certificates, click on the "Certificates tab" on the Character Sheet (Alt + A) – Skills tab.

How can I get Certificates?

First of all: Certificates will now be automatically claimed, just learn the necessary skills to acquire the certain Certificate.

The markings are as follows:

- **A Green Check** means: The Certification is available (or it is issued as learned)
- **A Yellow Circle** means: You don't have all prerequisites (but you have at least one)
- **A Red X** means: You don't have even the basic skills.

The Interbus Ship Identification System (ISIS)

What is the ISIS? Like the name suggests, the ISIS is a tech tree system to identify ships in EVE. It presents all ships in the game in a visual and interactive way and illustrates clearly the skill requirement progression path for unlocking ships while giving players the high level information they need to decide which faction, ship group and ship to progress towards. The tree is dynamic and shows which ship groups and ships you are training for and will give you a clear indication when new ships have been unlocked or your ability to use them effectively has changed.

Master(y) and Servant

The mastery of a ship is a collection of all certificates of the same level that are assigned to a specific ship. These mastery levels are then shown for each ship in the ISIS so you can keep track of your mastery level for each ship in the game.

Each ship will have its own Info Bubble consisting of high level icons which represent the core roles of the ship as well as all bonuses for the ship. The icons serve the purpose of giving players a high level understanding for what role the ship is meant to fill, but of course there is never a single “right way” to use ships and this is primarily meant as a base guideline.

Skills needed to unlock Ship Groups

The info bubbles will display the skills you still need before unlocking a ship group. Once you have unlocked it those skills will not be displayed in the info bubble and instead it will display the skills that affect bonuses of the ships in the group. This way you are getting contextual information without cluttering it with information that isn't relevant to you at each time.

Of course if you still want to know what skills you have already trained to unlock the group, you can always open the Show Info.

The Compare tool

The Compare Tool (available by clicking the “E” icon at the top of the NeoCom, then selecting “Compare Tool” in the drop-down list) can be used to quickly weight various ship attributes from the ISIS

For this, simply drag and drop ship types from the ISIS into the compare tool window, then select specific attributes to be compared from the left scroll-down tab.

Ships may also be dragged and dropped from the show info ship model or Market windows.

Implants: “Wired Thinking”

Implants are special items that plug directly into the pilot's head, providing increased abilities to their user. There are five implants for attribute enhancers and five more slots for skill hardwirings. Once an implant is plugged in, it can only be removed by selecting and destroying it, or by being pod killed.

Skill Hardwirings

Considering the advice given by ValenHUN, I began to search descriptions of Implants, and I must say even the evelopedia’s pages are not complete, and the available pieces of information are hard to understand. But the hardwirings are very important and useful parts of world of EVE. Hopefully you met them checking the Attributes. We’re going to say some words about the Implants that affects skills, ships’ and modules’ features.

The following group of skill DO NOT have any booster Implants (aka: hardwirings):

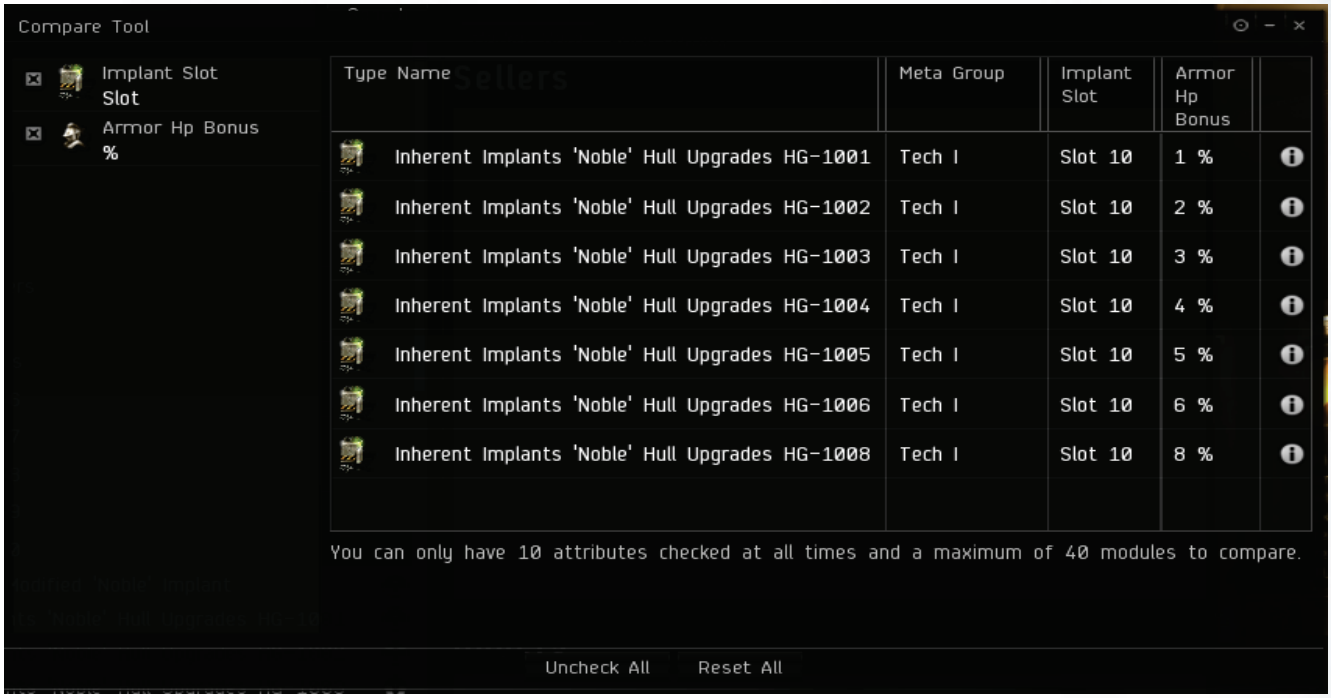
- Corporation Management
- Drones (That would be great…)
- Planet Management (I bet you thought about this: +10% colony PG/CPU-s implant, would be nice isn’t? ☺)
- Subsystems
- Trade

Considering the lack of space for the detailed descriptions, the numerical data of the Implants won’t be mentioned. There are (mostly) six of them are exist, three basics, three can be gained from the CONCORD LP store (Incursion). Exceptions are the Omega and Leadership (1-1 issue), as well as the Science and Industry Implants (they have three variations).

The effect of the Implant may be fund out easily to see the name of it:

[Manufacturer][group name][Skill/Function][two-spell identifier][number of slot][Bonus]

For example: Inherent Implants 'Lancer' Controlled Bursts CB-702: Manufacturer: Inherent Implants, it is part of the Lancer series, enhancing the effect of Controlled Burst (CB), it has to be placed into slot 7, and gives 2%. Eifyr and Co. 'Rogue' Warp Drive Speed WS-618: Manufacturer: Eifyr and Co., enhancing the Warp Drive speed (WS), slot 6, and it gives 18% bonus.



In order to check the availability of Implants in exchange of LP, check this webpage: **http://www.ellatha.com/eve/LP_Stores.asp**

The more effect, the more necessary skills. On the left side are the Implants that have CONCORD variation, on the right are the ones that have only the three basics.

To be precise these head Implants can be found as Skill Hardwiring, and they can be separated into three point of views:

- Which slot they can be placed into.
- Considering their effects.
- Manufacturer/serial

Grouping the effects of Implants you must check the proper chapters (Mining Implants in Mining Chapter, Scanning Implants in Scanning Chapter and so on).

Grouping by the manufacturer and serial is just for RP and statistic reasons (but it can be predicted from which corporation's LP stores can it be gained, to see more, check the link above).

The list won't contain the unique (Michi, Shaqil, Ogdin and the others') Implants. The reason is their high price and hard availability.

Where did I put it?

Let's see the grouping on the basis of slots. The slots 6, 8, 10 are in a special situation since they provide space for more types of Implants. It unfortunately means that using Small Energy and Small Projectile damage modifier Implants at the same time is forbidden since they must be placed into the same slot.

Obviously using Jump clones may solve this problem to have specialized effects. I used bold type where the Implants exists only in certain slots (e.g. Omega Implant in slot 6).

Slot	Skillgroup
6	Armor, CPU management, Power Grid management, **Faction Omega Implants**, Gunnery, Missile, Navigation, Science, Shield
7	Armor, CPU management, Power Grid management, Gunnery, Missile, Navigation, Science, Shield
8	Armor, CPU management, Power Grid management, Gunnery, **Industry**, Missile, Navigation, Science, Shield
9	Armor, CPU management, Gunnery, Missile, Navigation, Science, Shield
10	Armor, Gunnery, **Industry**, **Leadership**, Missile, Science

In the name column I wrote the two-character name and slot number (so it is easy to find them on the market/contracts). Using this method you can find the whole set from the smallest one to the biggest one (in respect of bonus given by them). For example:

- Inherent Implants "Noble' Hull Upgrades HG 1001 : HG-10,
- Zainou 'Gypsy' Signature Analysis SA-702 : SA-7 etc...

And now let's see more detailed that which bonuses are given by certain slots…

Slot 6	Name	Effect
Armor	RS-6	A neural Interface upgrade that boosts the pilot's skill in operating armor/hull repair modules. 1-6% reduction in repair systems duration.
Electronics	EU-6	A neural interface upgrade that boosts the pilot's skill with CPU management upgrades. 1-6% reduction in CPU need of modules requiring the CPU management Upgrade skill.
	EE-6	A neural interface upgrade that boosts the pilot's skill at CPU management. 1-6% bonus to the CPU output.
Engineering	EO-6	A neural interface upgrade that boosts the pilot's skill at Capacitor systems operation. 1-6% reduction in capacitor recharge time.
	EG-6	A neural interface upgrade that boosts the pilot's skill at Power Grid management. 1-6% bonus to the power grid output of your ship.
Faction Omega Implants	Omega	50% bonus to the strength of all relevant faction implant's secondary effects.
Gunnery	SP-6	A Eifyr and Co. gunnery hardwiring designed to enhance skill with small projectile turrets. 1-6% bonus to small projectile turret damage.
	SE-6	A Inherent Implants gunnery hardwiring designed to enhance skill with small energy turrets. 1-6% bonus to small energy turret damage.
	SH-6	A Zainou gunnery hardwiring designed to enhance skill with small hybrid turrets. 1-6% bonus to small hybrid turret damage.
Missile	LE-6	1-6% reduction in the CPU need of missile launchers.
	TD-6	A neural interface upgrade that boosts the pilot's skill with torpedoes. 1-6% bonus to the damage of torpedoes.
	CM-6	A neural interface upgrade that boosts the pilot's skill with cruise missiles. 1% bonus to the damage of cruise missiles.
Navigation	NN-6	A Eifyr and Co hardwiring designed to enhance pilot navigation skill. 1-6% bonus to ship velocity.
	AB-6	A neural interface upgrade that boosts the pilot's skill with afterburners. 2-12% bonus to the duration of afterburners.
	WS-6	A neural interface upgrade that boosts the pilot's skill at warp navigation. 5-18% bonus to ships warp speed.
	WD-6	A neural interface upgrade that boosts the pilot's skill at warp drive operation. 2-12% reduction in the capacitor need of warp drive.
	AC-6	Improves speed boosting velocity. 1-6% bonus to afterburner and microwarpdrive speed increase.
Science	AP-6	A neural Interface upgrade that boosts the pilots scanning skills. 2-10% reduction in maximum scan deviation.
	RR-6	A neural Interface upgrade that boosts the pilots research skills. 1-5% bonus to blueprint manufacturing time research.
Shield	SU-6	A neural Interface upgrade that reduces the shield upgrade module power needs. 1-6% reduction in power grid needs of modules requiring the Shield Upgrades skill.

Slot 7	Name	Effect
Armor	RA-7	A neural Interface upgrade that boosts the pilot's skill in the operation of Remote Armor Repairers. 1-6% reduced capacitor need for Remote Armor Repairer modules.
Electronics	SA-7	A neural interface upgrade that boosts the pilot's skill at operating targeting systems. 1-6% bonus to ships scan resolution.
Engineering	ES-7	A neural interface upgrade that boosts the pilot's skill with Capacitor emission systems. 1-6% reduction in capacitor need of modules requiring the Capacitor Emission Systems skill.
	EP-7	A neural interface upgrade that boosts the pilot's skill with energy pulse weapons. 1-6% reduction in the cycle time of modules requiring the Energy Pulse Weapons skill.
	EU-7	A neural interface upgrade that boosts the pilot's skill with energy grid upgrades. 1-6% reduction in CPU need of modules requiring the Energy Grid Upgrades skill.
Gunnery	MR-7	A Eifyr and Co. gunnery hardwiring designed to enhance turret tracking. 1-6% bonus to turret tracking speed.
	CB-7	A Inherent Implants gunnery hardwiring designed to enhance turret Capacitor management. 1-6% reduction in all turret capacitor need.
	TA-7	A Zainou gunnery hardwiring designed to enhance falloff range. 1-6% bonus to turret falloff.
Missile	MB-7	A Zainou missile hardwiring designed to enhance skill with missiles. 1-6% bonus to all missiles' maximum flight range.
	AM-7	A neural interface upgrade that boosts the pilot's skill with assault missiles. 1-6% bonus to assault missile damage.
	HM-7	A neural interface upgrade that boosts the pilot's skill with heavy missiles. 1-6% bonus to heavy missile damage.
	MP-7	A Zainou missile hardwiring designed to enhance skill with missiles. 1-6% bonus to all missiles' maximum velocity.
Navigation	EM-7	A Eifyr and Co hardwiring designed to enhance pilot Manuvering skill. 1-6% bonus to ship agility.
	Zor's	A neural Interface upgrade that boost the pilots skill in a specific area. This Navigation Link was created for the ruthless pirate commander, referred to as 'Zor'. 10% bonus to afterburner duration.
Science	AQ-7	A neural Interface upgrade that boosts the pilots scanning skills. 2-10% reduction in probe scanning time.
	MY-7	A neural Interface upgrade that boosts the pilots research skills. 1-5% bonus to material efficiency research speed.
Shield	SM-7	Improved skill at regulating shield capacity. 1-6% bonus to shield capacity.

Slot 8	Name	Effect
Armor	MC-8	A neural Interface upgrade that boosts the pilot's skill at maintaining the mechanical components and structural integrity of a spaceship. 1-6% bonus to hull hp.
Electronics	LT-8	A neural interface upgrade that boosts the pilot's skill at long range targeting. 1-6% bonus to max targeting range.
	PJ-8	A neural interface upgrade that boosts the pilot's skill at propulsion jamming. 1-6% reduction in capacitor need for modules requiring Propulsion Jamming skill.
Engineering	EM-8	A neural interface upgrade that boosts the pilot's skill at Capacitor management. 1-6% bonus to ships capacitor capacity.
Gunnery	MP-8	A Eifyr and Co. gunnery hardwiring designed to enhance skill with medium projectile turrets. 1-6% bonus to medium projectile turret damage.
	ME-8	A Inherent Implants gunnery hardwiring designed to enhance skill with medium energy turrets. 1-6% bonus to medium energy turret damage.
	MH-8	A Zainou gunnery hardwiring designed to enhance skill with medium hybrid turrets. 1-6% bonus to medium hybrid turret damage.
Industry	GH-8	A neural Interface upgrade that boosts the pilot's skill at gas harvesting. 1-5% reduction to gas cloud harvester cycle time.
	BX-8	A neural Interface upgrade that boosts the pilots manufacturing skills. 1-4% reduction in manufacturing time.
	RX-8	A neural Interface upgrade that boosts the pilots manufacturing skills. 1-4% reduction in reprocessing waste.
Missile	GP-8	A Zainou missile hardwiring designed to enhance skill with missiles. 1-6% reduced factor of signature radius for light, heavy and cruise missile explosions.
	DM-8	A neural interface upgrade that boosts the pilot's skill with defender missiles. 1-6% bonus to the velocity of defender missiles.
Navigation	FC-8	Improved control over afterburner energy consumption. 1-6% reduction in afterburner capacitor needs.
Science	BY-8	A neural Interface upgrade that boost the pilot's skill at handling boosters. 5-10% bonus to attribute booster duration.
	AR-8	A neural Interface upgrade that boosts the pilots scanning skills. 2-10% stronger scanning strength with scan probes.
	SC-8	A neural Interface upgrade that boosts the pilots research skills. 1-5% bonus to blueprint copying speed.
Shield	SE-8	A neural Interface upgrade that reduces the capacitor need for shield emission system modules such as Remote Shield Booster array. 1-6% reduction in capacitor need of modules requiring the Shield Emission Systems skill.

Slot 9	Name	Effect
Armor	RP-9	A neural Interface upgrade for analyzing and repairing starship damage. 1-6% bonus to repair system repair amount.
Electronics	EW-9	A neural interface upgrade that boosts the pilot's skill at electronic warfare. 1-6% reduction in ECM and ECM Burst module capacitor need.
	SL-9	A neural interface upgrade that boosts the pilot's skill at sensor linking. 1-6% reduction in capacitor need of modules requiring the Sensor Linking skill.
	TG-9	A neural interface upgrade that boosts the pilot's skill at target painting. 1-6% reduction in capacitor need of modules requiring the Target Painting skill.
	WD-9	A neural interface upgrade that boosts the pilot's skill at weapon disruption. 1-6% reduction in capacitor need of modules requiring the Weapon Disruption skill.
Gunnery	SS-9	A Eifyr and Co. gunnery hardwiring designed to enhance skill with all turrets. 1-6% bonus to all turret damages.
	RF-9	A Inherent Implants gunnery hardwiring designed to enhance turret rate of fire. 1-6% bonus to all turret rate of fire.
	ST-9	A Zainou gunnery hardwiring designed to enhance optimal range. 1-6% bonus to turret optimal range.
Missile	TN-9	A Zainou missile hardwiring designed to enhance skill with missiles. 1-6% decrease in factor of target's velocity for all missiles.
	LM-9	A neural interface upgrade that boosts the pilot's skill with light missiles. 1-6% bonus to damage of light missiles.
	RD-9	A neural interface upgrade that boosts the pilot's skill with rockets. 1-6% bonus to the damage of rockets.
Navigation	HS-9	Improves the performance of micro warpdrives. 1-6% reduction in capacitor need of modules requiring High Speed Maneuvering.
Science	NC-9	A neural Interface upgrade that boost the pilot's skill at handling boosters. 3-5% bonus reduction to side effects.
	SV-9	A neural Interface upgrade that boosts the pilots exploration skills. 5% increase in chance of salvage retrieval.
	AC-9	A neural Interface upgrade that boosts the pilots exploration skills. +5 Virus Coherence when accessing archaeology containers.
	HC-9	A neural Interface upgrade that boosts the pilots exploration skills. +5 Virus Coherence when accessing hacking containers.
Shield	SP-9	A neural Interface upgrade that boosts the recharge rate of the shields of the pilots ship. 1-6% boost to shield recharge rate.

Slot 10	Name	Effect
Armor	HG-10	A neural Interface upgrade that boosts the pilot's skill at maintaining his ship's midlevel defenses. 1-6% bonus to armor hit points.
Gunnery	LP-10	A Eifyr and Co. gunnery hardwiring designed to enhance skill with large projectile turrets. 1-6% bonus to large projectile turret damage.
	LE-10	A Inherent Implants gunnery hardwiring designed to enhance skill with large energy turrets. 1-6% bonus to large energy turret damage.
	LH-10	A Zainou gunnery hardwiring designed to enhance skill with large hybrid turrets. 1-6% bonus to large hybrid turret damage.
	WU-10	A neural Interface upgrade that lowers turret CPU needs. 1-6% reduction in the CPU required by turrets.

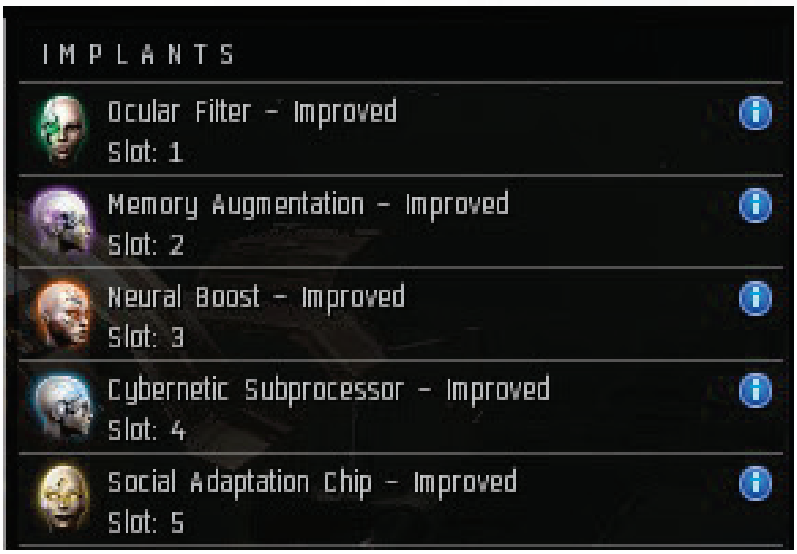
Slot 10	Name	Effect
Industry	MX-10	A neural Interface upgrade that boosts the pilot's skill at mining. 1-5% bonus to mining yield.
	MU-10	A neural Interface upgrade that boosts the pilot's skill at mining. 1-5% reduction in CPU penalty of mining upgrade modules.
	IH-10	A neural Interface upgrade that boosts the pilot's skill at mining ice. 1-5% decrease in ice harvester cycle time.
Leadership	Warfare Mindlink	This advanced interface link drastically improves a commander's Warfare ability. 25% increase to the command bonus of Warfare Link modules. Replaces Warfare skill bonus with fixed 15% bonus.
Missile	RL-10	A Zainou missile hardwiring designed to enhance skill with missiles. 1-6% bonus to all missile launcher rate of fire.
	FR-10	A neural interface upgrade that boosts the pilot's skill with auto-target missiles. 1-6% bonus to explosion radius of auto-target missiles.
Science	NR-10	A neural Interface upgrade that boost the pilot's skill at handling boosters. 3-5% less chance of side effects when using boosters.
	EY-10	A neural Interface upgrade that boosts the pilot's skill at environmental analysis. 5% reduction in cycle time of salvage, hacking and archaeology modules.

Attribute Enhancing Implants

Attribute enhancing implants are very important because they boost your skill learning speed significantly by increasing a basic attribute.

There is one implant for each attribute, and they can boost that attribute from one to five points.

The higher the bonus, the higher your cybernetics skill must be in order to use the implant.

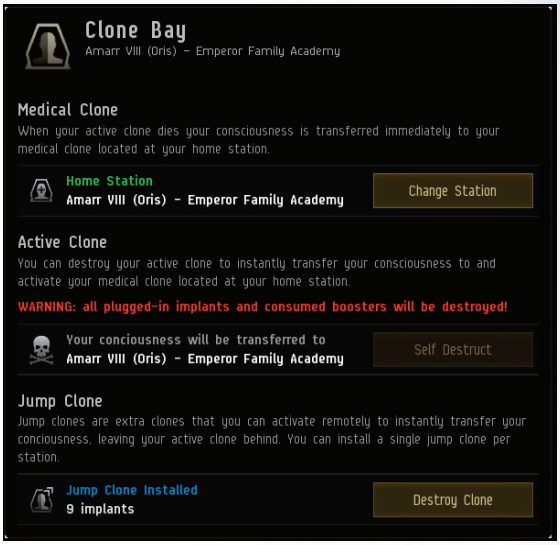


Starting out, acquiring a full set of +1 or +2 implants (a set means having all five of the implants) is very helpful. Keep in mind that when upgrading an implant by putting a new one in, any implant that is already in that slot will be destroyed. Implants are also destroyed when your pod is destroyed.

Effect on the attribute	Perception Slot 1	Memory Slot 2	Willpower Slot 3	Intelligence Slot 4	Charisma Slot 5	Skill Requirements
+1	Limited Ocular Filter	Limited Memory Augmentation	Limited Neural Boost	Limited Cybernetic Subprocessor	Limited Social Adaptation Chip	Science lvl 3 Cybernetics lvl 1
+2	Limited Ocular Filter - Beta	Limited Memory Augmentation - Beta	Limited Neural Boost - Beta	Limited Cybernetic Subprocessor - Beta	Limited Social Adaptation Chip - Beta	Science lvl 3 Cybernetics lvl 1
+3	Ocular Filter - Basic	Memory Augmentation - Basic	Neural Boost - Basic	Cybernetic Subprocessor - Basic	Social Adaptation Chip - Basic	Science lvl 3 Cybernetics lvl 1
+4	Ocular Filter - Standard	Memory Augmentation - Standard	Neural Boost - Standard	Cybernetic Subprocessor - Standard	Social Adaptation Chip - Standard	Science lvl 3 Cybernetics lvl 4
+5	Ocular Filter - Improved	Memory Augmentation - Improved	Neural Boost - Improved	Cybernetic Subprocessor - Improved	Social Adaptation Chip - Improved	Science lvl 3 Cybernetics lvl 5

Medical Clones

If your escape pod is destroyed (take it easy, it usually does not happen in high-sec space unless you are at war) you will lose all of your implants and boosters!



The default clone that you are issued after death is free and sufficient to protect your skills on death. You no longer have the option of purchasing higher clone grades.

The only exception is: If you lose your tech 3 ship, you will lose a single level of one (random) racial subsystems skill.

For example, you are flying the Amarr Legion ship and your subsystems skills are all at level 3. You are attacked and lose the ship, the system selects one random subsystems skill and brings it down to level 2. Please note that you do not lose skills if you eject from a tech 3 ship

Medical clones can only be set to current station or school headquarters. The fee for changing your home station has been raised to 100.000 ISK (from 5.600 ISK).

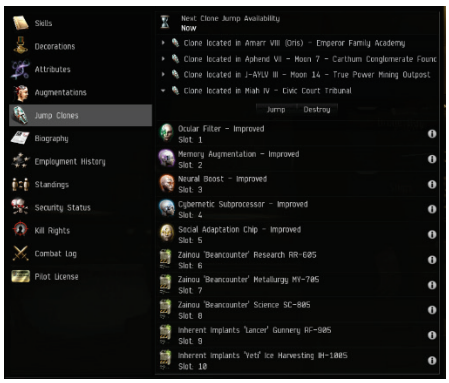
Jump Clone Service

Since you might need different sets of hardwiring implants for various duties (research and industry, agent missions, PvP) you might need multiple clones with different implants. In some cases, you might want to quickly jump between your home bases in different parts of space without bringing anything with you.

The solution for quick travel and for being able to use different sets of implants for different jobs is the Jump Clone Service. The Infomorph Psychology skill determines how many jump clones a character can have in addition to their medical clone. Jump Clones can be named for easier jump clone management.

Clone jumping requires the Jump Clone Service and does not have any effect on your medical clone. This allows you to have different clones for:

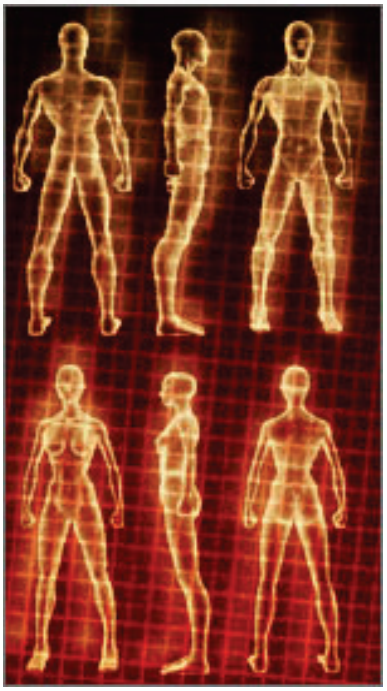
- Researching
- Refining
- Mining
- Agent running
- PvP
- Leadership duties



Go to the Jump Clones section of your Character Sheet, then choose where you want to jump. Expanding the location of a particular clone shows you the implants plugged-in.

Below the list of available jump clones, it displays when you last clone jumped and, if that was within 24 hours, how long until you can jump again.

You can switch jump clones once every 24 hours although there are rules:



- You need a standing of 8.0 with a particular corporation to create jump clones through them. The station must have a medical bay as well. In Nullsec space, if the station or outpost is owned by a player alliance, then your corporation must have proper standing to create jump clones.
- You can only switch between clones once every 24 hours. The **Infomorph Synchronizing** reduces minimum time between clone jumps by 1 hour per level.
- You can only have one jump clone waiting for you in one station, outpost, or ship. However, if you are at the same place as your clone, you can jump into your other 'body'.
- All implants and equipment stays at the location you jumped from.
- You must be in a capsule and you must put your skill training on hold to be able to jump. An active session change timer also prevents the jump.

Ship Insurance

The third 'golden rule' of EVE Online: Always insure your ship!

There are many opportunities to lose your cherished treasures due to carelessness, or to other players, or maybe to NPCs. It is always difficult to see your hard-earned ship vanishing in an explosion. This feeling is incomparable, and it can ruin your mood entirely. What can you do to ease the pain?

Insure your ship! Use the Insurance service on stations whenever it is possible. Always choose the most expensive option, because that is the profitable choice. **Do not forget that insurance only covers the ship. The equipment, rigs and cargo are not included.**

Ship insurance is visible to the ship's owner in the general show info window. It is **very important** to note that the insurance of faction and Tech II ships is NOT in proportion to the market prices of these ships, so if it is possible, try not to lose them. Also, the insurance will need to be repurchased on a ship if it expires (insurance lasts for 12 weeks), if the ship is repackaged.

Be aware! Insurance is no longer paid out for players who are killed by CONCORD.

If the ship is insured to your corporation, insurance will not be terminated when contracted or traded to a corp mate. If you insure the ship and it is destroyed personally (and that includes via 'self-destruction'), then the money is paid to you. If the ship is insured to the corporation (a corp hangar is required for this), the insurance money is due only if a corp member loses that ship.

It is not worth making money from insurance. Usually the total cost of the ship and the insurance is higher than the market price, so don't count on making any profit. On the list of insurance options available, the 'cost' is what you pay for the coverage, while the 'payout value' is what you will receive should you lose your ship.

Item Levels

Now we come to evaluating equipment so you can pick what will be best for your needs. A weapon may do more damage, may have better tracking speed, or may need less energy. Others may hold more ammunition than another can. Checking for this kind of information, especially in the case of 10 different types of cannon, can be very complicated. It is easy to recognize Tech II equipment visually with its small yellow triangle and the roman numeral II in the upper left corner, but what about the dozens of pieces of 'named' equipment? It can be difficult, especially for a beginner.

Fortunately the developers thought about it, and introduced a classification system for modules. The Meta Group and Meta Level of a module help you determine which module is the better in a given group when comparing things from that same group. Right click on the module and choose Show Info or click on the small blue letter 'i' beside its name. Then choose the Attributes tab to view this information.

You can see the meta-level related naming too:

- **Meta Level 0:** No pre-fix.
- **Meta Level 1:** Upgraded
- **Meta Level 2:** Limited
- **Meta Level 3:** Experimental
- **Meta Level 4:** Prototype
- **Meta Level 5:** No pre-fix but have the mark (and an "II" at the end of the name).

Meta Group and Meta Level

Meta Groups are actually a kind of arrangement of the equipment. This lets you know how the module can be acquired. Tech I, Tech II modules, and Tech III ships can be manufactured.

Manufactured items can be bought either on the market or via contracts. Anything not manufactured can either be found in-game through various forms of looting, or bought via contract from another pilot who has found the item in-game.

These are the Meta Groups:

- **Civilian:** The lowest end of the spectrum. Minimal to no skills are needed, but they are also mostly ineffective. Beyond your initial days in EVE, their use is strongly NOT ADVISED.

- **Tech 1 (T1):** Probably the most used type of equipment. Everything falls into this category from the basic models to the named variations, from Meta Level 0-4. The basic model is Meta 0, while Meta 4 is the best, named variation.

- **Storyline:** COSMOS Agent missions offer these modules, or offer their blueprints to manufacture them. Usually better than Meta 4 equipment. On rare occasions, some are better than Tech II. Since they are so rare, this often makes them very expensive. Marked as Meta 6.

TYPE NAME	META GROUP
Large Shield Booster I	Tech I
Large Converse I Deflection Catalyzer	Tech I
Large Neutron Saturation Injector I	Tech I
Large Clarity Ward Booster I	Tech I
Large CS-L Emergency Shield Overload I	Tech I
Large Shield Booster II	Tech II
Large 'Outlaw' Shield Booster	Storyline
Domination Large Shield Booster	Faction
Republic Fleet Large Shield Booster	Faction
Caldari Navy Large Shield Booster	Faction
Dread Guristas Large Shield Booster	Faction
Gist C-Type Large Shield Booster	Deadspace
Kaikka's Modified Large Shield Booster	Officer
Pith C-Type Large Shield Booster	Deadspace
Gist B-Type Large Shield Booster	Deadspace
Hakim's Modified Large Shield Booster	Officer
Pith B-Type Large Shield Booster	Deadspace
Thon's Modified Large Shield Booster	Officer
Gist A-Type Large Shield Booster	Deadspace
Pith A-Type Large Shield Booster	Deadspace
Vepas' Modified Large Shield Booster	Officer
Estamel's Modified Large Shield Booster	Officer
Gist X-Type Large Shield Booster	Deadspace
Pith X-Type Large Shield Booster	Deadspace
Tobias' Modified Large Shield Booster	Officer

- **Tech 2 (T2):** The most improved type of equipment in a group. Can be manufactured by players (as in it is relatively easy to acquire these modules). However, in exchange for higher efficiency, more skills are required than with lesser modules. Marked as Meta 5.

- **Faction:** Equipment modified by certain factions that can bought by redeeming Loyalty Points from running missions at a Loyalty Point store. Other 'currency' that the Loyalty Point store may require are dog tags from NPCs and ISK. Their efficiency is better than Tech II, and the skill requirement is less. However, this makes their price much higher. The Meta Levels of Faction items are 8 and 9.

- **Deadspace:** Complexes found throughout the game range in difficulty level from 1 (easiest) to 10 (difficult). The NPCs that 'live' in these complexes may drop Deadspace items from time to time. The value of this equipment varies from a couple of millions up to billions. Their Meta Level is between 10 and 14.

- **Officer:** This is the best type of equipment. The Meta Level of these items ranges from 10-14, and in many cases is the same as or is similar to a Deadspace item. Sometimes the Deadspace NPC is missing a certain piece of equipment that only the officer may have on his ship. Officer level modules can be worth billions of ISK. For example, the Chelm's Modified Cap Recharger can be about 6-8 billion ISK. Officers are very rare, and they are not guaranteed to always drop modules. Some pilots may never run across an officer.

To summarize, the higher Meta Level an item has, the better it is, and, except Tech II, more expensive as well. The above refers to every module that has more than one type except Civilian.

An Officer fitted marauder can be a nice idea, and effective as well. But, don't forget: you may lose your internet connection, you can be the target of a suicide gank. The results would be "devastating" (in every means): You will be in your pod, without any money.

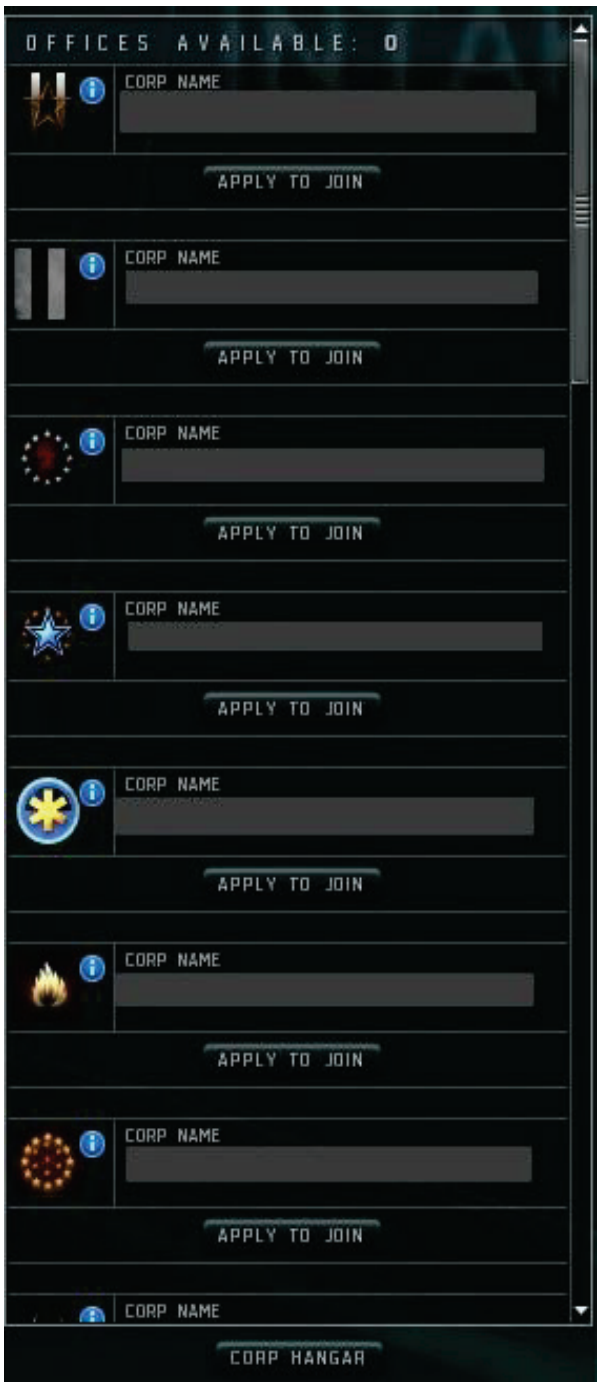
Don't forget the main rule of the ship fitting: Never fly a ship that you can't afford to lose!

"The Firm" – Corporations

While other games have clans, guilds, or teams, EVE Online has corporations. Unlike other games, all characters must belong to a corporation. While you may be a one-man corp, my advice is to find an established outfit with many players that match your playing style. This makes survival a lot easier as the 'older' corp members help you either financially or even just with advice.

Joining a corporation

Why should you join a corporation? Why are one-man corps not the best solution? It is mostly because of the amount of teamwork required to accomplish many things in EVE. Also, there is the basic fun of social interaction: corp chat, common hangars, POSes (Player-Owned Structures) usage and shared experience.



To join a corporation you can look for the Office or HQ of a particular group. To do this, click on a pilot, then select the name of the corporation. You can also open People & Places from the NeoCom and search for the corporation name. Do not forget to filter the drop down menu by choosing 'Corporation'. Consult the Offices Menu on the Corp Info Window, and then pay a visit to one of the offices or the HQ.

After docking at the Station, switch to the Offices Tab on the right, find the corporation in the list and click on the Apply to Join button. On the application, introduce yourself briefly – who you are and why you want to join.

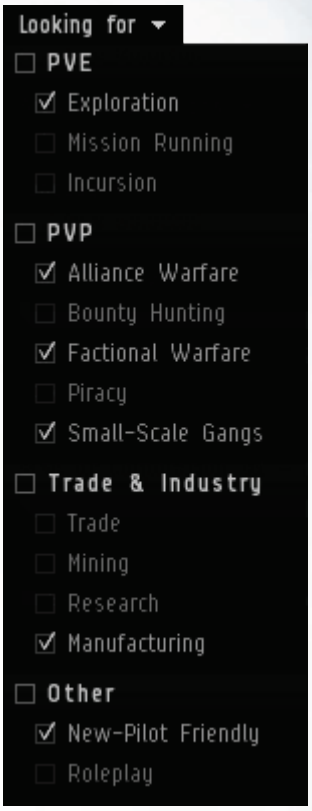
You can also join by clicking Apply to Join on the Attributes tab on the corporation information window.

The application rules of the companies and whether they are recruiting can be found on the EVE forums.

Don't forget that every NPC corp (except Militia) has an 11% tax rate! It may be cheaper to live in a player-owned corporation.

Everybody Needs Somebody

If you are looking to find a corp for the first time, or you are tired of the constant fleet battles and Nullsec operation and desire a move to Empire for some veldspar mining, then here you go! You can now find a corp to your liking. The 'Other Adverts' tab is your new friend.



Here you can start setting up your search by selecting the region, whether you care about alliances or not, how many members the corp should have and if you want to limit the search by skillpoints.

Now you will get all appropriate adverts pertaining to that region. If you feel there are too many, you can start filtering by using the filters page. Here you can further define what you are looking for so that only advertisements that fit your criteria are shown. When you look at the list, you can see various pieces of basic information. You see timestamps for when the advertisement was created, when it will expire, the name of the corp, what alliance it is in (if any) and the location of the office. If you see something that catches your eye, you can double-click on the advert which will bring up more comprehensive information, showing everything the corp is looking for and its personalized, 1000-character 'sales pitch'.

Creating a corporation

You can create a new corporation by clicking on the Corporation NeoCom tool, then selecting Create New Corporation and filling in the data sheet. You'll need to do the following:

- Design the logo
- Give your corp a name
- Give your corp a ticker
- Choose the tax rate
- Select the corp's home page, if there is one available
- Give it a short description
- Click the Submit button

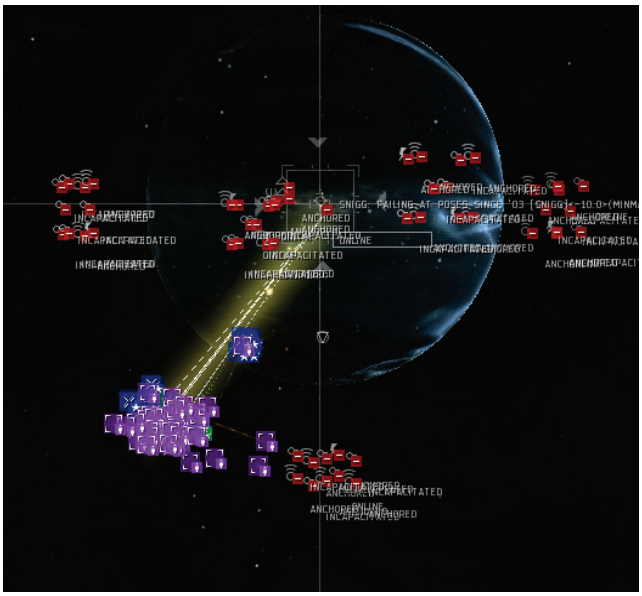
The skill requirement needed to start a corporation is not much. You only need to have Corporation Management trained, which allows you to have an additional 10 members in your corp per level trained. Create your corp's base by clicking on Move HQ Here at any station to make that your chief office of operations. In addition, offices can be rented on stations as well, with the help of the Rent Office button, which is useful for recruiting. New members can apply at the HQ office if they like.

Pay attention to the hangar rent because the more popular a place is, the more expensive it is. Examples would be trade hubs such as Jita or Amarr, or other popular agent hubs. If you find the fee too high, then look for another station in the system or look around within one to two jumps. It is worth looking around to only pay 10,000 ISK per month instead of 40,000,000! Usually 1.5m ISK is required to start a corporation.

Leaving a corporation

As a member of a corporation you can now quit a corporation instantly without waiting the 24 hours after dropping roles. You can also quit the corporation by joining another one directly. When you quit your corp without joining another, you will automatically become a member of an NPC corporation matching the faction of your race.

Roles and titles



The cornerstones of a corporation are its officers: those who hold roles and titles that entrust the future of the corporation in their duties. Trust can be granted on many levels. It is best to be cautious when granting roles as there are several examples in EVE history where misplaced trust led to betrayal causing serious damage to the corporation members. When a new member joins, set their roles and titles accordingly with the most basic of access.

Operating a corp is simple: setup the roles of the given titles so that when a new member joins, granting him a title also grants him the pre-assigned rights as well. It might seem simpler to just assign the roles right away, but after the tenth member setup, you'll learn to streamline this process. Of course, the roles can always be assigned individually as well. It's up to you.

The roles given to the members are essential for the corp's operation, and setting them accordingly leads to efficient day-to-day business. There are three kinds of roles: Normal, Divisional and Grantable.

- **Normal** roles can be given to any member,
- While **Grantable** roles can be forwarded to someone else, i.e. the given corp member can assign his role to another member.
- **Divisional** roles give you access to the corporate wallet (which includes buying stuff) as well as seeing the balance of the division when it is selected.

The following roles can be assigned:

ACCOUNTANT

The Accountant overlooks the corporation's financial affairs, sees to the bills, and is able to pay them provided the corp has the necessary amount in the corp wallet. The accountant also oversees corporation ownership through the assignment of shares: who owns them and what amount. He is free to dispose of the corp's property, selling it directly from or buying directly into a corp hangar. Purchases made for the corporation (from the corp's account) appear in the Delivery area at the place of purchase, and can only be moved out of here by the Accountants. Items cannot be moved into the Delivery area manually as this is only for picking up purchases.

ACCOUNTING (DIVISIONAL)

This gives access to the corp wallet to manage the money in it, lets you pay the bills and view the balance, journal, transaction logs and shares.

AUDITOR

An auditor can oversee the history of the members as they join or quit the corporation.

CONFIG EQUIPMENT

Members with this role can anchor, unanchor, rename and configure containers for the corporation.

CONFIG STARBASE EQUIPMENT

Members with this role can anchor, unanchor, rename and configure control towers and POS modules for the corporation and put them online or offline as needed.

DIRECTOR

Directors have the same roles as the CEO. They can hire and fire members and they can grant any role (except Director). It can be very useful, especially if the corporation is multinational and members located in different time zones must be coordinated. These roles are essential for the corp to run smoothly, since the CEO may not always be available. Note that the Director has access to every Grantable and Normal role! This means the Director has full powers to do everything. (Please note: Directors can't join to an alliance!)

FACTORY MANAGER

Members with this role can create manufacturing and science jobs (PE research, ME research, invention, etc.) at places rented by the corporation. Such jobs use materials from corp hangars. They also have the ability to deliver completed jobs and can oversee the current jobs in process.

JUNIOR ACCOUNTANT

The 'light' version of the Accountant. He can oversee the same things but cannot modify shares, and does not have access to the Delivery area. The Divisional version can also view (but not pay) bills, and can view the wallet's balance and shares.

PERSONNEL MANAGER

He is your friendly HR staff member, and can hire or fire other corporation members.

RENT FACTORY

Members with this role can rent and unrent production facilities for the corporation.

RENT OFFICE

Can rent and unrent offices for the corporation.

RENT RESEARCH FACILITY

Members with this role can rent and unrent research (science) facilities for the corporation.

SECURITY OFFICER

He is responsible for setting up access to the corporation's hangars, and also has access to the Delivery area as well. The Security Officer can place items in members' personal hangars (but not take anything out). Note that no one but the owner of a personal hangar can take anything out of it.

STARBASE CARETAKER

The Starbase Caretaker is the junior equivalent of the Config Starbase role. Members with this role can oversee the otherwise hidden processes of a POS, such as information on the Processing Management tab, the state of fuel, and amount of ammunition in turrets, but he cannot interact with the POS directly except to setup the flow of resources as changes on the Production tab.

STARBASE DEFENSE OPERATOR

Members with this role and with the Starbase Defence Management skill can operate the weapons and EW modules (Electronic Warfare fittings such as webbers) attached to the POS.

STARBASE FUEL TECHNICIAN

The fuel transporter can fill the POS with fuel and check its state, but is not able to online or offline anything.

STATION MANAGER

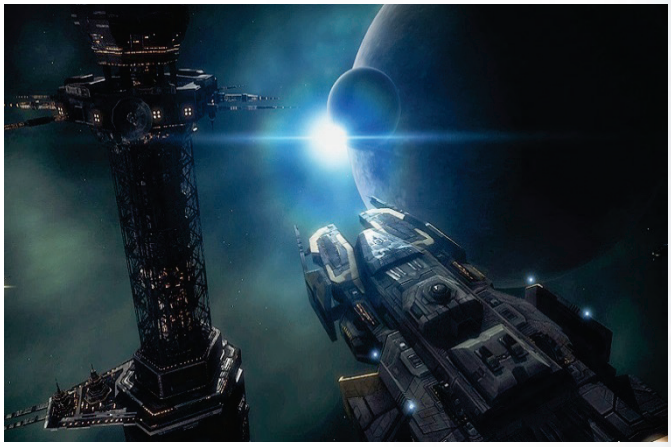
As the title says, he is responsible for everything on the station owned by the corporation. This includes the docking and manufacturing rights, and every other function available on the station. He can determine the fees of these services and set the defensive systems as well.

TRADER

Can view transaction logs but requires divisional access to do any actual trading.

Setting The Station And Hangar Roles

As you can guess, items in corp hangars are very important for a corporation. For this reason hangar access is also important. What can you have in a hangar? Anything including ships, ship modules, POS modules, control towers, raw materials, fuel, blueprints, etc. Moreover, shared access to blueprints is one of the key benefits of player-run corporations. Other shared items are just as important for newer members.



The role management system allows hangar access to corp members at the corp HQ, other offices, POSes or mobile corp hangars on certain spaceships. You can assign hangar access roles for the following states:

- **Based at**: the given station with corp offices.
- **CorpHQ:** the central hangar of the corporation (it is strongly advised to give access to the most trusted members only).
- **Other:** any other location that does not fall under the Base or the HQ category.

Members with the assigned roles of Security Officer, Accountant or Factory Manager are able to do their jobs without the 'Based at' role assignment.

The location-related roles make it possible for members with the proper access to manage inventory in various hangars and storage. However, it is important to know that in order to access containers that are within hangars (Giant Secure Containers, for instance) the Container Can Take role must be assigned to the member.

The Corporate Hangar Array anchored at a POS is actually a hangar in space. Therefore, access to it falls under the 'Roles at Other' category. Only members granted this role will have access to its contents.

Shares

Every corporation in the EVE universe functions as a corp owned by its shareholders. Each corporation starts with 1000 shares at its foundation. This number can be increased by the vote of the shareholders.

What are these shares for?

- Give rights to vote to the shareholders.
- Dividends can be distributed among the shareholders.
- Majority in votes (50%+1) can be used to replace the CEO (replaceable role).
- Shareholders can send messages to corp members even if corp members blocked them (perhaps 'accidentally').

It is advised to give yourself, as the founder, the majority of shares to avoid others taking over your corporation. You can give or take shares to or from any player. The player does not have to be a member of a corp to own shares in it. You can check the list of shareholders and the issues of stock under the Corporation Wallet, Shares, Shareholders tab.

FITTING

CHAPTER 2

ATTACK OF THE DRONES

THE CAPACITOR

BASICS OF THE FITTING

EVE INDUSTRIAL BLACK BOOK

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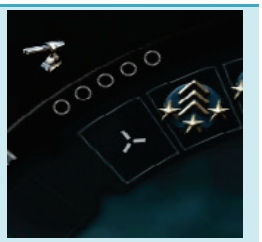
The Art Of Fitting

The art of fitting your ship is very important for your EVE career as it can be the difference between success and devastating failure. To be a pro, you must know your ship and its modules. Being able to sit in a ship doesn't mean that you can actually fly it. Flying a ship, being able to fit important modules on it, being able to use a proper fit, and using a ship efficiently, all have very different skill requirements. Years of experience and training can be the difference between an unknown pilot and a champion. However, experience and skills alone will not make you efficient. You will also need your ship, rigs, modules and other equipment as well. You no longer need skills to fit modules and rigs. You will not, however, be able to online modules you don't have skills for.

Slots

Every ship (with the exception of shuttles,) has various slots for modules. These slots determine what you can fit on your ship, and in what quantity. They are divided into three main groups: High, Medium (sometimes referred to as 'Mid') and Low slots.

Slots			
	High Slot	High slots are mostly used for weapons. Remote repair systems, energy (capacitor) neutralizers, energy transfers, energy draining modules, salvagers, tractor beams, some drone-related modules and probe launchers are also high slot modules.	
	Medium Slot	Most shield-related modules use mid slots, as well as afterburners, microwarpdrives, and modules that can modify various attributes of your weapons.	
	Low Slot	Armor-related modules, cargo extenders, and damage increasing modules use low slots. Some capacitor-related modules use low slots as well.	
	Rig Slot	Rigs are permanent ship modifications that provide bonuses to various ship functions, and work in much the same manner as hardwirings do for players: They can be inserted in specially designated slots, and will be destroyed if they are removed or the ship repackaged.	

Hardpoints

Most warships need weapons, in the form of either turrets or launchers. Since these weapons need a physical spot on the outer hull of the ship, in addition to being fit into a high slot, they also need a hardpoint. The amount of hardpoints a ship has can determine how many weapons you can fit on your ship.

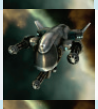
Hardpoint		Usable	
	Turret Hardpoint	Every turret uses a hardpoint when you fit it on the ship. Free (empty) hardpoints are indicated by empty circles next to the turret icon on the Fitting screen, and if there are no further hardpoints left, you cannot put any new turrets on the ship even if you still have free high slots.	
	Launcher Hardpoint	Every missile launcher needs a free launcher hardpoint to fit it on the ship. Launcher hardpoints are similar to turret hardpoints, but they are used by missile launchers of various kinds. On the Fitting screen, these are represented by empty circles next to the launcher icon. It is common to have more high slots than hardpoints.	

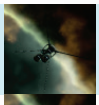
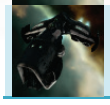
Bay Types

Bay Type		Usable
	Cargo Bay	Every ship has a cargo bay in which you can store and transport various items (raw materials, ammunition, modules, re-packaged ships, and so on).
	Fuel Bay	Fuel bays are an addition to the normal 'cargo bays' on ships. It's a 'gas tank', not to be confused with a bay for storing actual minable gas. Only use with 'Ice Products'.
	Fleet Hangar	Same as the Cargo Bay, but it can be shares with corp members.
	Ship Maint. Bay	The ship maintenance bay is very useful for moving a few ships out to a new location, either in space or a station, and also has the benefit of allowing your corp or fleet members to either refit in space or arrive in fast ships and switch to others.
	Ore Hold	A dedicated bay for raw ores. (Venture, Orca, Rorqual, Mining Barges, Exhumers)
	Drone Bay	In the EVE universe, some ships have a special bay designed to hold drones.

While you can put drones into the cargo hold as well, launching them is only possible from the drone bay. Assuming your ship's drone bay allows space for them, a maximum of five drones can be controlled at the same time (except for carriers and supercarriers). More can be stored in the drone bay as backups.

The drones currently available are listed by size:

	Type	Size
	Light Scout Drones	5m³
	Medium Scout Drones	10m³
	Heavy Attack Drones	25m³

	Type	Size
	Sentry Drones	25m³
	Fighters	5000m³
	Fighter Bombers	5000m³

Let's Be Fit: Save What You Can!

It is useful to save the fittings you, or others, have designed so that you can load and use them again later. The advantage of doing this is that you do not have to put the modules together over and over again, and the fitting setups can be shared with others anytime, either to ask their opinion or to help other players fit a similar ship. To save a fitting, open the Fitting tool on the NeoCom or from station services. Here you can:

- Select your design to be for personal or corporation use.
- Use the Fit button to put the modules on your ship with one click if the proper ship is active and you have all the required modules in your hangar.
- Use the Save button to save your current fitting design. It will be added to the list of your personal or corporate setups based on your choice above.
- Export or import your fitting setups.
- Delete a given fitting setup from your list.

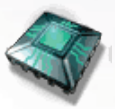
You can share your designs in the in-game chat window. Just drag and drop the chosen setup from the list into the chat window. More specifically, left click on it, keep the button depressed, drag the selection to the window, then release the left button.

The Stacking Penalty

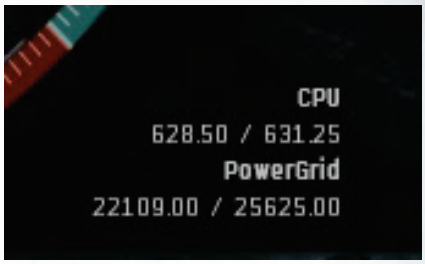
"Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized." The stacking penalty prevents you from fitting lots of damage enhancing modules to your low slots. Every module affecting the same attribute receives a penalty, as showing below:

Efficiency	Damage / Range / Tracking Modules	Rate Of Fire Modules	Weapon Disruption Modules
One Module	100%	100%	100%
Two Modules	95,44%	77,58%	43,45%
Three Modules	67,99%	46,55%	16,13%
Four Modules	35,57%	22,41%	5,71%

CPU & PowerGrid (PG)



Ship equipment needs both CPU and powergrid capacity. If you don't have enough, you can still add modules to your ship but you cannot put them online. There is nearly no point to doing this, since you cannot benefit from offline equipment. It is possible, however, to still fly a ship with offline modules.



The CPU

The CPU describes the calculating and controlling capacity of the central computer on the ship, in theory anyway. You can increase it as follows:

Type	Name	Effect
Skill	CPU management	5% Bonus to ship CPU output per skill level.
Module	Co-Processor	Increases CPU output.
Implant	Zainou 'Gypsy' CPU management EE-6	Neural interface upgrades that boost the pilot's skill at CPU management.
Rig	Processor Overclocking Unit	This ship modification is designed to increase a ship's CPU. (Decreasing the shield recharge rate!)

If you are out of options, try to lower the CPU need of your modules. You can use modules with a higher Meta level (with the exception of Tech II modules), or try using one (or more) of the methods listed on the following table:

Type	Name	Effect
Skill	Electronics Upgrades	Skill at installing electronic upgrades, such as signal amplifiers, co-processors and backup sensor arrays. 5% reduction of CPU needs for all modules requiring Electronics Upgrades per skill level.
Skill	Energy Grid Upgrades	Skill at installing power upgrades e.g. capacitor battery and power diagnostic units. 5% reduction in CPU needs of modules requiring Energy Grid Upgrades per skill level.
Skill	Weapon Upgrades	Knowledge of gunnery computer systems, including the use of weapon upgrade modules. 5% reduction per skill level in the CPU needs of weapon turrets, launchers and smartbombs.
Skill	Mining Upgrades	Skill at using mining upgrades. 5% reduction per skill level in CPU penalty of mining upgrade modules.

Type	Name	Effect
Implant	Zainou 'Gnome' Launcher CPU Efficiency LE-6	1-6% reduction in the CPU need of missile launchers.
Implant	Zainou 'Gnome' Weapon Upgrades WU-10	A neural Interface upgrade that lowers turret CPU needs. 1-6% reduction in the CPU required by turrets.
Implant	Inherent Implants 'Highwall' Mining Upgrades MU-10	A neural Interface upgrade that boosts the pilot's skill at mining. 1-5% reduction in CPU penalty of mining upgrade modules.
Rig	Powergrid Subroutine Maximizer	This ship modification is designed to reduce a ship's CPU need for all power upgrade modules.
Rig	Algid Energy Administrations Unit	This ship modification is designed to decrease the CPU need of a ship's energy turrets at the expense of increased power grid need for them.
Rig	Algid Hybrid Administrations Unit	This ship modification is designed to decrease the CPU need of a ship's hybrid turrets at the expense of increased power grid need for hybrid weapons.

The PowerGrid

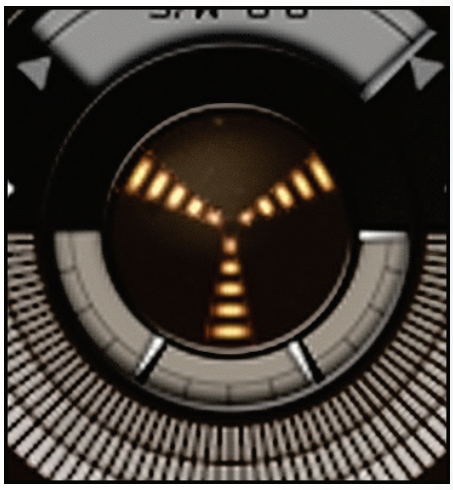
Powergrid is the capacity of the electronic systems of the ship (something like the circuit-breaker in your building). It determines how many things that are plugged into the ship can 'run'. You can increase it as follows:

Type	Name	Effect
Skill	Power Grid management	Basic understanding of spaceship energy grid systems. 5% Bonus to ship's powergrid output per skill level.
Module	Power Diagnostic System	Monitors and optimizes the power grid. Gives a slight boost to power core output and a minor increase in shield and capacitor recharge rate.
Module	Reactor Control Unit	Boosts power core output. (PG)
Module	Micro Auxiliary Power Core	Supplements the main Power core providing more power.
Implant	Inherent Implants 'Squire' Power Grid management EG-6	A neural interface upgrade that boosts the pilot's skill at Power Grid management. 1-6% bonus to the power grid output of your ship.
Rig	Ancillary Current Router	This ship modification is designed to increase a ship's powergrid capacity.

If you are out of options, try to decrease the PG requirements of the modules already fitted. You can use modules with a higher Meta level (with the exception of Tech II), or try using one (or more) of the methods listed on the following table:

Type	Name	Effect
Skill	Shield Upgrades	Skill at installing shield upgrades e.g. shield extenders and shield rechargers. 5% reduction in shield upgrade powergrid needs.
Skill	Advanced Weapon Upgrades	Reduces the powergrid needs of weapon turrets and launchers by 2% per skill level.
Implant	Zainou 'Gnome' Shield Upgrades SU-6	A neural Interface upgrade that reduces the shield upgrade module power needs. 1-6% reduction in power grid needs of modules requiring the Shield Upgrades skill.
Rig	Core Defense Charge Economizer	This ship modification is designed to reduce the power need of all shield upgrade modules at the expense of increased signature radius.

„The Flux Capacitor Requires 1.21 Gigawatts”



Every active module, your warp drive, shields, and even repair modules use energy from the capacitor. The power system of the ship is determined by three factors: the maximum level of the capacitor, its recharge time, and the energy consumption of the activated modules. If you increase the maximum level of capacity but leave the recharge time unchanged, the effective recharge rate increases as well. Naturally, reducing the recharge time also improves this rate. The capacitor does not regenerate evenly, the optimal recharge point is at about 30% of the capacitor level; i.e. at that point you get the most power for a given unit of time.

Capacitor Capacity

Type	Name	Effect
Skill	Capacitor Management	Skill at regulating your ship's overall Capacitor capacity. 5% bonus to capacitor capacity per skill level.
Module	Capacitor Battery	Increases capacitor storage. Provides defense against Energy Leech and Energy Neutralizer effects.
Rig	Semiconductor Memory Cell	This ship modification is designed to increase a ship's capacitor capacity.
Implant	Inherent Implants 'Squire' Capacitor Management EM-8	A neural interface upgrade that boosts the pilot's skill at Capacitor management. 1-6% bonus to ships capacitor capacity.

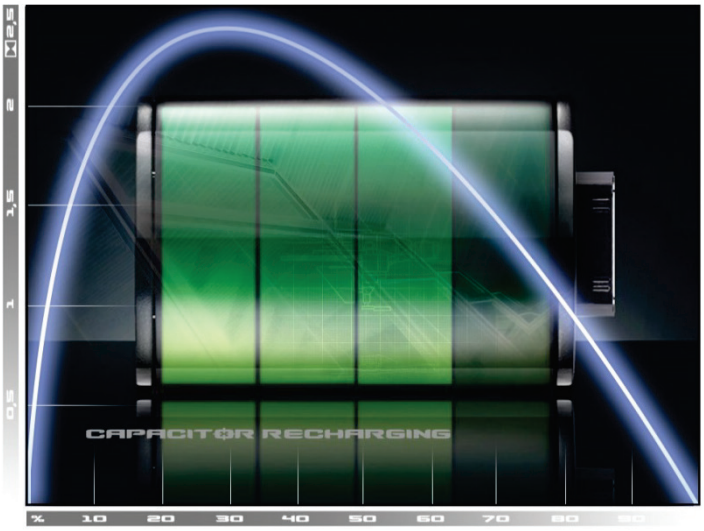
Capacitor Recharge Time

Type	Name	Effect
Skill	Capacitor Systems Operation	Skill at operating your ship's capacitor, including the use of capacitor boosters and other basic Capacitor modules. 5% reduction in capacitor recharge time per skill level.
Module	Cap Recharger	Increases the capacitor recharge rate.
Module	Capacitor Power Relay	Increases capacitor recharge rate at the expense of shield boosting.
Module	Capacitor Flux Coil	Increases capacitor recharge rate, but causes a reduction in maximum capacitor storage.
Module	Power Diagnostic System	Monitors and optimizes the power grid. Gives a slight boost to power core output and a minor increase in shield and capacitor recharge rate.
Rig	Capacitor Control Circuit	This ship modification is designed to increase a ship's capacitor recharge rate.
Implant	Inherent Implants 'Squire' Capacitor Systems Operation EO-6	A neural interface upgrade that boosts the pilot's skill at Capacitor systems operation. 1-6% reduction in capacitor recharge time.

The capacitor is stable if the energy consumption of the active modules is lower than or equal to the capacitor recharge rate of the ship. You can check it on the fitting window. If it says 'stable', everything is well. Even so, if the value is a lot more than 30% (shown by the circle) then you might want to consider fitting other, more useable equipment. If the capacitor is not stable, you can check how long it takes to entirely deplete by continuous use of all the modules fitted.

The recharge rate of the capacitor

The capacitor recharge rate is not even. This means that it does not regenerate by the same amount at 90% as it does at 30%.



The exact formula is: Maximum recharge rate = 2.4 x Maximum Capacitor Level / Capacitor Recharge Time

Remember that the recharge rate decrease dramatically once it falls below 25%. Therefore, (especially) in a fight, leave yourself a margin of safety and consider escaping if it appears that you will soon fall below this amount.

The Capacitor Booster

You can recharge the capacitor either partly or entirely in a single boost depending on the maximum cap amount and the module and charge being used. The required module is the Capacitor Booster and its charge is called a Cap Booster. Using one recharges the Capacitor instantly. In general, the Heavy Capacitor Booster is designed for battleships; the Medium is for cruisers; while the Small one is for frigates. The module goes in a medium slot and then is loaded with Cap Boosters. The more energy that a Cap Booster recharges, the larger the Capacitor Booster must be to handle it. For example, a Micro Capacitor Booster cannot be loaded with Cap Booster 800's! The module has a cycle time that you have to wait between boosts. Reducing this time is not possible, and is only effected by the Meta level of the module.

	Type		Capacity	Usable
	Heavy	**Battleship-sized capacitor boosters**	**128 m^3**	**25, 50, 75, 100, 150, 200, 400, 800**
	Medium	**Cruiser-sized capacitor boosters**	**32 m^3**	**25, 50, 75, 100, 150, 200, 400, 800**
	Small	**Frigate-sized capacitor boosters**	**12 m^3**	**25, 50, 75, 100, 50, 200**
	Micro	**Small capacitor boosters, for when powergrid and/or CPU are scarce**	**8 m^3**	**25, 50, 75, 100, 150**

The higher the energy level of a charge, the bigger capacitor boost is necessary, so a Micro Capacitor Booster cannot be loaded with Cap Booster 800. For an example, a Small Capacitor Booster I has a capacity of 12m^3 which will fit a Cap Booster 200, which has a volume of only 8m3.

	Name	Amount	Size
	Cap Booster 25	**25 GJ**	**1 m^3**
	Cap Booster 50	**50 GJ**	**2 m^3**
	Cap Booster 75	**75 GJ**	**3 m^3**
	Cap Booster 100	**100 GJ**	**4 m^3**
	Cap Booster 150	**150 GJ**	**6 m^3**
	Cap Booster 200	**200 GJ**	**8 m^3**
	Cap Booster 400	**400 GJ**	**16 m^3**
	Cap Booster 800	**800 GJ**	**32 m^3**

Tanking, an Overview

Tanking means to delay, or avoid, the destruction of your ship. There are three main methods to achieve this: the active tank, the passive tank, and the speed/signature tank. These solutions can be combined (perhaps with the exception of the combination of the shield and armor tank). When viewing the Fitting screen, you can see the characteristics of your ship while the bonuses of active modules can only be seen after you are in space and activate the given module.

The screen shows:

- Maximum hitpoints of the shield, its recharge time, and resistance against different damage types.
- Maximum hitpoints of the armor and its resistance against different damage types.
- Maximum hitpoints of the structure and its resistance against different damage types.
- The effective hitpoints of the ship: the theoretical, maximum damage endurance calculated from the above values and their resistances. This is the maximum amount of damage that the ship can take before it is destroyed.

Every tanking method has its advantages and disadvantages. There is no such thing as the 'best' form of tanking, only better or worse options for different situations. Two tanking types can be broken down into further sub-divisions:

- **Active Tank**
  - **Active Shield Tank**
  - **Armor Tank**
  - **Remote Tank**
- **Passive Tank**
  - **Passive Shield Tank**
  - **Buffer Tank**
- **Speed / Signature Tank**

Defences

Every ship has three major lines of defence in the EVE universe (from outside to inside):

- **Armor:** If your ship is hit this is where it first takes damage, and if the pilot does not have the Tactical Shield Manipulation skill, when it reaches 25% of capacity level some of the damage pierces and damages your armor as well.
- **Shield:** If your shield is lost, the armor is all that's left to keep you safe from the coldness of space.
- **Structure:** If both the shield and the armor are lost, the structure takes damage. If the hull is lost, the ship is destroyed.

When we talk about tanking, we do nothing else but increase, repair, or recharge the hitpoints or resistance of the different lines of defence. Most of the time, either shield or armor tank should be used, as a combination of the two just wastes slots and is not as effective as concentrating on only one of them. Hull tanking cannot be used in a combat situation, since hull repairing modules are very slow.

The following methods can be used to survive a battle:

1. Increase the maximum hitpoints of the shield (using a shield extender), or armor (with armor plate) or structure (a reinforced bulkhead) with modules, skills, and implants.
2. Regenerate the lost hitpoints with:

    - **Shield**: Shield booster
    - **Armor**: Armor repairer
    - **Structure**: Hull repairer

    Another way to regenerate the lost hitpoints is the remote versions of the above listed modules. The remote modules are activated on you from another ship; usually a support ship or a carrier helps you this way.
3. In time, the shield regenerates itself, but there are various modules specialized in recharging (shield recharger, shield power relays). Increasing the shield capacity level has the same effect, although the recharge time does not increase, but, instead, the amount being recharged increases (shield extenders).
4. Increasing the resistance of the shield, armor and structure is also important, as it reduces the damage and thus increases the effective HP of the ship.

Active Tanking

The point of the active tank is to repair the damage (in most cases during combat), with modules using the capacitor. Such modules include shield boosters and armor repairers. You can also add different types of resistance extenders. The significance with these modules is that although they do not increase the repaired level, they increase a ship's resistances against the different damage types, thus less damage has to be repaired. The important point to this method is the energy itself. How much cap does it takes to sustain the tank? If you have power, everything works smoothly, but if you run out of power, your tank stops working and your ship will die. An important consideration is to get your ship to have a stable capacitor with proper skills, modules and if necessary, even implants.

Most active tanking PvE (Player vs. Environment) fits use two active hardeners specific to the incoming damage type, and modules to restore lost hitpoints (shield boosters, armor repairers). It might also include some general hardeners (Invulnerability Field or EANM, for instance).

Active Shield Tank (AST)

The two main elements of the Active Shield Tank (besides the capacitor) are the shield booster and the shield boost amplifier. The Active Shield Tank focuses on reinforcing the first line of defence of your ship to avoid its destruction. The most important characteristic is that both modules use medium slots, thus leaving room in the low slots for damage-increasing modules. Another important characteristic is that the reinforcement occurs relatively fast, in a much shorter time than in the case of the Armor Tank.

However, this fast repair comes with a price; compared to the Armor Tank, the Shield Tank needs much more energy to operate. Its great advantage is that the shield booster recharges the shield at the beginning of the cycle, while the armor repairer repairs the armor at the end of its cycle.

The shield booster module 'repairs' the shield while the shield boost amplifier increases the booster's effectiveness providing considerably more repair amount to given energy/time. Two boosters working in pair are still more effective but one should always consider the amount of energy used in the process. Let's see the shield boosters (without skill and ship bonuses):

Name	Capacitor	Cycle Time	Repaired amount	Efficiency	Recharge / second
Medium Shield Booster I	60 GJ	3 s	78 HP	1,30	26,00 HP/s
Medium Shield Booster II	60 GJ	3 s	104 HP	1,73	34,67 HP/s
Caldari Navy Medium Shield Booster	60 GJ	2,4 s	95 HP	1,58	39,58 HP/s
Pithum A-Type Medium Shield Booster	60 GJ	3 s	228 HP	3,80	76,00 HP/s
Medium Ancillary Shield Booster	142 GJ	3 s	146 HP	1,03	48,67 HP/s

Let's see now what would be the amount of shield restored if the modules are aided by a Shield Boost Amplifier I, Shield Boost Amplifier II, Caldari Navy Shield Boost Amplifier and a Pith A-Type Shield Boost Amplifier. (Only one at a time, for simplicity ;-)). The respective effectiveness will be leaved unchanged (so a Tech I will be outperformed by a named module).

Name	Shield Boost Amplifier I	Shield Boost Amplifier II	Caldari Navy Shield Boost Amplifier	Pith A-Type Shield Boost Amplifier
Medium Shield Booster I	101,40	106,08	107,25	111,64
Medium Shield Booster II	135,20	141,44	143,00	148,85
Caldari Navy Medium Shield Booster	123,50	129,20	130,63	135,97
Pithum A-Type Medium Shield Booster	296,40	310,08	313,50	326,33
Medium Ancillary Shield Booster	189,80	198,56	200,75	208,96

As we can see now:

- **Medium Shield Booster I(x2)** after spending 120Gjs of energy you will be left with 156 restored shield points, every 3 seconds. This will mean a net yield of = 40 energy / 52 shield / every seconds.
- **Medium Shield Booster I and a Shield Boost Amplifier I**, after spending 60Gjs of energy, you will be left with 101.4 point of shield restored every 3 seconds. To put it this way: 20 energy / 33,8 shield / second. This – if we project it to 40 energy used will mean the restoration of 67,6 shield points.

If we look at the amount of shield restored in a 30 second time frame (10 cycle), then the fit with the two boosters regenerated 1560 points of shield but consumed 1200GJ energy in the process.

Contrary to this the fit of booster + amplifier only spent 600GJ (half) of energy and regenerated 1014 points of shield!

It might seem a better idea to use the first with the more shield regeneration but always consider that sooner or later we will experience an energy-shortage that we can probably only counter with the use of a capacitor booster module.

It is much better if we'd fit a resistance module instead and use the booster + amplifier – we use less energy and the added resistance will further increase the resilience of the shield.

Naturally we can use the two boosters by only running one continuously and keeping the other in reserve for emergency situations. Or we can fit more amplifiers but in this case the stacking penalty severely dampens the effectiveness of the amplifier after the second or third module.

In the realms of AST users the utilization of a Capacitor Booster Module is quite popular as with the use of this module you can gain instant energy that can be then fed to the shield booster module.

Required / Recommended Skills

In addition to the skills listed here, you should also train the 'general' skills listed in the Buffer Tank chapter.

Name	Rank	Suggested Min. Level	Effect
Shield Compensation	2	4	Improved skill for regulating energy flow to shields. 2% less capacitor need for shield boosters per skill level. Note: Has no effect on capital sized modules.
Shield Management	1	4	Skill at regulating a spaceship's shield systems. 5% bonus to shield capacity per skill level.
Shield Operation	1	3	Skill at operating a spaceship's shield systems, including the use of shield boosters and other basic shield modules. 5% reduction in shield recharge time per skill level.
Capacitor Management	3	4	Skill at regulating your ship's overall Capacitor capacity. 5% bonus to capacitor capacity per skill level.
Capacitor Systems Operation	1	4	Skill at operating your ship's capacitor, including the use of capacitor boosters and other basic Capacitor modules. 5% reduction in capacitor recharge time per skill level.
EM / Thermic / Kinetic / Explosive Shield Compensation	2	4	5% bonus to resistance per level for Shield Amplifiers

Advantages Of Active Shield Tanking

This method regenerates almost immediately, so you can avoid its continuous use, thus conserving energy. Its huge advantage against the Armor Tank is that the desired result can be reached within a few seconds. Compare this with the Armor Tank, where nine to 12 seconds pass between activation and final result.

Comparing the three main methods of tanking, this is the most rapid solution, repairing the most amount of HP within a given time frame. It uses the most power as well.

Its great advantage against Armor Tanking, however, is the location of the modules required to make it work. This method uses mid slots, leaving the necessary low slots for damage-increasing modules free. Finally, compared to the Passive Shield Tank, its advantage is that the desired outcome can be reached using far fewer modules.

Disadvantages Of Active Shield Tanking

Compared to an Armor Tank, its damage resistance is not as good. The shield resistance totals 110%; that is 0% Electro Magnetic, 50% Explosive, 40% Kinetic, and 20% Thermal. Compare to the armor resistance total of 130%; where 50% EM, 10% Exp, 35% Kinetic, 35% Thermal resistance. In the case of Active Shield Tank, the price is for the efficiency and the high energy requirement, which is two to three times larger than that of the Armor Tank. The result is even worse when comparing it to the Passive Shield Tank, which does not need capacitor at all.

Modules Required/Recommended For Active Shield Tank

Module	Effect	Active / Passive
Shield Booster	Expends energy to provide a quick boost in shield strength	Active
Ancillary Shield Booster	Provides a quick boost in shield strength. The module takes Cap Booster charges and will start consuming the ship's capacitor upon the charges running out.	Active
Shield Boost Amplifier	Focuses and amplifies the efficiency of shield boosting modules. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized	Passive
Shield Extender	Increases the maximum strength of the shield	Passive
Shield Hardener (EM / Thermic / Kinetic / Explosive Field)	Boosts shield resistance against a specific. Penalty: Using more than one type of this module, or similar modules that affect the same resistance type, will result in a penalty to the boost you get on that type of resistance	Active
Shield Resistance Amplifier (EM / Thermic / Kinetic / Explosive)	Boosts the specific resistance of the shield. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized	Passive

The Armor Tank

Armor tanking requires a different approach to shield tanking. Its main advantage is that before you start using the capacitor, you have some extra time while the shield is whittled away. However, the danger should not be underestimated; make only one mistake (forget to activate the repairer in time), or if the tank is inefficient (the damage is bigger than the amount that can be repaired), and you have to escape within that painfully short time that the structure's hitpoints will offer.

Armor tanking is a very simple concept: fit an armor repairer to your ship and activate it. The reason for the existence of this method of protection is (among others, many ships were designed for armor tanking), that its energy consumption is much more efficient than that of the Shield Tank.

While shield tanking gives only one shield point for one energy point, the amount is two to three times that when using an Armor Tank.

Modules that are also considered part of the Armor Tank are: armor plates, armor repairers and various armor resistance enhancer modules. They all use the low slots of the ship. The medium slots are thus open for tracking computers, webifiers, microwarpdrives, warp scramblers and afterburners.

The repairing rate of the Armor Tank is not as good as that of the Shield Tank, due to its slower cycle time (nine to 12 seconds). This tank method builds on the ship's resistance, typically with extra armor hardeners. Due to the relatively low energy consumption, capacitor boosters are hardly ever needed, as capacitor power relays may keep your capacitor stable.

There are only a few things that can improve the efficiency of repairers (some ships also have a bonus, like the Paladin):

- **Auxiliary Nano Pump**: increases the ship's armor repairer repair amount.
- **Nanobot Accelerator**: reduces the ship's armor repair cycle duration
- **Trimark Armor Pump**: increases the ship's total armor hitpoints

Required / Recommended Skills

Name	Rank	Suggested Min. Level	Effect
Hull Upgrades	2	5	Skill at maintaining your ship's armor and installing hull upgrades like expanded cargoholds and inertial stabilizers. Grants a 5% bonus to armor hit points per skill level.
Mechanic	1	5	Skill at maintaining the mechanical components and structural integrity of a spaceship. 5% bonus to structure hit points per skill level.
Repair Systems	1	5	Operation of armor/hull repair modules. 5% reduction in repair systems duration per skill level. Note: Has no effect on capital sized modules.
Capacitor Management	3	4	Skill at regulating your ship's overall Capacitor capacity. 5% bonus to capacitor capacity per skill level.
Capacitor Systems Operation	1	4	Skill at operating your ship's capacitor, including the use of capacitor boosters and other basic Capacitor modules. 5% reduction in capacitor recharge time per skill level.
EM / Explosive / Kinetic / Thermic Armor Compensation	2	4	5% bonus to resistance per level for Armor Coatings and Energized Platings

Advantages Of The Armor Tank

The better resistances to the armor, and the more efficient capacitor consumption are the major advantages of the Armor Tank. The length of the cycle also is an advantage, as there is more time for capacitor regeneration. A kind of 'tricky' advantage is that the tank does not have to be operational until the shield is gone, giving some extra time to the ship's captain. Due to the lower power requirement, a continuously active 'double tank' can be fitted (two armor repairers) as in the case of shield tank.

Disadvantages Of The Armor Tank

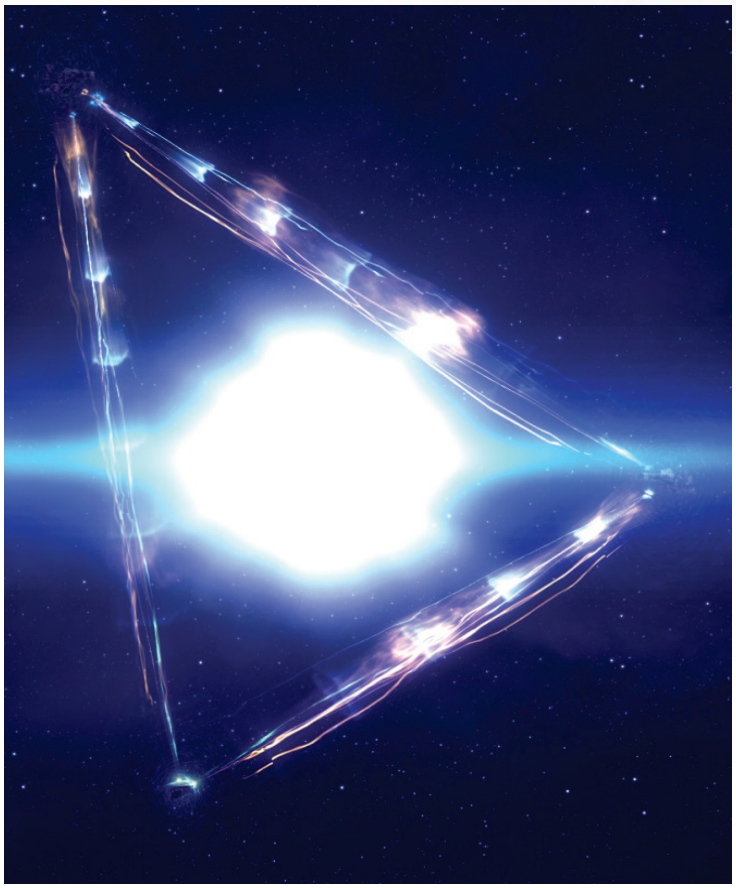
The unquestionable disadvantage of this method is that if the tank is broken, the next line of defence won't offer enough time to escape, whereas with shield tanking, the armor provides more time. According to its characteristic, the longer cycle does not give an advantage over the shields.

Modules Required/Recommended For Armor Tank

	Name	Effect	Active / Passive
	Armor Repairer	This module uses nano-assemblers to repair damage done to the armor of the ship.	Active
	„x" mm Reinforced Plates	Increases the maximum strength of the Armor. Penalty: Adds to your ship's mass, making it less agile and maneuverable in addition to decreasing the factor of thrust gained from speed modules like Afterburners and Microwarpdrives.	Passive
	Armor EM / Thermic / Explosive / Kinetic Hardener	An enhanced version of the standard armor plating. Uses advanced magnetic field generators to strengthen the Nanobot Plating integrity. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Active
	Energized Plating (EM / Thermic / Explosive / Kinetic Membrane)	An enhanced version of the standard armor plating. Uses advanced magnetic Field generators to strengthen the Nanobot Plating integrity. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Passive
	Resistance Plating (EM / Thermic / Explosive / Kinetic Plating)	Grants a bonus to resistance. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Passive
	Reactive Armor Hardener	The Reactive Armor Hardener possesses an advanced nano membrane that reacts to armor layer damage by shifting between resistances over time. This makes it able to align its defense against whichever incoming damage types are prevalent. The module spreads 60% resistance over the four damage types, starting at 15% in each. Only one of this module type can be fitted at a time. Prototype Inferno Module.	Active

The Remote Tank

The Remote Tank is a repair method provided by other ships or drones. It can be used on both armor and shield. The main reason for this method is that the bigger ships are not able to withstand attackers en masse (like capitals versus a fleet of many battleships). Thus they need the help. Another reason can be the many strong opponents of an NPC mission or Complex attacking at the same time. The tank needs help there. It is also useful in the case of the smaller roaming gang. The fleet members can help each other, since the primary target cannot be known in advance. If the tanking ship consumes all its capacitor power, the support ships help with repair and capacitor recharge. In most cases, the tanking ship has the highest resistances, shield and armor in the fleet.



Required / Recommended Skills

In addition to the skills listed here, you should also train the general skills listed in the Buffer Tank chapter.

Name	Rank	Suggested Min. Level	Effect
Remote Armor Repair Systems	2	4	Operation of Remote Armor Repairers. 5% reduced capacitor need for Remote Armor Repairer modules per skill level.
Capital Remote Armor Repairers	10	4	Operation of capital sized Remote Armor Repairers. 5% reduced capacitor need for capital Remote Armor Repairer modules per skill level.
Shield Emission Systems	2	4	Operation of Remote Shield Booster array and other shield emission systems. 5% reduced capacitor need for shield emission system modules per skill level.
Capital Shield Emission Systems	10	4	Operation of capital sized Remote Shield Booster array and other shield emission systems. 5% reduced capacitor need for capital shield emission system modules per skill level.

Advantages Of The Remote Tank

The most important advantage is that it provides free room for DPS (Damage Per Second) and combat modules, so a ship can entirely focus on either on damage dealing or damage absorbing. Naturally the target ship should also have a tanking method fitted, which is usually the Buffer Tank. Remote tanking can be used on POSes or POS modules as well, which is another huge advantage.

Disadvantages Of The Remote Tank

The support ship is relatively unprotected, as its huge portion of capacity is used to protect the target ship. The remote repairers are not suitable for self-repairing. They use high slots, just like weapons do. The most common problem is when the support is being shot, or if the player's internet connection is lost. Please note, the CONCORD will react in highsec, when you using on NPCs!

Modules Required/Recommended For Remote Tank

	Name	Effect	Active / Passive
	Remote Armor Repairer	This module uses nano-assemblers to repair damage done to the armor of the Target ship.	Active
	Shield Transporter	Transfers shield power over to the target ship, aiding in its defense.	Active
	Remote Hull Repair System	This module uses nano-assemblers to repair damage done to the hull of the Target ship.	Active

Tech 1 Support Cruisers

These cruiser-class ships are not designed particularly for support, but do receive some bonuses to support use. Less effective than their Tech 2 cousins, they are a useful training tool for trying out a support role without too much expense.

Due to good support's reliance on a large skill-set, by the time you've skilled properly for a Logistics role you'll probably have the Tech 2 variant anyway. The Tech 1 Cruisers with bonuses to the RR role are as follows:

- Augoror
- Osprey
- Exequror
- Scythe

Tech 2 Logistics Cruisers

The first set of ships to be truly effective in the role and still the most common for sub-capital fleets across New Eden, Tech 2 Support Cruisers have powerful bonuses. Like all Tech 2 Cruisers, you will need the appropriate racial Cruiser skill at Level V to fly them, and you will also need the Logistics skill in order to get the best out of them.

It is a general rule of thumb that pilots do not fly Logistics vessels in combat scenarios until they have the Logistics skill at V, as the weakest member of a chain is the most vulnerable, and if one part of the chain is broken the whole thing falls apart. If this is the case in your fleet, don't take it personally – it's purely an efficiency thing.

The Tech 2 Logistics Cruisers with bonuses to the RR role are as follows:

- Guardian
- Basilisk
- Oneiros
- Scimitar

Capital Support

Capital-class vessels make excellent support vessels – they have huge hit points, Capital-size modules and can use the Triage module for extra power. Both Carriers and Supercarriers receive a nice bonus to Capital support module range per level of the Carrier skill (the particular type of module varies with the ship). The carriers are:

- Archon
- Chimera
- Thanatos
- Nidhoggur

The Triage Module

The Triage module turns a support Carrier into a veritable powerhouse of remote repair. When active, the module provides a 100% bonus to Capital Armor Repair, Energy Transfer, Remote Armor and Remote Hull Repair modules, and a 50% reduction in cycle time to Capital Armor Repair, Energy Transfer, Remote Armor and Remote Hull Repair modules. This effectively quadruples the ships' repair output – a huge boost – and the ship also receives a 900% boost to Sensor Strength, allowing for faster locks and +4 locked targets for better application of support. It does have a downside, however. The module consumes 250 units of Strontium Clathrates per cycle and will not activate without sufficient fuel. Once activated, the ship is completely immobile and cannot dock for the duration of the cycle (5 minutes); the number of usable Drones is reduced to zero, and the ship becomes immune to all external remote effects, both allied and enemy. Only one Triage module can be active at any time; there is no use fitting more than one.

The Passive Shield Tank

The key concept of passive tanking is that the ship does not depend on the capacitor, so you have one less problem to deal with. Ignoring the active tank modules (shield booster, armor repairer, etc.) frees some room, so that more useful modules can be fitted to the ship. It also reduces the potential to die from 'Alpha Strikes', or massive damage before the active tank's repairers have a chance to cycle and repair anything.

The Passive Shield Tank is capable of continuous tanking without using an active module, thus consuming capacitor power so it can disregard armor repairers and shield boosters. In cases where an active module (such as a resistance enhancer) is fitted on the ship, it is called Hybrid Tank.

There are three approaches of the Passive Shield Tank:

1. Increase the amount of the shield and/or improve the shield recharge time.
2. Increase the resistances of the shields, so that each hit represents less damage, effectively increasing the ship's effective hitpoints.
3. A combination of the above two. Increase the amount of the shield so that the recharge rate will repair more shield, increase the shield recharge rate, and improve the resistances of the shield.

Naturally, passive armor tanking ships can be created by this method as well, but remember that the armor never regenerates on its own!

The Passive Shield Tank is the most popular among agent runners, or 'ratters' who use it in the asteroid belts. While it really shines in PvE, many PvP pilots consider it a bit too risky. The tank is built on the fact that the shield regenerates in a fixed time, regardless of the amount of the shield.

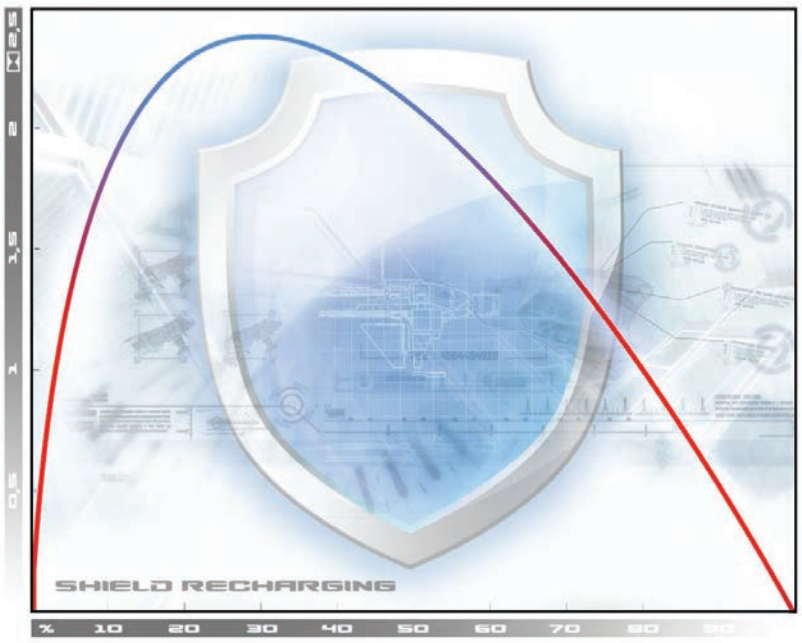
Thus, if a shield recharges in 500 seconds, it does not matter whether the shield capacity is 500 or 5,000,000 HP. The recharge time remains the same (500 seconds). In the first case the regeneration rate is one shield/sec (500 shield HP in 500 seconds), while in the second 10,000 shield/sec (or 5,000,000 shield HP in 500 seconds). So, a ship with more shield doesn't recharge faster, but it does recharge more shield HP per second. Either increase the shield HP or reduce its regeneration time (or both). These two factors determine the shield regeneration time.

Using the above example, if you increase the shield HP from 500 to 1000, your ship's average shield recharge rate would increase from one HP per second to two HP per second. If you reduce the shield recharge time from 500 seconds to 250 seconds, you would reach the same recharge rate.

However, this is EVE Online, so nothing is that simple. The shield recharge rate, just like that of the capacitor, is not linear, it is only the peak; namely it indicates the highest regeneration rate.

The Natural Regeneration Of The Shield

The "precise formula" is quite similar to the formula of the capacitor, namely: Peak = 2.4 x Maximum Shield Hitpoints / Shield Recharge Time.



As you can see on the graph above, with a given recharge time (the vertical scale), the peak of the regeneration rate is at 30% of the shield hitpoints (the horizontal scale). Sometimes, the best solution is not always reducing the recharge time. The extra shield hitpoints provided by a shield extender may give better results.

Required / Recommended Skills

Name	Rank	Suggested Min. Level	Effect
Shield Operation	1	5	Skill at operating a spaceship's shield systems, including the use of shield boosters and other basic shield modules. 5% reduction in shield recharge time per skill level.
Shield Management	3	5	Skill at regulating a spaceship's shield systems. 5% bonus to shield capacity per skill level.
Energy Grid Upgrades	2	4	Skill at installing power upgrades e.g. capacitor battery and power diagnostic units. 5% reduction in CPU needs of modules requiring Energy Grid Upgrades per skill level.
Shield Upgrades	2	4	Skill at installing shield upgrades e.g. shield extenders and shield rechargers. 5% reduction in shield upgrade powergrid needs.
Tactical Shield Manipulation	4	1	Skill at preventing damage from penetrating the shield, including the use of shield hardeners and other advanced shield modules. Reduces the chance of damage penetrating the shield when it falls below 25% by 5% per skill level, with 0% chance at level 5.
Shield Rigging	3	1	Advanced understanding of shield systems. Allows makeshift modifications to shield systems through the use of rigs. 10% reduction in Shield Rig drawbacks per level.
EM / Explosive / Kinetic / Thermic Shield Compensation	2	4	5% bonus to resistance per level for Shield Amplifiers

Advantages Of The Passive Shield Tanking

+ Unless it is the Hybrid Tank, the Passive Shield Tank is extremely easy to use. Warp out of any conflict as soon as the shield reaches 10% to 15%! You do not have to monitor the capacitor, activate the shield booster, and even when your internet connection is lost, you have good chance of survival (provided that your tank endures). In case you have a ship with high resistance bonuses (i.e. a Ferox or Drake) and you fit resistance enhancer modules on the ship, this rate will be very impressive.

For instance, if 20 shield hitpoints recharge per second and you have 80% of a specified resistance, then the tank totals in 100 effective shield HP/second. Undoubtedly this is the most AFK-type of tanking method.

Disadvantages Of The Passive Shield Tanking

– You have absolutely no influence on your tank. There's nothing more you can activate to help, nothing to overheat, nothing to boost. If your tank is broken and you have not prepared for retreat, you will die. It's as simple as that. Although the regeneration is continuous, it is not as high as in the case of active tanking. Another great disadvantage is that it requires many low and medium slots, thus taking room from the damage modules and/or other medium slot equipment.

Modules Required/Recommended For Passive Shield Tank

Name	Effect	Active / Passive
Shield Extender	Increases the maximum strength of the shield.	Passive
Shield Recharger	Improves the recharge rate of the shield.	Passive
Shield Power Relay	Diverts power from the capacitors to the shields, thereby increasing the shield recharge rate.	Passive
EM / Thermic / Explosive / Kinetic Shield Resistance Amplifier	Boosts the resistance of the shield. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Passive
Core Defense Field Purger	This ship modification is designed to improve shield recharge rate at the expense of increased signature radius.	Passive
Core Defense Field Extender	This ship modification is designed to increase shield capacity at the expense of increased signature radius.	Passive

A Buffer Tank

The key concept of the Buffer Tank is to significantly increase the effective hitpoints of the ship. The larger number gives you a chance to use the repair modules and if the tank is broken (i.e. the ship gets more damage than it could repair), it gives you time to escape or wait for the cavalry to save you.

In most cases, this technique is to buy time to kill the opponents and reduce incoming DPS until it reduces below your normal tank (or remote tanking) again. You should definitely use it when huge DPS is expected, within a short time range that even the repair cycle could not manage, like surviving an Alpha Strike by an enemy fleet. Nevertheless, it is not suitable for independent tanking, as it cannot regain the lost HPs, but only combined with self or remote repair.

Buffer tanking can be shield or armor based. In the first case, the desired result is reached by using shield extenders and/or resistance enhancing modules, while in the later, armor plates and/or resistance enhancing modules are used.

Required / Recommended Skills

Name	Rank	Suggested Min. Level	Effect
Shield Management	3	4	Skill at regulating a spaceship's shield systems. 5% bonus to shield capacity per skill level.
Shield Upgrades	2	2	Skill at installing shield upgrades e.g. shield extenders and shield rechargers. 5% reduction in shield upgrade powergrid needs.
Tactical Shield Manipulation	4	4	Skill at preventing damage from penetrating the shield, including the use of shield hardeners and other advanced shield modules. Reduces the chance of damage penetrating the shield when it falls below 25% by 5% per skill level, with 0% chance at level 5.
Shield Rigging	3	2	Advanced understanding of shield systems. Allows makeshift modifications to shield systems through the use of rigs. 10% reduction in Shield Rig drawbacks per level.
EM / Explosive / Kinetic / Thermic Shield Compensation	2	4	5% bonus to resistance per level for Shield Amplifiers
Hull Upgrades	2	4	Skill at maintaining your ship's armor and installing hull upgrades like expanded cargoholds and inertial stabilizers. Grants a 5% bonus to armor hit points per skill level.
EM / Explosive / Kinetic / Thermic Armor Compensation	2	4	5% bonus to thermal resistance per level for Armor Coatings and Energized Platings
Armor Rigging	3	2	Advanced understanding of armor systems. Allows makeshift modifications to armor systems through the use of rigs. 10% reduction in Armor Rig drawbacks per level.
Mechanic	1	4	Skill at maintaining the mechanical components and structural integrity of a spaceship. 5% bonus to structure hit points per skill level.

Advantages Of The Buffer Tank

+ It empowers the ship with a significant amount of 'temporary' hitpoints, i.e. it is able to endure the incoming damage, and can survive one or two really huge hits. The buffer offers you enough time to either run or attack and hold up the enemy. With proper support it is an ideal tanker.

Disadvantages Of The Buffer Tank

– The Buffer Tank doesn't have any means of repairing any lost hitpoints except for the slow natural recharge rate of the shield, so it does not provide any long-term survival plan. Without friends, support or other help, you can only hope that you will finish off your enemies before they burn through your tank.

Modules Required/Recommended For Buffer Tank

	Name	Effect	Active / Passive
	„x" mm Reinforced Plates	Increases the maximum strength of the Armor. Penalty: Adds to your ship's mass, making it less agile and maneuverable in addition to decreasing the factor of thrust gained from speed modules like Afterburners and Microwarpdrives.	Passive
	Armor EM / Thermic / Explosive / Kinetic Hardener	An enhanced version of the standard armor plating. Uses advanced magnetic field generators to strengthen the Nanobot Plating integrity. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Active
	Energized Plating (EM / Thermic / Explosive / Kinetic Membrane)	An enhanced version of the standard armor plating. Uses advanced magnetic Field generators to strengthen the Nanobot Plating integrity. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Passive
	Resistance Plating (EM / Thermic / Explosive / Kinetic Plating)	Grants a bonus to resistance. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Passive
	Reactive Armor Hardener	The Reactive Armor Hardener possesses an advanced nano membrane that reacts to armor layer damage by shifting between resistances over time. This makes it able to align its defenses against whichever incoming damage types are prevalent. The module spreads 60% resistance over the four damage types, starting at 15% in each. Only one of this module type can be fitted at a time. Prototype Inferno Module.	Passive
	Shield Extender	Increases the maximum strength of the shield.	Passive
	Shield Recharger	Improves the recharge rate of the shield.	Passive
	Shield Power Relay	Diverts power from the capacitors to the shields, thereby increasing the shield recharge rate.	Passive
	EM / Thermic / Explosive / Kinetic Shield Resistance Amplifier	Boosts the resistance of the shield. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Passive
	Shield Hardener (EM / Thermic / Kinetic / Explosive Field)	Boosts shield resistance against a specific. Penalty: Using more than one type of this module, or similar modules that affect the same resistance type, will result in a penalty to the boost you get on that type of resistance	Active

The Speed / Signature Tank

An optimal combination of modules to reach a low signature radius and a high speed can actually eliminate incoming damage. Low signature radius can be achieved by the type of the ship (assault frigate, interceptor, strategic cruisers, or some cruisers such as the Ishtar, Scimitar, and Vagabond).

You can also use:

- **Skirmish Warfare Link - Evasive Maneuvers**
- **Halo implants**

The speed of the ship is provided by afterburners or microwarpdrives. You can also consider overdrive injectors to boost your speed. Remember that microwarpdrives increase a ship's signature radius, so afterburners are generally a better idea.

Other Ways Of Tanking

You can use some 'dirty tricks' to increase your survival rates:

- Keep relatively long distance. You can attack from long range, enemies cannot. You snipe at them from a distance and they die before coming close enough to be able to do serious damage.
- Really high speed and transversal movements make the enemy guns unable to track you (and slower missiles can have a problem reaching you).
- Cloaking. If you cannot be seen, you cannot be a target.
- Electronic Warfare, i.e. jamming the guns or targeting systems of the enemy ships, thus reducing their efficiency, or completely forcing the enemy to watch the fight, making them totally helpless.

Resistance Is Never Futile!

One of the most important ways of increasing defence is to reduce the incoming damage with the help of your armor or shield resistances.

While structure, does not have any basic resistances, both armor and shield have some (Tech II ships are much better than their Tech I versions).

The special bonuses of the ships are above their basic resistances.

Base Resist of the Ships

	Shield	Armor
EM	0%	50%
Thermal	20%	35%
Kinetic	40%	35%
Explosive	50%	10%

How Resists Work?

If you have 0 resistance against a damage type and the damage from an incoming attack is 100, your shield/armor/structure hitpoints will be reduced by 100 points. The value of the resistance enhancing module equals the difference between 100% and the resistance already existing.

1-(1-A * [1-B] * [1-C] * [1-(.87 * D)] * [1-(.57 * E)] * [1-(.23 * F)] *[Etc.])

A = Basic resistance

B = Ship Bonus(es) (if exists)

C = Best resist enhancing module (if exists)

D = 2nd best resist enhancing module (if exists)

E = 3rd best resist enhancing module (if exists)

F = 4th best resist enhancing module (if exists)

The negative multiplier for second and later modules is the stacking penalty

Damage	Damage W/ 0% Resistance	50% Of Resistance	50% Basic And 30% Of Resistance Enhancer Module (65% Resistance)	50% Basic, 50% Ship Bonus And 30% Resistance Enhancer Module (82.5% Resistance)
100	100	50	35	17,5
300	300	150	105	52,5
500	500	250	175	87,5
800	800	400	280	140

As you can see, one shield booster/amplifier (even a large booster instead of an XL is fine) or a single armor repairer can provide you enough protection. But even a 'cheaper' (lower Meta level) module can serve well with decent resistances.

However, keep in mind that there is no such thing as an 'over-tanked' ship, and it is better to have more tank than is required, instead of less. Less means dead.

The following tables are based on a Gallente battleship with 10% basic resistance against explosive damage as an example.

Skills, rigs and modules used in the example:

- **Armor Explosive Hardener I** (active resistance enhancer module against explosive damage)
- **Anti-Explosive Pump I** (armor resistance enhancer rig against explosive damage)
- **Explosive Armor Compensation** (level III skill to improve the effect of the active armor resistance enhancing modules against explosive damage)
- **Energized Adaptive Nano Membrane I** (EANM – Armor resistance enhancer against all damage types)

With 0 Rig – Base Resist 10%

Hardeners	1 Hardener	2 Hardeners	1 EANM + 1 Hardener	2 EANMs + 1 Hardener	1 EANM + 2 Hardeners	2 EANMs + 2 Hardeners
0 Active 1 Inactive	18,1%	-	31,4%	39,9%	-	-
0 Active 2 Inactive	-	24,5%	-	-	34,9%	41,5%
1 Active 0 Inactive	55%	-	61,7%	65,5%	-	-
2 Active 0 Inactive	-	74,6%	-	-	77,1%	78,2%
1 Active 1 Inactive	-	58,5%	-	-	63,7%	66,4%

With 1 Rig – Base Resist 10%

Hardeners	1 Hardener	2 Hardeners	1 EANM + 1 Hardener	2 EANMs + 1 Hardener	1 EANM + 2 Hardeners	2 EANMs + 2 Hardeners
0 Active 1 Inactive	41,9%	-	49,2%	52,9%	-	-
0 Active 2 Inactive	-	44,9%	-	-	50,5%	53,4%
1 Active 0 Inactive	66,7%	-	70%	71,5%	-	-
2 Active 0 Inactive	-	78,9%	-	-	79,9%	80,3%
1 Active 1 Inactive	-	68,4%	-	-	70,8%	71,7%

With 2 Rigs – Base Resist 10%

Hardeners	1 Hardener	2 Hardeners	1 EANM + 1 Hardener	2 EANMs + 1 Hardener	1 EANM + 2 Hardeners	2 EANMs + 2 Hardeners
0 Active 1 Inactive	55,8%	-	59,1%	60,4%	-	-
0 Active 2 Inactive	-	56,9%	-	-	59,5%	60,5%
1 Active 0 Inactive	72,4%	-	73,8%	74,3%	-	-
2 Active 0 Inactive	-	80,7%	-	-	81,1%	81,2%
1 Active 1 Inactive	-	73,1%	-	-	74%	74,3%

With 3 Rigs – Base Resist 10%

Hardeners	1 Hardener	2 Hardeners	1 EANM + 1 Hardener	2 EANMs + 1 Hardener	1 EANM + 2 Hardeners	2 EANMs + 2 Hardeners
0 Active 1 Inactive	62,4%	-	63,6%	64,1%	-	-
0 Active 2 Inactive	-	62,7%	-	-	63,7%	64,1%
1 Active 0 Inactive	74,8%	-	75,2%	75,4%	-	-
2 Active 0 Inactive	-	81,3%	-	-	81,4%	81,4%
1 Active 1 Inactive	-	75%	-	-	75,3%	75,4%

If you use a passive armor resists based tank, EANMs can be useful, but you should not forget that they are not as effective as damage specific active armor resistance hardeners.

Tech 1 EANM (Lvl 3 Compensation) – Base Resist 10%				
	0 EANM	**1 EANM**	**2 EANMs**	**3 EANMs**
Without Rigs	10%	25,5%	36,7%	42,9%
With 1 Rig	37%	46,4%	51,7%	54,1%
With 2 Rigs	53,4%	58%	60,1%	60,8%
With 3 Rigs	61,4%	63,3%	64%	64,1%

Training Explosive Armor Compensation skill to level V and using Navy Equipment can enhance your resistances significantly. For example, let's see the Imperial Navy EANM module and Explosive Armor Compensation at Level V.

Amarr Navy EANM (Lvl 5 Compenstaion) – Base Resist 10%				
	0 EANM	**1 EANM**	**2 EANMs**	**3 EANMs**
Without Rigs	10%	35,3%	51,1%	59%
With 1 Rig	37%	52,4%	60%	63,2%
With 2 Rigs	53,4%	60,9%	64%	65,1%
With 3 Rigs	61,4%	64,5%	65,5%	65,8%

The above examples show that if you know what kind of enemies and their damage type you will face, it is worth using damage type specific active hardeners. It is very important to avoid fitting on unnecessary rigs/modules as comparing the 2 rig/2 modules with 3/2 or 2/3 sets shows that it does not cause significant improvement.

A 1/2 or 2/1 set compared to a 2/2 set increases the result only with 3-5%, but a rig or module slot is used as well. Summing it up, it is not worth fitting on more than three modules of the same type. (Stacking Penalty).

Required / Recommended Skills

Name	Rank	Suggested Min. Level	Effect
Shield Upgrades	2	2	Skill at installing shield upgrades e.g. shield extenders and shield rechargers. 5% reduction in shield upgrade powergrid needs.
Tactical Shield Manipulation	4	4	Skill at preventing damage from penetrating the shield, including the use of shield hardeners and other advanced shield modules. Reduces the chance of damage penetrating the shield when it falls below 25% by 5% per skill level, with 0% chance at level 5.
EM / Explosive / Kinetic / Thermic Shield Compensation	2	4	5% bonus to resistance per level for Shield Amplifiers
Hull Upgrades	2	4	Skill at maintaining your ship's armor and installing hull upgrades like expanded cargoholds and inertial stabilizers. Grants a 5% bonus to armor hit points per skill level.
EM / Explosive / Kinetic / Thermic Armor Compensation	2	4	5% bonus to resistance per level for Armor Coatings and Energized Platings

Required / Recommended Modules

	Name	Effect	Active / Passive
	Armor EM / Thermic / Explosive / Kinetic Hardener	An enhanced version of the standard armor plating. Uses advanced magnetic field generators to strengthen the Nanobot Plating integrity. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Active
	Reactive Armor Hardener	The Reactive Armor Hardener possesses an advanced nano membrane that reacts to armor layer damage by shifting between resistances over time. The module spreads 60% resistance over the four damage types, starting at 15% in each. Only one of this module type can be fitted at a time. Prototype Inferno Module.	Active
	Energized Plating (EM / Thermic / Explosive / Kinetic Membrane)	An enhanced version of the standard armor plating. Uses advanced magnetic Field generators to strengthen the Nanobot Plating integrity. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Passive
	Resistance Plating (EM / Thermic / Explosive / Kinetic Plating)	Grants a bonus to resistance. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Passive
	Shield Hardener (EM / Thermic / Kinetic / Explosive Field)	Boosts shield resistance against a specific. Penalty: Using more than one type of this module, or similar modules that affect the same resistance type, will result in a penalty to the boost you get on that type of resistance	Active
	Shield Resistance Amplifier (EM / Thermic / Kinetic / Explosive)	Boosts the specific resistance of the shield. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized	Passive
	Damage Control	Utilizes a combination of containment field emitters and redundancy systems to prevent critical system damage. Grants a bonus to resistance for shield, armor and hull. Only one Damage Control can be activated at a given time.	Active

Weapons - Gunfight at the O.K. Corral

There are many different and diverse weapon systems used in the EVE Online universe. Each race specializes in different systems of weaponry, but all races usually have at least one ship geared towards each system type. The three main system types are turret systems (Energy, Hybrid, Projectile), launcher systems (missiles, bombs), and drone systems.

There are many sub-systems for each main system, most of which are listed below. The one oddball system that contains no real bonuses is the smartbomb systems, which can be equipped on any ship and are equally effective on all ships. There are a few – weapon independent – property that can be important:

DPS: Damage Per Second (DPS) is a measure of the *rate* of combat damage dealt over time by a ship, module, or drone. It is expressed in hitpoints destroyed per second.

Volley: Volley damage is the amount of damage caused by one volley of your guns. I.e.: One shot from all weapons at once. (The first volley called as "Alpha Strike" – See below.)

Alpha damage / Alpha strike: Alpha damage is the amount of damage dealt by a ship when all guns and launchers on that ship fire at once. Alpha damage, also known as **strike damage** or **alpha strike damage**.

Missiles

The biggest advantage of missiles is that they always hit their target if it is within range. But for how much damage? Missiles have to fly to their target which takes time, so the damage is not instant. The Caldari specialize in using missiles, but some Minmatar ships can also use missiles as their secondary or even primary weapons.

Another major advantage of missiles is their various damage types, so depending on the weakness of the enemy, the most suitable damage type can be selected. All you have to do is use different sizes for different targets. (Do not fire torpedoes at frigates.)

To learn about the missile's stats, undock from the station and use 'Show Info' on yourself. Choose modules, and then select missiles from the list. You can also use the fitting window as well, and if you check your launchers or missiles, you can learn what you want to know. You can see your missile's (and launcher's statistics) in the "Tooltip window" too when you move the cursor above the module.

The stats here are the amount, upgraded with skills, modules and ship bonuses!

- **Launcher**: refers to the fitted module, rocket launcher, launching-carriage etc.
- **Missile**: ammunition fired from the launchers

Key Attributes of Missile Weapons

- **Rate of Fire** (ROF) *(launcher)*

The time between launching two missiles. It can be reduced by skills, modules (or by different kind of launcher). Lower delay means a faster weapon.

- **Maximum Velocity** *(missile)*

The speed your missile flies with. One of the attributes that determines the range.

- **Maximum Flight Time** *(missile)*

It means the maximum time the missile can fly. It is the second attribute that determines the range. Determining the range is simple: Missile Velocity x Flight Time. Naturally if the target is eliminated or gets out of range, the missile does not hit it. Or if it hits, the missile does not fly any further.

- **Damage** *(missile)*

It is the damage of the missile. Unlike guns, here the damage does not depend on where it is fired from. It can be modified by the ship's bonus, skills and modules.

- **Explosion Velocity** *(missile)*

Speed of the 'shockwave' from your exploding warhead. If the target is faster than this, the damage will be less. This value is closely related to the Explosion Radius.

- **Explosion Radius** *(missile)*

The radius of explosion of the missiles affects only the target! It determines how effective the bigger sized missiles are against small targets. If the Explosion Radius is not bigger than the target's Signature Radius, then the damage is not modified. If it is bigger, then it is taken from the damage accordingly.

The above example is only applies to standing targets. If it is moving, the Explosion Velocity must be taken into consideration as well.

For instance: if the missile's explosion radius is 400m, the target's signature radius is 150m, then the damage reduces to (150/400=0.375) 37.5%, so 72.5% of the charge is eliminated and does not do any damage.

Auto-Targeting and Defender Missiles

There are two special kinds of missiles, Auto-Targeting and Defender Missiles.

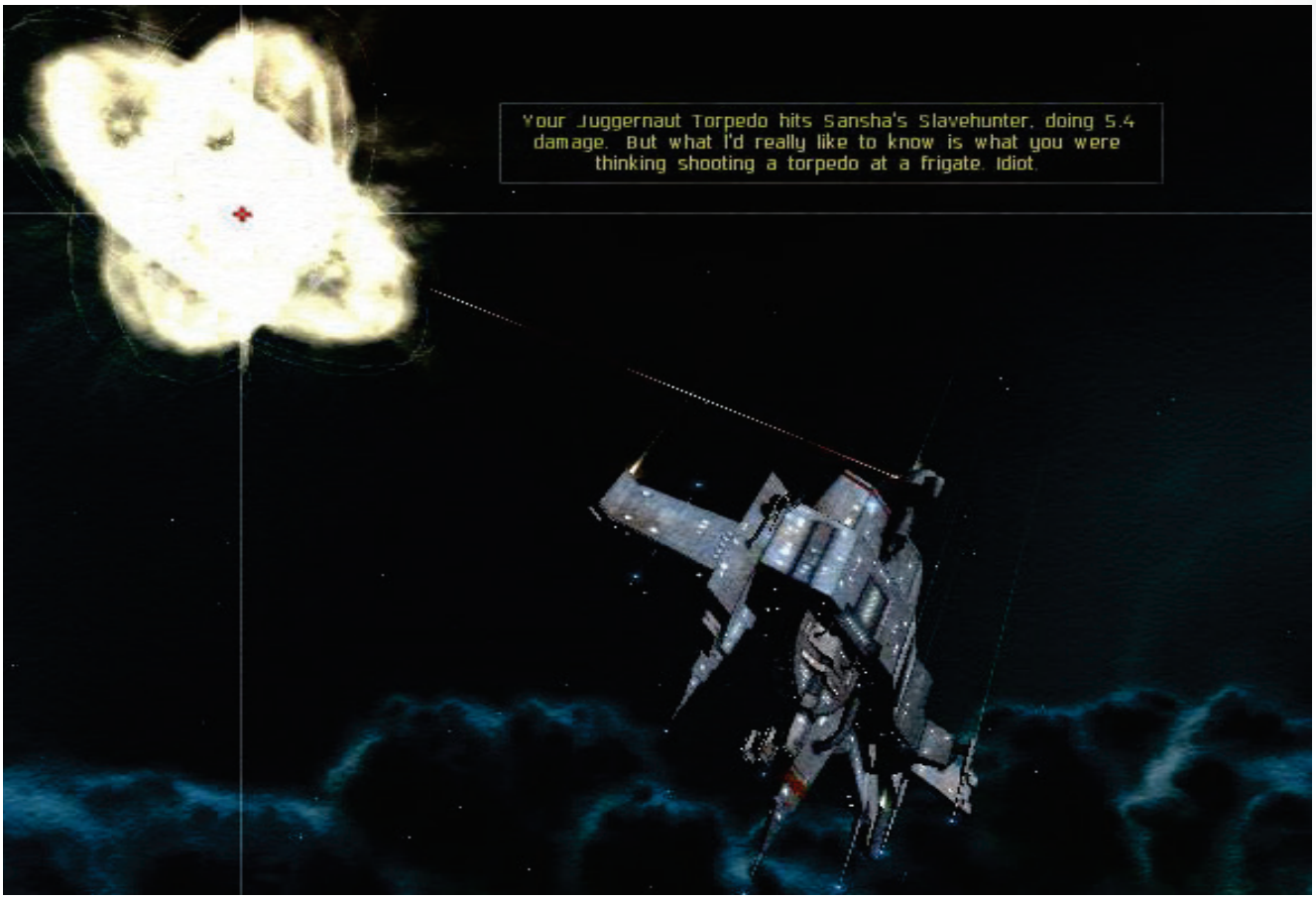
Light and Heavy Defender Missiles: These missiles is designed to destroy incoming rockets. In most cases, one is not enough to eliminate the threat, especially if it is Cruise Missiles or Torpedoes. The Light Defender Missiles fits into light missile launchers. The Heavy Defender Missiles fits into heavy missile launchers.

Auto-Targeting Missiles: They are 'Fire and Forget' type missiles, used mostly when the targeting systems are jammed. It is one of the sole weapons in the game that can do damage to enemies, even when they are not targeted. Their damage is not as much as with other missiles, but in return, FoF missiles provide firepower even when permanently jammed within targeting range. Anyone becomes an enemy that commits aggression in some way (steals from your container, shoots you) and thus becomes target.

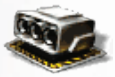
Size Does Matter!

Do not shoot small targets with large missiles, since the damage is highly influenced by the above mentioned factors, even if the target was hit. Do not waste torpedoes against frigates, and rockets are not suitable for sieging a POS.

The next table lists the stats of the missiles and their recommended targets. In most cases, you can still use another category up or down, but the efficiency will be reduced significantly, and it will be almost unusable with more than two sizes difference than recommended



Launchers and Missiles

Launcher		Missile		Suggested Enemy Size	Flight		Base Damage	ROF
					Speed	Time		
	Rocket Launcher		Rocket	Frigate	2250m/s	2s	33	5s
	Light Missile Launcher		Light Missile	Frigate	3750m/s	5s	83	16s
	Rapid Light Missile Launcher		Light Missile	Frigate, Cruiser	3750m/s	5s	83	7,8s
	Heavy Missile Launcher		Heavy Missile	Cruiser	4300m/s	6,5s	135	15s
	Rapid Heavy Missile Launcher		Heavy Missile	Cruiser, HAC	4300m/s	6,5s	135	6,48s
	Heavy Assault Missile Launcher		Heavy Assault Missile	Cruiser, HAC	2250m/s	4s	100	8s
	Cruise Missile Launcher		Cruise Missile	(With TP Cruiser) BC, BS	4700m/s	14s	375	20,7s
	Torpedo Launcher		Torpedo	BS, Dread, Carrier, POS	1500m/s	6s	450	18s
	Bomb Launcher		Bomb	Anything, Area of Effect (15km Radius)	2500m/s	12s	6400(!!!)	160s
	Citadel Torpedo Launcher		Citadel Torpedo	Dread, Carrier, POS, Titan	3500m/s	7,5s	2000	25,5s
	Citadel Cruise Launcher		Citadel Cruise Missile	Dread, Carrier, POS, Titan	5700m/s	15s	1500	35,2s

Required / Recommended Skills

Every missile gets a 5% bonus damage from the skill similarly named, with the exception of Defender Missiles, where the 5% bonus/skill level is applied to the velocity of the missile.

Name	Rank	Suggested Min. Level	Effect	Note
Missile Launcher Operation	1	5	Basic operation of missile launcher systems. 2% Bonus to missile launcher rate of fire per skill level.	Affect All Launchers
Missile Bombardment	2	4	10% bonus to all missiles' maximum flight time per level.	Affect All Missiles
Missile Projection	4	4	Skill at boosting missile bay trigger circuits and enhancing guided missiles' ignition systems. 10% bonus to all missiles' maximum velocity per level.	Affect All Missiles
Rapid Launch	2	5	Proficiency at rapid missile launcher firing. 3% bonus to missile launcher rate of fire per level.	Affect All Launchers
Target Navigation Prediction	2	4	Proficiency at optimizing a missile's flight path to negate the effects of a target's speed upon the explosion's impact. 10% decrease per level in factor of target's velocity for all missiles.	Affect All Missiles
Warhead Upgrades	5	4	Proficiency at upgrading missile warheads with deadlier payloads. 2% bonus to all missile damage per skill level.	Affect All Missiles
Guided Missile Precision	5	4	Proficiency at this skill increases the accuracy of a fired missile's exact point of impact, resulting in greater damage to small targets. 5% decrease per level in factor of signature radius for all missile explosions.	Only for Light, Heavy And Cruise missiles
Light / Heavy / Heavy Assault / Cruise Missile Specialization	5	5	2% bonus per level to the rate of fire of modules requiring Light / Heavy / Heavy Assault / Cruise Missile Specialization.	Not for: Auto-targeting, Defender Missile, Citadel Torpedo, Citadel Cruise Missile
Weapon Upgrades	2	5	5% reduction per skill level in the CPU needs of weapon turrets, launchers and smartbombs.	For All Weapons
Advanced Weapon Upgrades	6	4	Reduces the powergrid needs of weapon turrets and launchers by 2% per skill level.	For All Weapons

Required / Recommended Modules

	Name	Effect	Active / Passive
	Ballistic Control System	A computer system designed for monitoring and guiding missiles in flight, thus allowing for superior effectiveness and lethality. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Passive
	Target Painter	A targeting subsystem that projects an electronic "Tag" on the target thus making it easier to target and Hit. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Active

Ammunition For The Missile Launchers

In many cases, it might be a problem to determine the damage type of a missile, and honestly, their names do not help either. However, the colour of their warhead can help you. Every missile type causes only one type of damage, according to this:

Blue warheads mean EM damage (Mjolnir)

Red warheads mean Thermal damage (Inferno)

Dark green warheads mean Kinetic damage (Scourge)

Yellow warheads mean Explosive damage (Nova)

Missiles of every type (except Defender missiles) come in four versions, one for each damage type, but they do the same amount of damage. Of course, there are Faction Type Missiles with greater damage potential. While a normal Tech I Light Missile does 85 points of damage, the Caldari Navy version does 93 points, the Guristas 90 points, and the Dread Guristas version is 99 points of damage.

Tech II Missiles

Tech II missiles can only be used with Tech II launchers (don't mix them with the faction variants!) and can be divided in four types, **Long Range, High Precision, Anti-Ship, High Damage**:

- **Long Range (Javelin)**
- **High Precision (Precision)**
- **Anti-Ship (Rage)**
- **High Damage (Fury)**

Name	Properties	Normal Tech I	Long Range Javelin	High Precision	Anti-Ship Rage	High Damage Fury
Rocket	Explosion Radius	20 m	20 m		34 m	
	Explosion Velocity	150 m/sec	150 m/sec		129 m/sec	
	Max Velocity	2250 m/sec	3375 m/sec	—	1875 m/sec	—
	Flight Time	2 sec	2 sec		2 sec	
	Damage	33 HP	29,7 HP		44,6 HP	
Light Missile	Explosion Radius	40 m		25 m		69 m
	Explosion Velocity	170 m/sec		204 m/sec		143 m/sec
	Max Velocity	3750 m/sec	—	3750 m/sec	—	3750 m/sec
	Flight Time	5 sec		2,5 sec		3,75 sec
	Damage	83 HP		83 HP		116 HP
Heavy Missile	Explosion Radius	140 m		125 m		241 m
	Explosion Velocity	81 m/sec		97 m/sec		68 m/sec
	Max Velocity	4300 m/sec	—	4300 m/sec	—	4300 m/sec
	Flight Time	6,5 sec		3,25 sec		4,88 sec
	Damage	135 HP		135 HP		182 HP
Heavy Assault Missile	Explosion Radius	125 m	125 m		215 m	
	Explosion Velocity	101 m/sec	101 m/sec		87 m/sec	
	Max Velocity	2250 m/sec	3375 m/sec	—	1875 m/sec	—
	Flight Time	4 sec	4 sec		4 sec	
	Damage	100 HP	90 HP		135 HP	

Name	Properties	Normal Tech I	Long Range Javelin	High Precision	Anti-Ship Rage	High Damage Fury
Cruise Missile	Explosion Radius	330 m		297 m		567 m
	Explosion Velocity	69 m/sec		83 m/sec		58 m/sec
	Max Velocity	4700 m/sec	—	4700 m/sec	—	4700 m/sec
	Flight Time	14 sec		7 sec		10,5 sec
	Damage	375 HP		375 HP		525 HP
Torpedo	Explosion Radius	450 m	450 m		774 m	
	Explosion Velocity	71 m/sec	71 m/sec		61 m/sec	
	Max Velocity	1500 m/sec	2250 m/sec	—	1250 m/sec	—
	Flight Time	6 sec	6 sec		6 sec	
	Damage	450 HP	405 HP		608 HP	
Citadel Cruise Missile	Explosion Radius	1750 m				
	Explosion Velocity	29 m/sec				
	Max Velocity	4250 m/sec				
	Flight Time	20 sec				
	Damage	1500 HP				
Citadel Torpedo	Explosion Radius	2000 m				
	Explosion Velocity	20 m/sec				
	Max Velocity	1750 m/sec				
	Flight Time	15 sec				
	Damage	2000 HP				

Javelin: It's have **higher velocity** than the Tech 1 / normal version at the expense of warhead size.

Precision: Great for taking down smaller ships, but fuel use by stabilization thrusters reduces maximum flight time.

Rage: "The stronger punch", but as a result is heavier and slower. This makes it very effective against larger targets, but markedly less effective against smaller and more agile targets.

Fury: Does more damage than its predecessor but the volatile nature of the warhead, and its powerful containment system, reduce both flight time and precision.

Turrets

One of the main differences and advantages versus missile launchers is that turrets damage instantly. You do not have to wait until a missile reaches its target. Unfortunately, turrets can miss and their precision is significantly worse than using missiles. Time to learn the definitions of Tracking Speed and Range (Optimal and Falloff), Signature Radius (you might know this one already) and their relation to each other. Just like missile launchers, turrets use high slots. They require free turret hardpoints and free CPU/PG capacity in addition to the required skills.

- **Optimal Range**

The range when the turret is still accurate. It is affected by the ship bonus (if there is any) and the ammunition, which can modify the basic range from -50% to +50%.

- **Falloff Range**

It is the range that is added to the Optimal Range, reducing the hit probability of the turret to 50% (regardless of Signature Radius differences and the Tracking Speed). Doubling this range, the chance to hit is reduced to 0%. For instance, if the Optimal Range is 50km and the Falloff is 25km, the hit probability is 100% at 50km, 50% at 75km and 0% at 100km. Basically, the hit probability decreases linearly from 100% (Optimal Range), through 50% (Optimal + Falloff) to 0% (Optimal Range + Falloff + Falloff).

- **Tracking Speed**

Tracking Speed means how fast your turret can turn and aim at the enemy in radian/second. 1 rad/sec means that the turret turns 180 degrees in 3.14 seconds. All we really need to know is that higher is better. So, with higher Tracking Speed, you have a better chance to hit a quick, transversely moving ship.

“Transversely moving ship? Excuse me? Huh?” This is the most common reaction to this phrase. The essence of targeting is: what matters is the target’s movement compared to you. Anything moves directly towards or away from you in a straight line, the turrets can hit it more precisely, as they do not have to keep ‘turning’ to aim the target. Something that moves transversely to you means it is moving across your path, and not toward you or away from you.

- **Signature Resolution**

Like missiles, turrets suffer from a smaller enemy Signature Radius as well. The smaller the Signature Radius of the target, the smaller the area the gun’s power is being concentrated on. Guns compensate this by being tuned to a size. This tuning is called Signature Resolution. The most effective way to increase a target’s Signature Radius is to use a Target Painter. If the target acts bigger because of the target painter, he is much easier to hit.

The basic Signature Radius of frigates is 35 to 45, cruisers are 95 to 120 and battleships are around 400. According to this, the Signature Resolution of the Small Turrets is 40m, the Medium Turrets 100m and the Large Turrets 400m. So if the Signature Resolution of the weapon is bigger than the ship’s Signature Radius, the chance to hit will be smaller, and if the target’s Signature Radius is higher, you hit it with maximum damage (if it does not move faster than your Tracking Speed, that is). But, within your optimal range, you have a good chance of hitting big on a standing target.

For instance, if you shoot a frigate with a Tachyon Beam Laser, the weapon's 400 Signature Resolution rates to the ship 40m Signature Radius, which is 40/400 = 0.1 = 10% damage.

Naturally if this frigate is coming to you in a straight line using a MWD, as there is no transversal movement, and the MWD increases the signature radius of the frigate. The 10% is probably more than enough to kill the ship.

- **Damage Multiplier**

The basic damage of your ammo is multiplied by the Damage Multiplier of the turret used. The higher the multiplier, the more damage you do to your enemies.

For example: a 150mm Railgun (a Small Hybrid Turret) with a Damage Multiplier of 3.75 (modified by skills and modules) loaded with Thorium Charge S, whose basic Kinetic damage is five and basic Thermal damage is four, hits with 18.75 Kinetic (5 x 3.75) and 15 Thermal (4 x 3.75) damage.

- **Rate of Fire**

The Rate of Fire is the time between two shots (in seconds). It is inversely proportional to the size of the weapon, i.e. bigger guns fire slower than smaller ones. Naturally, damage will be higher in the first case (provided it is not affected by Signature Resolution).

- **Activation Cost**

Activation Cost is the capacitor amount required by a weapon in use. It is of great importance at Amarr and Gallentean ships and weapons.

- **Hit Quality**

Hit Quality is a hidden value. In practice, it modifies the damage when it hits.

- In Optimal Range: 0.5x to 1.5x
- In Falloff Range: 0.5x to 1.0x
- There is always a 1% chance for 300% (Wrecking) hit

The chance to hit is being reduced in Falloff Range, so it is certain that the average damage will be smaller than within Optimal Range.

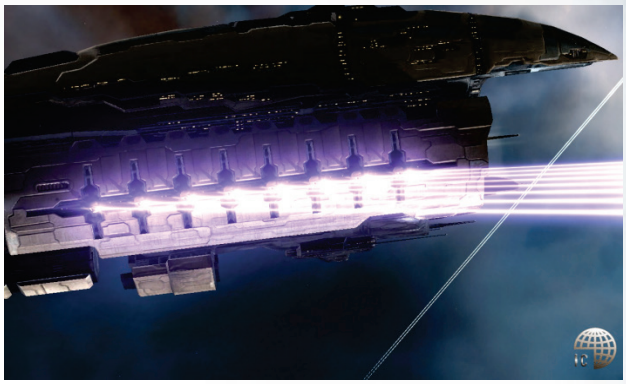
DPS & Range

All turrets have two types, rated by DPS and range:

- **Close-range turrets:** High DPS, Good Tracking, Low Alpha, Good ROF (Autocannons, Blasters, Pulse Lasers)
- **Long-range turrets:** Good DPS, Low Tracking, High Alpha, Moderate ROF (Artillery, Beam Lasers, Railguns)

Laser Turrets

Laser Turrets are mostly used by Amarr ships. Their first and foremost advantage is that (apart from the Faction and Tech II crystals), they do not need reserves. This means, if you load a plain, Tech I crystal, you can use it to the end of times for unlimited shots.



It is highly useful that you do not have to spend money on ammunition and it does not occupy room in your cargo bay. Its other advantage is that the crystals can be reloaded (or changed out for a different one) instantly, instead of the 10 seconds reloading time of other weapons.

The drawback of the Laser Turrets is its significant capacitor and power grid requirement. Ships that use lasers are highly sensitive to the effects of capacitor draining and neutralizing. It is no accident that most of the Amarr ships receive bonus for the weapons capacitor requirements (among others). That is why the Apocalypse BS has high PG and Cap values. The other disadvantage is that these weapons only deal EM and Thermal damages, so they are most effective against the shield, because the basic EM resistance of armor is 50%.

Laser Turrets can be divided in two main groups: Pulse Lasers, and Beam Lasers. Pulse lasers release energy in a series of quick bursts while beam lasers can operate 'continuously'. Pulse Lasers can be fitted on a ship more easily. Their capacitor requirement is smaller, but in return they have shorter range. Although their basic damage is not as good, it is compensated by the excellent ROF (it fires more quickly). Thus, the DPS is higher.

Beam Lasers fall in the bigger 'appetite' and bigger damage dealing category. Due to their lower tracking speed, the target can be missed, and then the longer range advantage is wasted. One miss can be a serious drawback, as these weapons also have a low ROF value, so not only is energy wasted, but precious time is lost as well.

There is one special type of laser weapon left: Tachyon Beam Lasers are one of the most effective non-capital sized weapons with very long range and high damage (but with weak tracking speed).

Tachyon Beam Lasers belong to the family of Large Beam Lasers, and it is a nightmare to fit them due to their very high Power Grid and Capacitor Power requirements, They have a weak ROF, but when they hit the target, the target feels it. ☺

Pulse Laser Turrets

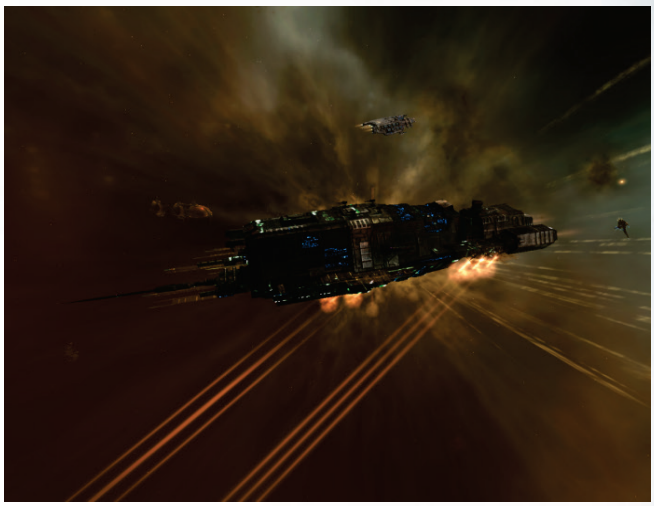
	Turret		Optimal Range	Falloff	ROF	Tracking	Damage Modifier
S		Dual Light Pulse Laser	4725m	2000m	2,7s	0,27375	2x
		Gatling Pulse Laser	4200m	1000m	2,1s	0,308125	1,5x
		Small Focused Pulse Laser I	5250m	2500m	3,5s	0,24625	3x
M		Focused Medium Pulse Laser	9450m	4000m	4,05s	0,09	2x
		Heavy Pulse Laser	10500m	5000m	5,25s	0,08125	3x
L		Dual Heavy Pulse Laser	18900m	8000m	6,075s	0,0375	2x
		Mega Pulse Laser	21000m	10000m	7,88s	0,03375	3x
		Dual Giga Pulse Laser	42000m	20000m	11,81s	0,004	8x

Beam Laser Turrets

	Turret		Optimal Range	Falloff	ROF	Tracking	Damage Modifier
S		Dual Light Beam Laser	9625m	2000m	4s	0,117	3x
		Small Focused Beam Laser	11000m	2500m	5s	0,09	4,5x
M		Focused Medium Beam Laser	17500m	6000m	4,8s	0,0378	2,5x
		Heavy Beam Laser	20000m	8000m	6s	0,0297	3,75x
		Quad Light Beam Laser	8000m	1000m	3,15s	0,0729	1,88x
L		Dual Heavy Beam Laser	35000m	12000m	7,2s	0,0175	2x
		Mega Beam Laser	40000m	16000m	9s	0,0153125	3x
		Tachyon Beam Laser	44000m	20000m	12,5s	0,0139205	4,5x
		Dual Giga Beam Laser	80000m	32000m	13,5s	0,002	5,5x

Projectile Turrets

Projectile Turrets are used by Minmatars, and can be divided in two main groups: Artillery and Autocannon. The main characteristic for both groups is that capacitor power is not required for their use.



Artillery has long range and high damage. Among the long range weapons, Artillery have the smallest Optimal Range, but the highest Falloff and Damage Multiplier.

Their disadvantages are their weak ROF and Tracking Speed. Artillery can be the favourite weapon of the 'hit and run' type player, as its 'alpha strike' is very high.

Autocannons are different than other guns. They have significantly small damage per round, but their Tracking Speed and ROF are excellent. The downside is that if you shoot fast, you have to reload more frequently, and that means 10 seconds of dead time in every reload. Common problem with Autocannons is that they fire so fast, that their pilots run out of ammo. The best gun is useless if it doesn't shoot.

The low capacitor requirement offers a huge advantage against other races, as an Amarr or a Gallentean ship becomes paralyzed without capacitor. Taking these characteristics of Projectile Turrets into consideration along with the variable damage type (by choosing the most appropriate ammo) makes Minmatar ships lethal opponents. Naturally the speed is also an important matter, since to survive a battle you need to avoid hits.

Artillery Turrets

	Turret		Optimal Range	Falloff	ROF	Tracking	Damage Modifier
S		250mm Light Artillery Cannon	8050m	8750m	8,5s	0,0825	4,62x
		280mm Howitzer Artillery	10000m	8750m	10,71s	0,066	6,403x
M		650mm (Medium) Artillery Cannon	16100m	17500m	11,47s	0,0261	4,62x
		720mm Howitzer Artillery	20000m	17500m	18,00s	0,0209	7,97x
L		1200mm (Heavy) Artillery Cannon	32200m	35000m	21,04s	0,01125	5,082x
		1400mm Howitzer Artillery	40000m	35000m	40,16s	0,009	10,672x
		Quad 3500mm Siege Artillery	72000m	70000m	35,44s	0,002	12,75x

Autocannon Turrets

	Turret		Optimal Range	Falloff	ROF	Tracking	Damage Modifier
S		125mm (Light) Gatling Autocannon	800m	4000m	3s	0,417	2,0625x
		150mm Light Autocannon	900m	4400m	3,38s	0,362	2,475x
		200mm (Light) Autocannon	1000m	4800m	3,75s	0,315	2,8875x
M		220mm (Medium) Vulcan Autocannon	1800m	8800m	4,72s	0,12144	2,31x
		425mm (Medium) Autocannon	2000m	9600m	5,62s	0,1056	2,8875x
		Dual 180mm Autocannon	1600m	8000m	4,5s	0,13965	2,0625x
L		800mm (Heavy) Repeating Artillery	4000m	19200m	7,88s	0,0432	2,695x
		Dual 425mm Autocannon	3200m	16000m	6,75s	0,05713	2,0625x
		Dual 650mm Repeating Artillery	3600m	17600m	7,5s	0,04968	2,444x
		6x2500mm Repeating Artillery	25000m	28800m	9,45s	0,004	5,8x

Hybrid Turrets

Hybrid Turrets typically serve on Gallente and Caldari ships. Generally, Gallente are specialized in Blasters whereas Caldari favour Railguns, but it certainly is not a rule.

The main difference between the two types of weaponry is that Blasters are close range weapons, while Railguns are best against targets at long range.

Blasters bear the most 'raw' DPS. They have a rather high Damage Multiplier, good Rate of Fire, but only moderate Tracking Speed. The true disadvantage of the weapon is the small range, so have to get close to the enemy. This requires either an AB or MWD as a solution to the problem of distance.

Using Railguns is another way that can be chosen. They are very popular in Fleet Battles. Although their DPS and Alpha strikes are behind that of Artillery Turrets, their Optimal Range and Tracking Speed exceed them.

Keep in mind the significant weakness of the Gallentean weapons and ships; their power requirements are huge. The ships do not have the same amount of capacitor as the Amarr do and the bonus reducing the energy requirement of the weapons is not available. So if you use Blasters and MWD together, do not forget to ensure a sufficient energy supply or you can only wave to your enemies, because you will not able to hurt them.

Blaster Turrets

	Turret		Optimal Range	Falloff	ROF	Tracking	Damage Modifier
S		Light Electron Blaster	1000m	1500m	2s	0,438	1,8375x
		Light Ion Blaster	1250m	2000m	3s	0,4032	2,9531x
		Light Neutron Blaster	1500m	2500m	3,5s	0,3798	3,675x
M		Heavy Electron Blaster	2000m	3000m	3s	0,144	1,8375x
		Heavy Ion Blaster	2500m	4000m	4,5s	0,132	2,9531x
		Heavy Neutron Blaster	3000m	5000m	5,25s	0,12	3,675x
L		Electron Blaster Cannon	4000m	6000m	4,5s	0,06	1,8375x
		Ion Blaster Cannon	5000m	8000m	6,75s	0,0552	2,9531x
		Neutron Blaster Cannon	6000m	10000m	7,88s	0,05196	3,675x
		Ion Siege Blaster Cannon	20000m	25000m	10,63s	0,004	7,92x

Railgun Turrets

	Turret		Optimal Range	Falloff	ROF	Tracking	Damage Modifier
S		75mm Gatling Rail	6000m	3000m	2,6s	0,1365	1,65x
		125mm Railgun	9000m	5000m	3,25s	0,08925	2,2x
		150mm Railgun	12000m	6000m	4,25s	0,0735	3,025x
M		200mm Railgun	18000m	10000m	4,14s	0,025	2,53x
		250mm Railgun	24000m	12000m	5,42s	0,0205	3,48x
		Dual 150mm Railgun	12000m	6000m	3,31s	0,0375	1,9x
L		350mm Railgun	36000m	20000m	7,31s	0,01225	2,2x
		425mm Railgun	48000m	24000m	9,56s	0,010106	3,025x
		Dual 250mm Railgun	24000m	12000m	5,85s	0,01837	1,65x
		Dual 1000mm Railgun	96000m	24000m	14,35s	0,002	5,8x

Tier Vs. Meta Level

Meta level:

Generally speaking, the higher the Meta level of a given weapon, the higher its damage level is and easier is to fit (CPU, PG; in the given weapon type). Tech II equipment requires more resources.

This means higher Skill, CPU, PG and / or cap requirements or their combination.

TYPE NAME	META GROUP	ACTIVATION COST	POWERGRID USAGE	ACCURACY FALLOFF	CPU USAGE	RATE OF FIRE	DAMAGE MODIFIER	OPTIMAL RANGE	META LEVEL
Tachyon Beam Laser I	Tech I	95 GJ	3,750 MW	20.0 km	60 tf	12.50 s	4.5 x	44.0 km	0
Tachyon Afocal Maser I	Tech I	90.25 GJ	3,750 MW	20.0 km	54 tf	12.50 s	4.725 x	46.2 km	1
Tachyon Modal Laser I	Tech I	85.5 GJ	3,750 MW	20.0 km	51 tf	12.50 s	4.95 x	48.4 km	2
Tachyon Anode Particle Stream I	Tech I	80.75 GJ	3,750 MW	20.0 km	57 tf	12.50 s	5.175 x	50.6 km	3
Tachyon Modulated Energy Beam I	Tech I	76 GJ	3,750 MW	20.0 km	48 tf	12.50 s	5.4 x	52.8 km	4
Tachyon Beam Laser II	Tech II	95 GJ	4,125 MW	20.0 km	63 tf	12.50 s	5.4 x	52.8 km	5
'Ballista' Tachyon Beam Laser I	Storyline	95 GJ	3,375 MW	24.0 km	48 tf	12.50 s	5.4 x	44.0 km	6
Ammatar Navy Tachyon Beam Laser	Faction	71.25 GJ	4,125 MW	20.0 km	48 tf	12.50 s	5.625 x	52.8 km	8
Dark Blood Tachyon Beam Laser	Faction	71.25 GJ	4,125 MW	20.0 km	48 tf	12.50 s	5.625 x	52.8 km	8
Imperial Navy Tachyon Beam Laser	Faction	71.25 GJ	4,125 MW	20.0 km	48 tf	12.50 s	5.625 x	52.8 km	8
True Sansha Tachyon Beam Laser	Faction	71.25 GJ	4,125 MW	20.0 km	48 tf	12.50 s	5.625 x	52.8 km	8
Raysere's Modified Tachyon Beam Laser	Officer	71.25 GJ	4,125 MW	20.0 km	48 tf	12.50 s	6.1875 x	52.8 km	12
Selynne's Modified Tachyon Beam Laser	Officer	71.25 GJ	4,125 MW	20.0 km	48 tf	12.50 s	6.1875 x	52.8 km	12
Chelm's Modified Tachyon Beam Laser	Officer	76 GJ	4,125 MW	20.0 km	48 tf	12.50 s	6.75 x	52.8 km	13
Draclira's Modified Tachyon Beam Laser	Officer	76 GJ	4,125 MW	20.0 km	48 tf	12.50 s	6.75 x	52.8 km	13
Luther Veron's Modified Tachyon Beam Laser	Storyline	74 GJ	4,000 MW	20.0 km	44 tf	12.50 s	6.75 x	52.8 km	14

Tier:

There are Tier-categories in a given size of weapon. Their characteristics are damage, range and the required resources increase in Tier levels, whereas Tracking Speed, ROF and ammo capacity decrease. (Ammo capacity does not concern lasers.)

For instance, in the case of Pulse Lasers:

	Small Pulse	Medium Pulse	Large Pulse
Tier 1	Dual Light	Focused Medium	Dual Heavy
Tier 2	Gatling Pulse	Heavy Pulse	Mega Pulse
Tier 3	Medium Pulse	-	-

The SmartBomb

A Smartbomb is an energy-discharge around your ship. Any object (not target) within the range of the Smartbomb takes the damage, friend or foe. This leads to three significant dangers:

- In high-sec, you can hit something you really should not. Then comes CONCORD and you are doomed.
- You can destroy your own drones.
- Does not spare even your corp members.

Of course, it has significant advantages as well:

- No need to target anyone, so the hostile EW modules do not bother you.
- It can destroy incoming missiles.
- It affects everything within range, so dozens of targets can be destroyed at the same time.

Due to nature of the weapon, it has a massive energy requirement, so use it with caution. The higher Meta level (named, faction, officer, Tech II) versions have longer ranges and higher damage levels.

Smartbombs are available in	
All four damage types:	**And sizes:**
EMP: EM damage	**Micro**: 2000m range, 25 damage
Plasma: Thermal damage	**Small**: 3000m range, 50 damage
Graviton: Kinetic damage	**Medium**: 4000m range, 100 damage
Proton: Explosive damage	**Large**: 5000m range, 250 damage

Required / Recommended Modules

	Name	Effect	Active / Passive
	Target Painter	A targeting subsystem that projects an electronic "Tag" on the target thus making it easier to target and Hit. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Active
	Heat Sink	Dissipates energy weapon damage efficiently, thus allowing them to be fired more rapidly. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Passive
	Gyrostabilizer	Gives a bonus to the speed and damage of projectile turrets. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Passive
	Magnetic Field Stabilizer	Grants a bonus to the firing rate and damage of hybrid turrets. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Passive
	Tracking Computer	By predicting the trajectory of targets, it helps to boost the tracking speed and range of turrets. This module can be loaded with scripts to increase its effectiveness in certain areas. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Active
	Tracking Enhancer	Enhances the range and improves the tracking speed of turrets. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Passive

Required / Recommended Skills

Every, turret based weapon skill belongs to the 'Gunnery' skill group. The Gunnery skill itself provides 2% ROF bonus to all weapons. There are size specific skills (small, medium, large and capital), that give 5% bonus to the given size of weapon. (Medium Hybrid Turret skill gives 5% damage bonus, if you use Medium Railgun or Blaster.) The size naturally determines the size of ships which the weapon was designed to fight:

- **Small**: Frigate
- **Medium**: Cruiser
- **Large**: Battleship
- **Capital**: Capital

Naturally, you can 'underfit' your ship, or put smaller weapons on larger hulls, but you may lose the bonuses afforded by the ship, but you may gain an advantage against smaller targets.

Name	Rank	Suggested Min. Level	Effect	Note
Controlled Bursts	2	4	Allows better control over the capacitor use of weapon turrets. 5% reduction in capacitor need of weapon turrets per skill level.	Essential skill for Lasers and Hybrid weapons
Motion Prediction	2	4	Improved ability at hitting moving targets. 5% bonus per skill level to weapon turret tracking speeds.	For All Turrets
Rapid Firing	2	4	Skill at the rapid discharge of weapon turrets. 4% bonus per skill level to weapon turret rate of fire.	For All Turrets
Sharpshooter	2	5	Skill at long-range weapon turret firing. 5% bonus to weapon turret optimal range per skill level.	For All Turrets
Surgical Strike	4	4	Knowledge of spaceships' structural weaknesses. 3% bonus per skill level to the damage of all weapon turrets.	For All Turrets
Trajectory Analysis	5	4	Advanced understanding of zero-G physics. 5% bonus per skill level to weapon turret accuracy falloff.	For All Turrets
XY Specialization	8	4	Specialist training in the operation of advanced turrets. 2% Bonus per skill level to the damage of turrets requiring XY Specialization	Only for Tech II Turrets
Weapon Upgrades	2	5	Knowledge of gunnery computer systems, including the use of weapon upgrade modules. 5% reduction per skill level in the CPU needs of weapon turrets, launchers and smartbombs.	For All Weapons
Advanced Weapon Upgrades	6	4	Reduces the powergrid needs of weapon turrets and launchers by 2% per skill level.	For All Launchers And Turrets

Ammunition

Turrets are not much without ammunition. Ammo is the heart of your weapons. They can be divided in 12 groups, according to size (small, medium, large and extra-large) and type (laser, hybrid and projectile). Every group has a short-range and long-range type. Every ammo has 10 types (eight Tech I + two Tech II), which in most cases differ not only in range bonus but in damage level as well. For instance, the Antimatter Hybrid ammunition has -50% range bonus, while Iron Charges provides a 60% bonus.

Hybrid Ammo: The basic damage type of hybrid weapons is Thermal and Kinetic. The rate, level and range bonus are determined by the given type of ammo. Laser Crystals, like Hybrid Charges, have two types of damage: Thermal and Electromagnetic (EM).

Laser Crystal: Their main advantage is (apart from Tech II and Faction crystals) that crystals are not damaged, so you do not have to carry more than one of each per turret. Naturally, be prepared for different ranges, to avoid surprises, and swap out the crystals for the situation. Another great advantage is their non-existent reloading time, as compared to the 10 seconds dead time of other weapons.

Combat (laser) crystals and mining crystals in EVE Online may receive "damage" and eventually be consumed (or in common terms, *shatter*). These crystals have a Hit Point value, and shattering occurs when enough damage is taken by the crystal to lower its hit points to zero. The life expectancy of a given crystal, i.e. the average amount of time it may be used before it shatters, may be calculated from the following attributes:

- **Volatility (Red mark)**: This attribute is the chance of the crystal taking damage upon every activation cycle. For example, a Volatility of 10% would mean that each activation cycle the crystal has a 10% (1 in 10) chance of receiving damage. The actual amount of damage is fixed, and is given by the **Volatility Damage** attribute.
- **Volatility Damage (Blue mark)**: This is the actual amount of damage the crystal may receive during an activation cycle based upon its Volatility.
- **Structure Hitpoints (Green mark)**: This is the total Hit Points of the crystal.
- **Damage (Yellow mark)**: The current damage of the crystal.

One may then multiply the expected cycles by the cycle time to calculate a crystal's life expectancy over time. Remember that Volatility is a percentage, so for example, a crystal with a Volatility of 10% must use the value 0.10 in the equation.

Life Expectancy (in cycles) = Structure Hitpoints / Volatility / Volatility Damage.

This means that, on the average, the crystal has a life expectancy of 1 / 0.10 / 0.01 = 1000 cycles.

Projectile charges: have a significant advantage: they are able to different damage types, up to three different kinds! It is useful to learn them, as even lower damage level ammo can hit more if the target has lower resistance for that certain type of damage. Do not forget the golden rule of projectile weapons: always have spare ammunition in your cargo bay, especially in the case of Autocannons.

Tech II Ammunition

Tech II ammunition needs a special approach, as aside from that they can be used only in Tech II weapons, they also have significant drawbacks. There are two types of Tech II charges for every weapon. The characteristic of these two groups is that one of them has a longer range bonus, while the other one emphasizes damage.

Weapon	Type	Name	Special attribute
Laser	Beam	Aurora	x0,25 Tracking Speed (Yes, it's a negative "bonus")
		Gleam	x1,25 Tracking Speed, -75% Optimal Range
	Pulse	Conflagration	x0,70 Tracking Speed, +25% Capacitor Use
		Scorch	x0,75 Tracking Speed, +40% Optimal Range
Projectile	Artillery	Quake	x1,25 Tracking Speed, -75% Optimal Range
		Tremor	x0,25 Tracking Speed
	Autocannon	Barrage	x0,75 Tracking Speed
		Hail	x0,70 Tracking Speed
Hybrid	Blaster	Null	x0,75 Tracking Speed
		Void	x0,75 Tracking Speed, +25% Capacitor Use
	Railgun	Javelin	x1,25 Tracking Speed, -75% Optimal Range
		Spike	x0,25 Tracking Speed

Frequency Crystals

Size				Name	Damage Type		Range: Optimal / Falloff	Cap	Total Damage
Small	Medium	Large	Extra Large		Thermal	EM			
				Radio	0	5	+60,00% ±0%	-15%	5
				Microwave	2	4	+40,00% ±0%	-25%	6
				Infrared	2	5	+20,00% ±0%	-35%	7
				Standard	3	5	±0% ±0%	-45%	8
				Ultraviolet	3	6	-12,50% ±0%	-35%	9
				Xray	4	6	-25,00% ±0%	-25%	10
				Gamma	4	7	-37,50% ±0%	-15%	11
				Multifrequency	5	7	-50,00% ±0%	±0%	12
Tech II Beam Laser Crystals									
				Gleam	7	7	-75,00% ±0%	±0%	14
				Aurora	3	5	80,00% ±0%	±0%	8
Tech II Pulse Laser Crystals									
				Scorch	2	9	40,00% ±0%	±0%	11
				Conflagration	7,7	7,7	-50,00% ±0%	+25%	15,4
Damage X1	Damage X2	Damage X4	Damage X8	Size Modifier					

Projectile Charges

Size				Name	Damage Type				Range Optimal Falloff	Total Damage
Small	Medium	Large	Extra Large		Explosive	Kinetic	Thermal	EM		
				Carbonized Lead	1	4	-	-	60% ±0%	5
				Nuclear	4	1	-	-	60% ±0%	5
				Proton	-	2	-	3	60% ±0%	5
				Depleted Uranium	3	2	3	-	±0% ±0%	8
				Titanium Sabot	2	6	-	-	±0% ±0%	8
				Fusion	10	2	-	-	-50% ±0%	12
				Phased Plasma	-	2	10	-	-50% ±0%	12
				EMP	2	1	-	9	-50% ±0%	12
Tech II Artillery Charges										
				Quake	9	5	-	-	-75% ±0%	14
				Tremor	5	3	-	-	80% ±0%	8
Tech 2 Autocannon Charges										
				Hail	12,1	3,3	-	-	-50% -25%	15,4
				Barrage	6	5	-	-	±0% +50%	11
Damage X1	Damage X2	Damage X4	Damage X8	Size Modifier						

Hybrid Charges

Size				Name	Damage Type		Range	Cap	Total Damage
Small	Medium	Large	Extra Large		Kinetic	Thermal			
				Iron	3	2	60% ±0%	-30%	5
				Tungsten	4	2	40% ±0%	-27%	6
				Iridium	4	3	20% ±0%	-24%	7
				Lead	5	3	±0% ±0%	-50%	8
				Thorium	5	4	-12,5% ±0%	-40%	9
				Uranium	6	4	-25,% ±0%	-8%	10
				Plutonium	6	5	-37,5% ±0%	-5%	11
				Antimatter	7	5	-50% ±0%	±0%	12

Tech II Blaster Charges

				Null	5	6	+40% +40%	±0%	11
				Void	7,7	7,7	-25% -50%	-25%	15,4

Tech II Railgun Charges

				Javelin	6	8	-75% ±0%	±0%	14
				Spike	4	4	80% ±0%	±0%	8

Damage X1	Damage X2	Damage X4	Damage X8	Size Modifier

Polarized Weapons

The Polarized weapons have their stats based on the Tech II version (for instance Polarized 200mm AutoCannon is based on 200mm AutoCannon II), with the following adjustments:

- Damage Multiplier is the same (this is to reduce their effectiveness as gank weapons)
- Rate of Fire is +20% (i.e. they should 20% faster, resulting in ca. +25% damage)
- Tracking speed is +15%
- Range and Falloff is -20% (you need to get up close and personal to your target)
- Cap Use is -25% (mostly to accommodate the increased RoF)
- Fitting (CPU and Power Grid requirements) is approximately -10%
- Capacity for the ones requiring charges is +200% (i.e. you can fit three times as much ammo/missiles)
- The modules are Tech II, meta-level 9 modules. They thus have the same skill requirements as Tech II, but they also benefit from the specialization skills. They require their Tech II counterpart to manufacture
- The price of those weapons should make them not a feasible choice for suicide ganking but only just so, so that their price does not dictate their use too much. This will likely require some future adjustments to drop rate and bill of materials
- They have the Sleeper's shader to distinguish them visually
- And to restate, when fitted all resistance are set to 0 and can’t be raisedby other means

Attack Of The Drones

There is nothing better than watching your small fleet of drones kill anyone who wanders in your way, but your drones (miniature, remote-controlled spaceships) need a few things to be efficient; a good grounding of skills, a drone-specialized ship, some special equipment and, of course, the drones themselves.

The most important thing that should never be forgotten is that **these small beasties are like children; small, annoying and destructive and most of the time won't pay any attention to your commands.** ٩(๏̯๏)۶ ٩(●̃̾•)۶٩(●̃̾•)۶

Perhaps the last statement is the most valid, as your drones, regardless of their settings, can attack a totally different target than the one you commanded them to.

You must have at least one drone in your drone bay to access the Drone Settings menu. For that, click on the 4 lined box, just underneath the Overview window. There, you can set your drones to be either passive or aggressive.

In the first case, they only attack if you commend them. While it may seem that aggressive mode is more comfortable, as all you have to do is wait for the enemy to attack you and your drones finish him off automatically, that's only true in theory. In practice, in many cases, it is not most dangerous opponent that attacks you, but the drones will still attack the first aggressor regardless of his strength. They can also accidentally trigger whole spawns of NPCs in missions, so be careful!

Focus Fire is the most useful option. All five drones on a target is far more effective than one drone each on five targets.

Organising Drones

It is important to see which drones are in your drone bay, and which are released. 'Drones in Bay' means those that are still inside the bay. 'Drones in Local Space' means those that currently flying.

Fighter drones can also be 'Drones in Local Space', but they can also be found in 'Drones in Distant Space' if they have been assigned to other players.

It is important to organize your drones and release the proper ones, which is not possible if they are loose in your 'Drones in Bay' list. You can create groups, and navigate those groups accordingly. It makes it easier to launch them or give them a specific order in space. For that, right-click on your selected drone and you can:

- Put it in a new group, by choosing 'New Group'.
- Remove it from a certain group , using the 'Out of this Group' option.
- Move it to an already existing group.

Ranges					
	Base Range	**20km**		**Drone Link Augmentor I**	**20km / module**
	Drone Avionics	**5km / skill level**		**Drone Link Augmentor II**	**24km / module**
	Advanced Drone Avionics	**3km / skill level**			

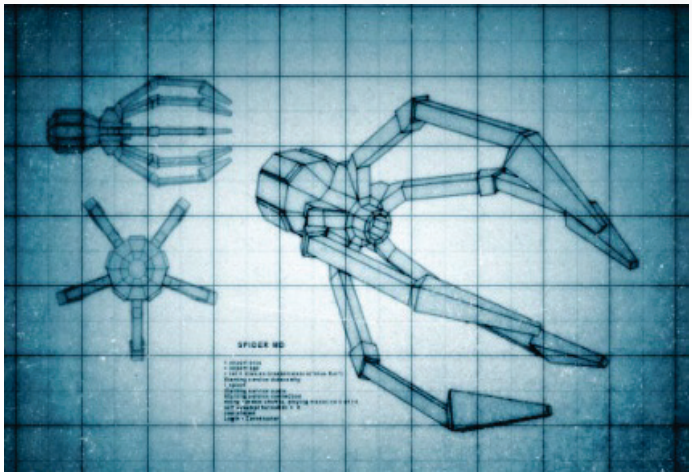
You can use the 'Launch Drones' command on any drones or drone groups in your drone bay to launch them into the space. If you use it on a single drone, you will launch it specifically. If you use the command on a group header, you will launch the whole group.

Of course, the maximum amount of drones in space is limited by your skills and by the drone bandwidth of your ship. If the group is larger than the number of drones that you can command, only the first drones will launch, until the limit is reached. When your drones are in space, you are able to see their structure, armor and shield hitpoints bars and you can also issue commands to them.

- **Collapse:** closes the open menu.
- **Engage Target (x):** Your drones will attack your currently SELECTED target. The (x) stands for the amount of drones involved.
- **Return and Orbit:** Orders your drones to return to your side and orbit the ship; they do not dock.
- **Return to Drone Bay:** Orders your drones to return and dock.
- **Scoop to Drone Bay:** If they are close enough, you can scoop your (or anyone else's) drones to your drone bay if there is enough space. You can use drones you have stolen this way.
- **Abaddon Drone (x):** You can stop controlling your drones and 'throw them away'. The drones will cease fire and stop. This could be useful if you had mining drones out, but were suddenly attacked. Instead of waiting for the mining drones to return, abandon them and launch the combat drones right away.

Mining drones do not have attack commands, but have two other options instead:

- **Mine:** The drone mines the target asteroid until its cargo hold is filled with ore. It will do this only once.
- **Mine Repeatedly:** The drone mines the target asteroid, when its cargo is full it brings the ore to your hold then returns to mining.



Very important: The area affect weapons (smartbombs and bombs) also affect drones, even if they are yours!

EW, Combat Utility And Logistic Drones

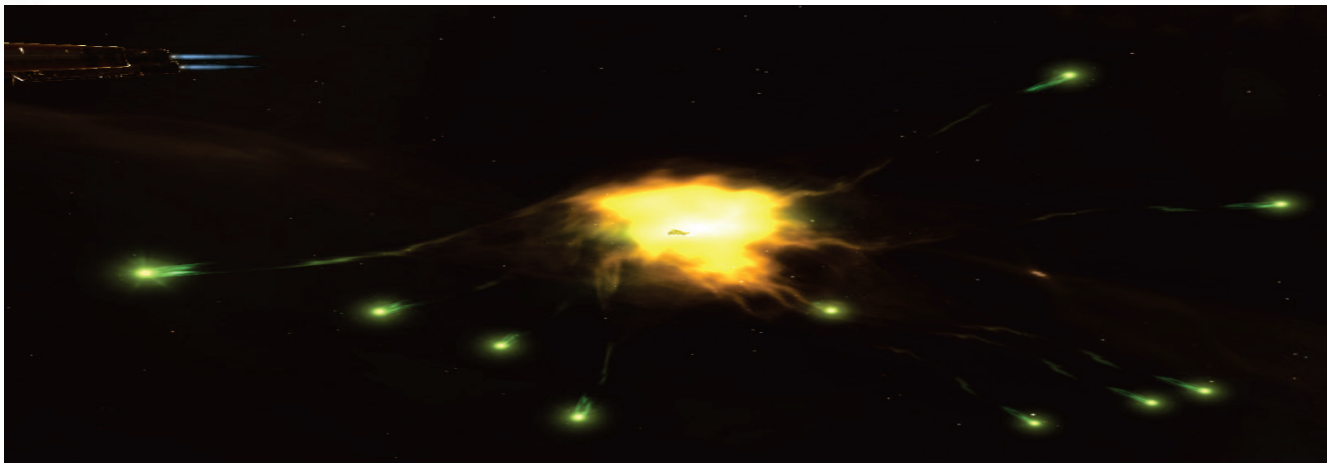
There is no mention of electronic or combat utility drones yet. While many of these are best for PvP only, the logistics drones are excellent in team combat of larger challenges, and the target painter/stasis webifier drones can be a better usage for a drone bay than that of just using medium or a couple of heavy drones.

An excellent example is the maelstrom with 1400mm howitzers. Without the drone damage bonus, cruisers and Battlecruisers took a bit of time to kill when they were higher bounty with medium drones. With only 100 m^3 drone bay, one cannot fit the required light scout drones and a viable flight of combat heavies or sentries. What I did instead was try using two of the berserker SW-900 drones with a Berserker TP-900. The ability to hit the targets at close range was absolutely amazing.

The signature size increase and speed decrease allows me to speed flank targets and hit even at ranges of 10km. This was made even more apparent in missions where the enemy might start or spawn in close (as with Worlds Collide or Angels' missions).

The results was that while the drones did less damage, the increase in the ability to use the massive guns on the ship resulted in much faster mission completion times (thanks to R. Jacob for that tip).

Don't forget the Logistic drones, they can be very useful in tight situations, when you need armor and/or shield and your friend is in a drone ship and has a few of them.

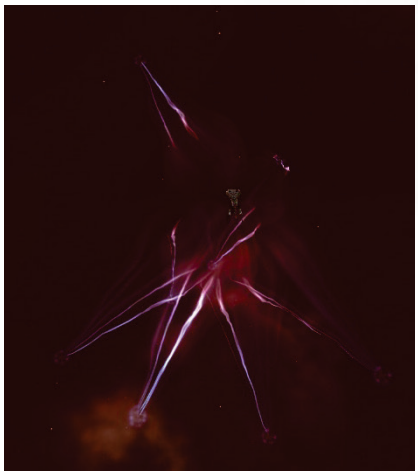


Traits Of Drones

There are a few things common to each and every drone:

- Regardless of drone type and Tech levels:
    - They have 0% EM, 60% Explosive, 40% Kinetic, and 20% Thermal shield resistances.
    - They have 60% EM, 10% Explosive, 25% Kinetic, and 45% Thermal armor resistances.
- They can have eight targets maximum.
- Except fighters (and fighter bombers) their Rate of Fire is four seconds.
- You can only control five drones maximum at the same time. Carriers and supercarriers can launch more (up to ten).
- When you are disconnected from the server, an 'attempt to return to dronebay' command is issued to the drones you control, at the same time as the command to warp away is issued. As always, the success of drones returning to your drone bay depends upon their distance from your ship and the speed with which it enters warp.
- All ships can now use the 'Reconnect to lost drones' command.

The amount of drones you can control is limited by your drone bandwidth and, in the case of carriers, supercarriers and the Guardian or Vexor, by your ship bonuses.



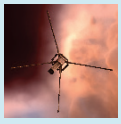
The sum of bandwidth requirement of your active drones must be less than or equal to the drone bandwidth of your ship.

The following tables will list the basic attributes of your drones. They do not include any ship or skill bonuses. Tech II drones can become significantly more powerful given the proper skills.

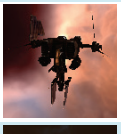
Drone Types

Name		Base Damage	Multiplier	ROF	Damage Type	Shield/Armor	Orbit Velocity	Max. Speed	Damage	DPS
Light Scout Drones										
Hobgoblin		20	1,4x	4s	Thermal	50/90	660 m/s	2800 m/s	**28**	**7**
Hobgoblin II		20	1,92x	4s	Thermal	60/108	660 m/s	3360 m/s	**38,4**	**9,6**
Hornet		20	1,5x	4s	Kinetic	180/70	745 m/s	3150 m/s	**30**	**7,5**
Hornet II		20	1,8x	4s	Kinetic	216/84	894 m/s	3780 m/s	**36**	**9**
Warrior		20	1,3x	4s	Explosive	100/90	900 m/s	4200 m/s	**26**	**6,5**
Warrior II		20	1,56x	4s	Explosive	120/108	900 m/s	5040 m/s	**31,2**	**7,8**
Acolyte		20	1,4x	4s	EM	40/190	830 m/s	3850 m/s	**28**	**7**
Acolyte II		20	1,88x	4s	EM	48/228	996 m/s	4620 m/s	**37,6**	**9,4**
Medium Drones										
Hammerhead		32	1,6x	4s	Thermal	100/180	440 m/s	1680 m/s	**51,2**	**12,8**
Hammerhead II		32	1,92x	4s	Thermal	120/216	528 m/s	2016 m/s	**61,44**	**15,36**
Vespa		32	1,5x	4s	Kinetic	360/140	470 m/s	1890 m/s	**48**	**12**
Vespa II		32	1,8x	4s	Kinetic	432/168	564 m/s	2268 m/s	**57,6**	**14,4**
Valkyrie		32	1,3x	4s	Explosive	200/180	550 m/s	2500 m/s	**41,6**	**10,4**
Valkyrie II		32	1,56x	4s	Explosive	240/216	660 m/s	3000 m/s	**49,92**	**12,48**
Infiltrator		32	1,4x	4s	EM	80/380	525 m/s	2300 m/s	**44,8**	**11,2**
Infiltrator II		32	1,68x	4s	EM	96/456	630 m/s	2760 m/s	**53,76**	**13,44**
Heavy Drones										
Ogre		64	1,6x	4s	Thermal	200/360	250 m/s	1000 m/s	**102,4**	**25,6**
Ogre II		64	1,92x	4s	Thermal	240/432	300 m/s	1200 m/s	**122,88**	**30,72**
Wasp		64	1,5x	4s	Kinetic	720/280	280 m/s	1125 m/s	**96**	**24**
Wasp II		64	1,8x	4s	Kinetic	864/336	336 m/s	1350 m/s	**115,2**	**28,8**
Berserker		64	1,3x	4s	Explosive	400/360	350 m/s	1500 m/s	**83,2**	**20,8**
Berserker II		64	1,56x	4s	Explosive	480/432	420 m/s	1800 m/s	**99,84**	**24,96**
Praetor		64	1,4x	4s	EM	160/760	320 m/s	1380 m/s	**89,6**	**22,4**
Praetor II		64	1,68x	4s	EM	192/912	384 m/s	1656 m/s	**107,52**	**26,88**

Sentry Drones, Fighters And Fighter Bombes

Name		Base Damage	Multiplier	ROF	Damage Type	Shield/Armor	Orbit Velocity	Mas. Speed	Damage	DPS
Sentry Drones										
Garde		64	1,7x	4s	**Thermal**	600/800	-	-	**108,8**	**27,2**
Garde II		64	1,7x	4s	**Thermal**	720/960	-	-	**108,8**	**27,2**
Warden		64	1,4x	4s	**Kinetic**	960/450	-	-	**89,6**	**22,4**
Warden II		64	1,4x	4s	**Kinetic**	1152/540	-	-	**89,6**	**22,4**
Bouncer		64	1,5x	4s	**Explosive**	800/600	-	-	**96**	**24**
Bouncer II		64	1,5x	4s	**Explosive**	960/720	-	-	**96**	**24**
Curator		64	1,6x	4s	**EM**	450/960	-	-	**102,4**	**25,6**
Curator II		64	1,6x	4s	**EM**	540/1152	-	-	**102,4**	**25,6**
Fighters										
Firbolg		15/35	3,5x	5,25s	**Kin/Therm**	2500/3000	280 m/s	2250 m/s	**175**	**33,3**
DragonFly		35/15	4,25x	6,38s	**Kin/Therm**	3000/2700	225 m/s	2000 m/s	**212,5**	**33,3**
Einherji		35/15	2,5x	3,75s	**Exp/Kin**	2750/3250	300 m/s	2500 m/s	**125**	**33,3**
Templar		35/15	4x	6s	**EM/Therm**	2250/3750	250 m/s	2125 m/s	**200**	**33,3**

Fighter Bombers

Name		Base Damage	Weapon	ROF	Damage Type	Shield/Armor	Orbit Velocity	Mas. Speed	Damage	DPS
Cyclops		1400	Compact Purgatory Torpedo I	15s	**Therm**	5000/6000	196 m/s	1575 m/s	1400	93,3
Mantis		1400	Compact Rift Torpedo I	15s	**Kinetic**	6000/5500	158 m/s	1400 m/s	1400	93,3
Tyrfing		1400	Compact Doom Torpedo I	15s	**Explosive**	5500/6500	210 m/s	1750 m/s	1400	93,3
Malleus		1400	Compact Thor Torpedo I	15s	**EM**	4500/7500	175 m/s	1485 m/s	1400	93,3

Class		Name	Type	Orbit Velocity	Bandwith	Spec. Attribute	Cycle Time
Electronic Warfare Drones		**Acolyte TD-300**	Light Tracking Disruptor Drone	350 m/s	5 Mbit/s	Tracking Speed / Falloff / Optimal Multiplier: 0.95x	5 sec
		Infiltrator TD-600	Medium Tracking Disruptor Drone	300 m/s	10 Mbit/s	Tracking Speed / Falloff / Optimal Multiplier: 0.88x	5 sec
		Praetor TD-900	Heavy Tracking Disruptor Drone	250 m/s	25 Mbit/s	Tracking Speed / Falloff / Optimal Multiplier: 0.75x	5 sec
		Warrior TP-300	Light Target Painter Drone	350 m/s	5 Mbit/s	Signature Radius Bonus: 4%	5 sec
		Valkyrie TP-600	Medium Target Painter Drone	300 m/s	10 Mbit/s	Signature Radius Bonus: 8%	5 sec
		Berserker TP-900	Heavy Target Painter Drone	250 m/s	25 Mbit/s	Signature Radius Bonus: 20%	5 sec
		Hobgoblin SD-300	Light Sensor Dampener Drone	350 m/s	5 Mbit/s	Scan. Res. / Optimal Range Bonus: 8%	5 sec
		Hammerhead SD-600	Medium Sensor Dampener Drone	300 m/s	10 Mbit/s	Scan. Res. / Optimal Range Bonus: 12%	5 sec
		Ogre SD-900	Heavy Sensor Dampener Drone	250 m/s	25 Mbit/s	Scan. Res. / Optimal Range Bonus: 25%	5 sec
		Hornet EC-300	Light ECM Drone	350 m/s	5 Mbit/s	ECM Strength: 1	20 sec
		Vespa EC-600	Medium ECM Drone	300 m/s	10 Mbit/s	ECM Strength: 1,5	20 sec
		Wasp EC-900	Heavy ECM Drone	250 m/s	25 Mbit/s	ECM Strength: 2	20 sec

Class	Name	Type	Orbit Velocity	Bandwith	Spec. Attribute	Cycle Time
Logistic Drones	Light Shield Main. Bot I	Shield Maintenance Drone	350 m/s	5 Mbit/s	Shield Bonus: 12 HP	5 sec
	Light Shield Main. Bot II		420 m/s		Shield Bonus: 14,4 HP	5 sec
	Medium Shield Main. Bot I		300 m/s	10 Mbit/s	Shield Bonus: 24 HP	5 sec
	Medium Shield Main. Bot II		360 m/s		Shield Bonus: 28,8 HP	5 sec
	Heavy Shield Main. Bot I		250 m/s	25 Mbit/s	Shield Bonus: 60 HP	5 sec
	Heavy Shield Main. Bot II		300 m/s		Shield Bonus: 72 HP	5 sec
	Light Armor Main. Bot I	Armor Maintenance Drone	350 m/s	5 Mbit/s	Armor Repaired: 12 HP	5 sec
	Light Armor Main. Bot II		420 m/s		Armor Repaired: 14 HP	5 sec
	Medium Armor Main. Bot I		300 m/s	10 Mbit/s	Armor Repaired: 24 HP	5 sec
	Medium Armor Main. Bot II		360 m/s		Armor Repaired: 28 HP	5 sec
	Heavy Armor Main. Bot I		250 m/s	25 Mbit/s	Armor Repaired: 60 HP	5 sec
	Heavy Armor Main. Bot II		300 m/s		Armor Repaired: 72 HP	5 sec
	Light Hull Main. Bot I	Hull Maintenance Drone	350 m/s	5 Mbit/s	Structure Repaired: 6 HP	5 sec
	Light Hull Main. Bot II		420 m/s		Structure Repaired: 7 HP	5 sec
	Medium Hull Main. Bot I		300 m/s	10 Mbit/s	Structure Repaired: 12 HP	5 sec
	Medium Hull Main. Bot II		360 m/s		Structure Repaired: 16 HP	5 sec
	Heavy Hull Main. Bot I		250 m/s	25 Mbit/s	Structure Repaired: 30 HP	5 sec
	Heavy Hull Main. Bot II		300 m/s		Structure Repaired: 36 HP	5 sec
Combat Utility Drones	Warrior SW-300	Light Webifier Drone	350 m/s	5 Mbit/s	Max. Velocity Bonus: -5%	5 sec
	Valkyrie SW-600	Medium Webifier Drone	300 m/s	10 Mbit/s	Max. Velocity Bonus: -10%	5 sec
	Berserker SW-900	Heavy Webifier Drone	250 m/s	25 Mbit/s	Max. Velocity Bonus: -20%	5 sec
	Acolyte EV-300	Light Energy Neutralizer Drone	350 m/s	5 Mbit/s	Energy Neutralized: 5 GJ	6 sec
	Infiltrator EV-600	Medium Energy Neutralizer Drone	300 m/s	10 Mbit/s	Energy Neutralized: 10 GJ	6 sec
	Praetor EV-900	Heavy Energy Neutralizer Drone	250 m/s	25 Mbit/s	Energy Neutralized: 25 GJ	6 sec

Required / Recommended Skills

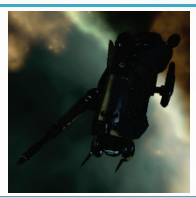
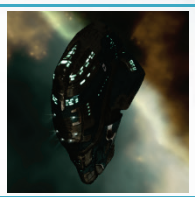
In the case of drones it is very important to have the proper drone skills, because as opposed to weapons, drones are effected by lot fewer modules.

Name	Rank	Suggested Level	Effect	Note
Drones	1	5	Skill at remote controlling drones. Can operate 1 drone per skill level.	A 'must have' skill for drone ships.
Light Drone Operation	1	4	Skill at controlling light combat drones. 5% Bonus to damage of light drones per level.	Useful skills, suggested to level V
Medium Drone Operation	2	4	Skill at controlling medium combat drones. 5% Bonus to damage of medium drones per level.	
Heavy Drone Operation	5	4	Skill at controlling heavy combat drones. 5% Bonus to heavy drone damage per level.	Not bad, mostly enough on level IV
Drone Avionics	1	5	Skill at controlling scout combat drones. Bonus: drone control range increased by 5000 meters per skill level.	A drone far, far away...
Repair Drone Operation	3	5	Allows operation of logistic drones. 5% increased repair amount per level.	Suggested to get the +25% repair amount, isn't?
Advanced Drone Avionics	5	4	This skill is required for the operation of Electronic Warfare Drones but also gives a bonus to the control range of all drones. 3,000m bonus drone control range per level.	To the unknown and…
Drone Interfacing	5	5	Allows a captain to better maintain his drones. 10% bonus to drone damage and drone mining yield per level.	Hard to train, but 'must have' at level V
Amarr / Caldari / Gallente / Minmatar Drone Specialization	5	4	Specialization in the operation of advanced drones. 2% bonus per skill level to the damage of light, medium and heavy drones requiring Drone Specialization.	Pre-req for Tech II drones
Drone Navigation	1	5	Skill at controlling drones at high speeds. 5% increase in drone Microwarpdrive speed per level.	To reach their target is an important thing
Drone Sharpshooting	1	4	Increases drone optimal range.	Not suggested for level V
Drone Durability	5	4	Increases drone hit points. 5% bonus to drone shield, armor and hull hit points per level.	Can be VERY useful.
Sentry Drone Interfacing	5	4	Skill at controlling sentry drones. 5% bonus to Sentry Drone damage per level.	Only for sentries, use if you need.
Advanced Drone Interfacing	8	4 (5)	Allows the use of the Drone Control Unit module. One extra module can be fitted per skill level. Each fitted Drone Control Unit allows the operation of one extra drone.	DCU= Drone Control Unit, Only for carriers and SCs
Fighters	12	4 (5)	Allows operation of fighter craft. 20% increase in fighter damage per level.	Level V for carrier and SC pilots!
Fighter Bombers	12	4 (5)	Allows operation of fighter bomber craft. 20% increase in fighter bomber damage per level.	Only for supercarriers
Salvage Drone Operation	4	3 (5)	Skill at controlling salvage drones. 2% increased salvage chance per level.	You can use them on white and blue wrecks.

Required / Recommended Modules

Module	Effect	Active / Passive
Target Painter	A targeting subsystem that projects an electronic "Tag" on the target thus making it easier to target and Hit. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Active
Drone Control Unit	Gives you one extra drone. You need Advanced Drone Interfacing to use this module, it gives you the ability to fit one drone control unit per level. Can only be fit to Carriers and Supercarriers.	Active
Drone Link Augmentor I	Increases drone control range. (+20km)	Passive
Drone Link Augmentor II	Increases drone control range. (+24km)	Passive
Drone Navigation Computer I	Increases microwarpdrive speed of drones. (25N)	Passive
Drone Navigation Computer II	Increases microwarpdrive speed of drones. (30N)	Passive
Drone Repair Augmentor I	This ship modification is designed to increase a ship's drone repair amount at the expense of the ship's CPU capacity. (+10%)	Passive
Drone Repair Augmentor II	This ship modification is designed to increase a ship's drone repair amount at the expense of the ship's CPU capacity. (+15%)	Passive
Omnidirectional Tracking Link I	Improves the optimal range and/or tracking of all drones. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Active
Omnidirectional Tracking Link II	Improves the optimal range and/or tracking of all drones. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Active
Omnidirectional Tracking Enhancer I	Enhances the range and improves the tracking speed of all drones. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Passive
Omnidirectional Tracking Enhancer I	Enhances the range and improves the tracking speed of all drones. Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	Passive
Drone Damage Amplifier I	The Drone Damage Amplifier projects a multi-node quantum entanglement onto the ship's drone communications net, creating a bridged processor between ship and drones that allows for better real-time trajectory projections. (16%) Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized. This module is for combat drones, not fighters or bombers.	Passive
Drone Damage Amplifier II	The Drone Damage Amplifier projects a multi-node quantum entanglement onto the ship's drone communications net, creating a bridged processor between ship and drones that allows for better real-time trajectory projections. (23%) Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized. This module is for combat drones, not fighters or bombers.	Passive

Popular Drone-Ships

Name	Dominix	Sin	Ishtar	Ishkur	Vexor	Arbitrator
Fitting						
CPU	600	600	340	155	300	325
Powergrid	9000	8800	780	42	800	575
Calibration	400	400	400	400	400	400
Rig Slots	3	2	2	2	3	3
Low Slots	7	6	5	4	5	5
Med Slots	5	6	5	3	4	4
High Slots	6	7	4	4	4	4
Max Turret	6	4	4	3	4	2
Max Launcher	0	0	0	0	0	2
Attributes						
Cargo Bay	600 m^3	700 m^3	460 m^3	165 m^3	480 m^3	345 m^3
Drone Bay	375 m^3	400 m^3	125 m^3	25 m^3	125 m^3	150 m^3
Drone Bandwith	125 Mbit/s	125 Mbit/s	375 Mbit/s	25 Mbit/s	75 Mbit/s	50 Mbit/s
Max Speed	109 m/s	117 m/s	195 m/s	287 m/s	195 m/s	200 m/s
Bonus						
	Gallente Battleship skill bonus per level: 10% bonus to Drone Damage and Drone hitpoints 7,5% bonus to Drone optimal range and Drone tracking speed	**Gallente Battleship Skill Bonus:** 5% bonus to large hybrid turret damage and 10% bonus to drone hit points and damage per skill level **Black Ops Skill Bonus:** 5% bonus to agility and multiplies the cloaked velocity by 125% per level **Note:** can fit Covert Cynosural Field Generators and Covert Jump Portal Generators.	**Role Bonus:** 50% reduction in MicroWarpdrive signature radius penalty. **Gallente Cruiser Skill Bonus:** 7.5% bonus to Heavy Drone max velocity and tracking. 10% bonus to Drone hitpoints and damage. **Heavy Assault Cruiser Skill Bonus:** 5 km bonus to Drone operation range per level. 7.5% bonus to Sentry Drone optimal range and tracking speed.	**Gallente Frigate Skill Bonus:** 5% bonus to Small Hybrid Turret damage 10% bonus to drone hitpoints per level **Assault Frigates Skill Bonus:** 10% bonus to Small Hybrid Turret Optimal Range per level 5m^3 Drone Bay Capacity per level **Role bonus:** 50% reduction in Microwarpdrive signature radius penalty	**Gallente Cruiser skill bonus per level:** 5% bonus to Medium Hybrid Turret damage 10% bonus to drone hitpoints, damage and mining yield	**Amarr Cruiser skill bonus per level:** 7.5% bonus to Tracking Disruptor effectiveness 10% bonus to drone hitpoints, damage and mining yield

The Ships Of The Races

Amarr

As mentioned earlier, Amarr are the specialists of laser weapons and the masters of armor. Their ships have the best capacitor recharge potential.

Class		Name
Frigate		
Tech I		Executioner, Inquisitor, Tormentor, Punisher, Crucifier, Magnate
Faction		Amarr Navy Slicer
Tech II	**Assault Ship**	Vengeance, Retribution
	Interceptor	Crusader, Malediction
	Covert Ops	Anathema, Purifier
	Electronic Attack Ship	Sentinel
Destroyer		
Tech I		Coercer, Dragoon
Tech II	**Interdictor**	Heretic
Tech III	**Tactical Destroyer**	Confessor
Cruiser		
Tech I		Arbitrator, Augoror, Omen, Maller
Faction		Omen Navy Issue, Augoror Navy Issue
Tech II	**Heavy Assault Ships**	Zealot, Sacrilege
	Recon Ship	Pilgrim, Curse
	Heavy Interdictor	Devoter
	Logistic	Guardian
Tech III	**Strategic Cruiser**	Legion
Battlecruiser		
Tech I		Prophecy, Harbinger, Oracle, Harbinger Navy Issue
Tech II	**Command Ship**	Absolution, Damnation
Battleship		
Tech I		Armageddon, Apocalypse, Abaddon
Faction		Apocalypse Navy Issue, Armageddon Imperial Issue, Apocalypse Imperial Issue
Tech II	**Black Ops**	Redeemer
	Marauders	Paladin
Industrial		
Tech I		Sigil, Bestower
	Freighter	Providence
Tech II	**Transport Ship**	Impel
	Blockade Runner	Prorator
	Jump Freighter	Ark
Capital		
Tech I	**Carrier**	Archon
	Dreadnought	Revelation
	Supercarrier	Aeon
	Titan	Avatar

Caldari

They are specialists in missiles, hybrid weapons, electronic warfare and shields.

Class		Name
Frigate		
T1		Bantam, Condor, Griffin, Kestrel, Merlin, Heron
Faction		Caldari Navy Hookbill
T2	**Assault Ship**	Hawk, Harpy
	Interceptor	Crow Raptor
	Covert Ops	Buzzard, Manticore
	Electronic Attack Ship	Kitsune
Destroyer		
T1		Cormorant, Corax
T2	**Interdictor**	Flycatcher
Cruiser		
T1		Osprey, Blackbird, Caracal, Moa
Faction		Caracal Navy Issue, Osprey Navy Issue
T2	**Heavy Assault Ships**	Cerberus, Eagle
	Recon Ship	Falcon, Rook
	Heavy Interdictor	Onyx
	Logistic	Basilisk
T3	**Strategic Cruiser**	Tengu
Battlecruiser		
T1		Ferox, Drake, Naga, Drake Navy Issue
T2	**Command Ship**	Nighthawk, Vulture
Battleship		
T1		Scorpion, Raven, Rokh
Faction		Raven Navy Issue, Raven State Issue
T2	**Black Ops**	Widow
	Marauders	Golem
Industrial		
T1		Badger, Tayra
	Freighter	Charon
T2	**Transport Ship**	Bustard
	Blockade Runner	Crane
	Jump Freighter	Rhea
Capital		
T1	**Carrier**	Chimera
	Dreadnought	Phoenix
	Supercarrier	Wyvern
	Titan	Leviathan

Gallente

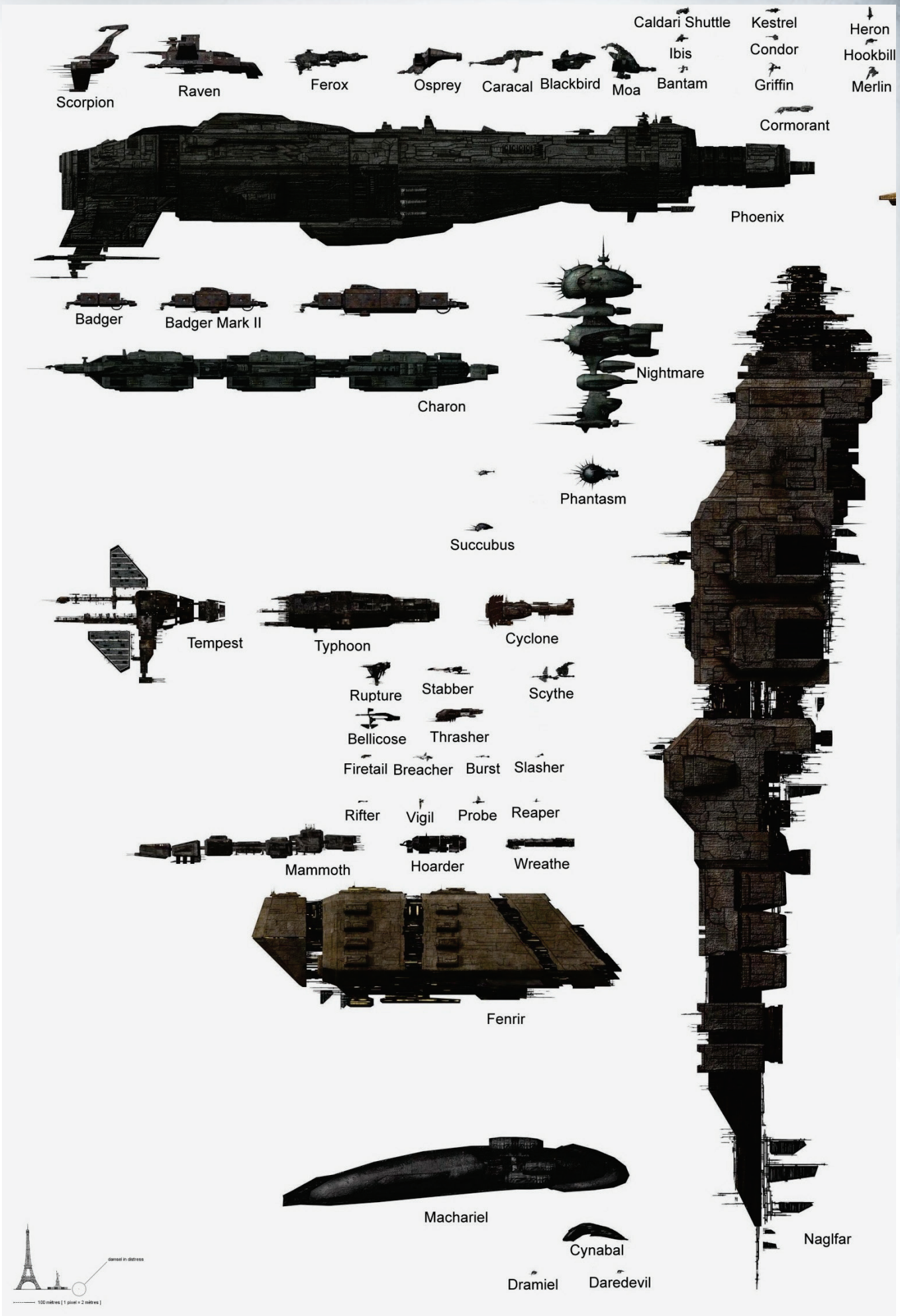
They use drones and hybrid weapons, and prefer armor tanking.

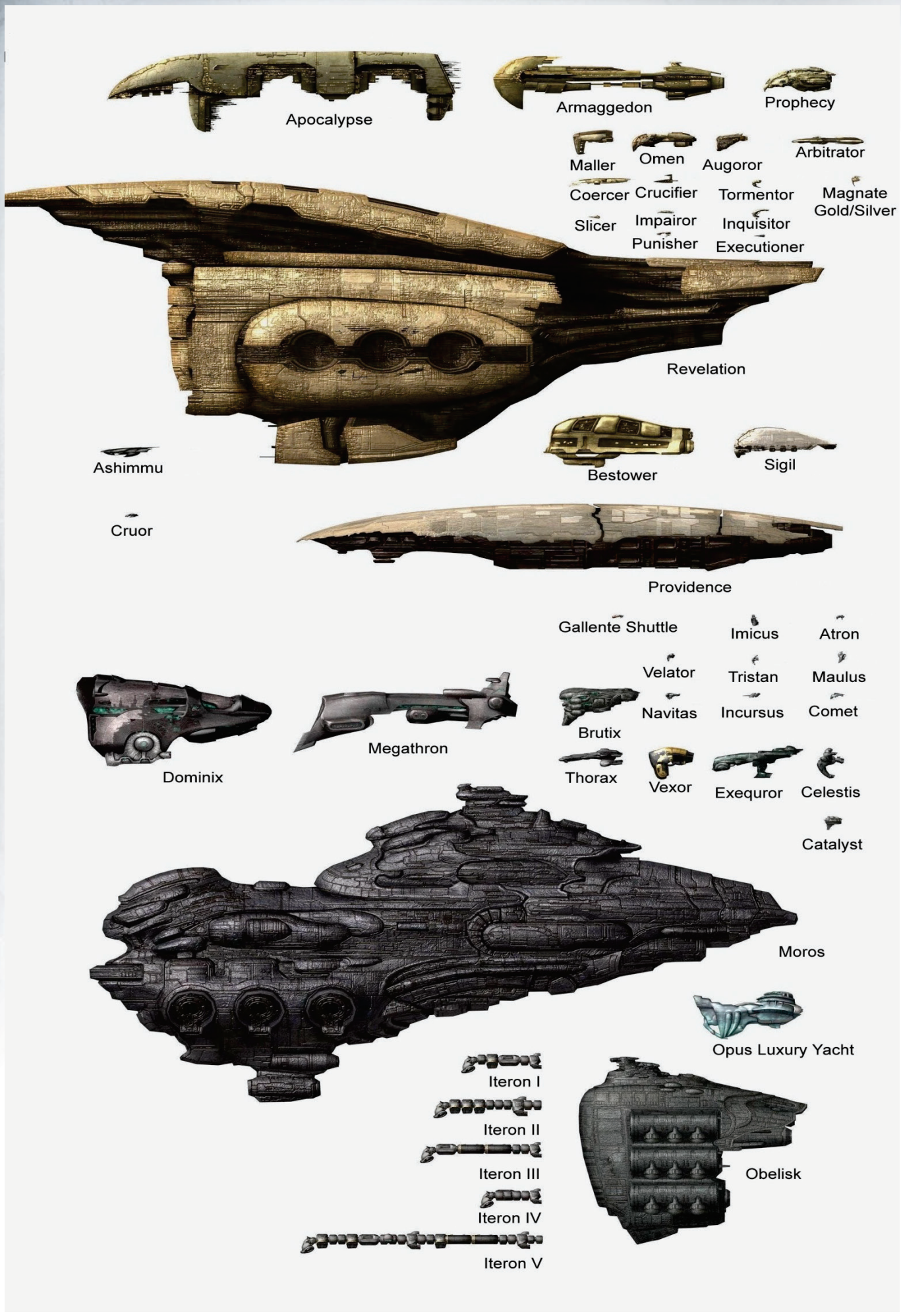
Class		Name
Frigate		
T1		Atron, Imicus, Incursus, Maulus, Navitas, Tristan
Faction		Gallente Navy Comet
T2	**Assault Ship**	Ishkur, Enyo
	Interceptor	Ares, Taranis
	Covert Ops	Helios, Nemesis
	Electronic Attack Ship	Keres
Destroyer		
T1		Catalyst, Algos
T2	**Interdictor**	Eris
Cruiser		
T1		Exequror, Celestis, Vexor, Thorax
Faction		Exequror Navy Issue, Vexor Navy Issue
T2	**Heavy Assault Ships**	Ishtar, Deimos
	Recon Ship	Lachesis, Arazu
	Heavy Interdictor	Phobos
	Logistic	Oneiros
T3	**Strategic Cruiser**	Proteus
Battlecruiser		
T1		Brutix, Myrmidon, Talos, Brutix Navy Issue
T2	**Command Ship**	Astarte, Eos
Battleship		
T1		Dominix, Megathron, Hyperion
Faction		Megathron Navy Issue, Megathron Federate Issue
T2	**Black Ops**	Sin
	Marauders	Kronos
Industrial		
T1		Nereus, Kryos, Epithal, Miasmos, Iteron Mark V
	Freighter	Obelisk
T2	**Transport Ship**	Occator
	Blockade Runner	Viator
	Jump Freighter	Anshar
Capital		
T1	**Carrier**	Thanatos
	Dreadnought	Moros
	Supercarrier	Nyx
	Titan	Erebus

Minmatar

True jacks of all trades, many of their ships are specialized in shields, others armor. Minmatars prefer speed, artillery and autocannon.

Class		Name
Frigate		
T1		Burst, Slasher, Vigil, Breacher, Rifter, Probe
Faction		Dramiel, Republic Fleet Firetail
T2	**Assault Ship**	Jaguar, Wolf
	Interceptor	Stiletto, Claw
	Covert Ops	Cheetah, Hound
	Electronic Attack Ship	Hyena
Destroyer		
T1		Thrasher, Talwar
T2	**Interdictor**	Sabre
Cruiser		
T1		Scythe, Bellicose, Stabber, Rupture
Faction		Stabber Fleet Issue, Scythe Fleet Issue
T2	**Heavy Assault Ships**	Vagabond, Muninn
	Recon Ship	Huginn, Rapier
	Heavy Interdictor	Broadsword
	Logistic	Scimitar
T3	**Strategic Cruiser**	Loki
Battlecruiser		
T1		Cyclone, Hurricane, Tornado, Hurricane Fleet Issue
T2	**Command Ship**	Sleipnir, Claymore
Battleship		
T1		Typhoon, Tempest, Maelstrom
Faction		Tempest Fleet Issue, Tempest Tribal Issue
T2	**Black Ops**	Panther
	Marauders	Vargur
Industrial		
T1		Wreathe, Hoarder, Mammoth
	Freighter	Fenrir
T2	**Transport Ship**	Mastodon
	Blockade Runner	Prowler
	Jump Freighter	Nomad
Capital		
T1	**Carrier**	Nidhoggur
	Dreadnought	Naglfar
	Supercarrier	Hel
	Titan	Ragnarok


Caldari Shuttle
Kestrel
Heron
Ibis
Condor
Hookbill
Scorpion
Raven
Ferox
Osprey
Caracal
Blackbird
Moa
Bantam
Griffin
Merlin
Cormorant
Phoenix
Badger
Badger Mark II
Nightmare
Charon
Phantasm
Succubus
Tempest
Typhoon
Cyclone
Rupture
Stabber
Scythe
Bellicose
Thrasher
Firetail
Breacher
Burst
Slasher
Rifter
Vigil
Probe
Reaper
Mammoth
Hoarder
Wreathe
Fenrir
Machariel
Cynabal
Naglfar
Dramiel
Daredevil


Apocalypse
Armaggedon
Prophecy
Maller
Omen
Augoror
Arbitrator
Coercer
Crucifier
Tormentor
Magnate
Gold/Silver
Slicer
Impairor
Inquisitor
Punisher
Executioner
Revelation
Ashimmu
Bestower
Sigil
Cruor
Providence
Gallente Shuttle
Imicus
Atron
Velator
Tristan
Maulus
Navitas
Incursus
Comet
Brutix
Dominix
Megathron
Thorax
Vexor
Exequror
Celestis
Catalyst
Moros
Opus Luxury Yacht
Iteron I
Iteron II
Iteron III
Iteron IV
Iteron V
Obelisk

Faction and The ORE ships

Each of the four main empires has its own 'terrorist' or pirate enemy, and these pirate factions have their own specialized ship designs. Pirates often mix technologies from multiple races, which can give them an edge, but these tend to have very high skill requirements. Such ships are also very expensive.

O.R.E., however, is not a 'terrorist' or pirate organization, but it does not belong to any of the big empires. They are specialized in mining operations, and their mining barges and exhumers require special skills to fly.

Faction:	Angel Cartel	Necessary Racial skills:	Minmatar, Gallente
Ship Class		**Ship Name**	
Frigate		Dramiel	
Cruiser		Cynabal	
Battleship		Machariel	

Faction:	Blood Raiders	Necessary Racial skills:	Amarr, Minmatar
Ship Class		**Ship Name**	
Frigate		Cruor	
Cruiser		Ashimmu	
Battleship		Bhaalgorn	

Faction:	Guristas	Necessary Racial skills:	Caldari, Gallente
Ship Class		**Ship Name**	
Frigate		Worm	
Cruiser		Gila	
Battleship		Rattlesnake	

Faction:	Sansha's Nation	Necessary Racial skills:	Amarr, Caldari
Ship Class		**Ship Name**	
Frigate		Succubus	
Cruiser		Phantasm	
Battleship		Nightmare	

Faction:	Necessary Racial skills:
Ship Class	**Ship Name**
Frigate	Daredevil
Cruiser	Vigilant
Battleship	Vindicator

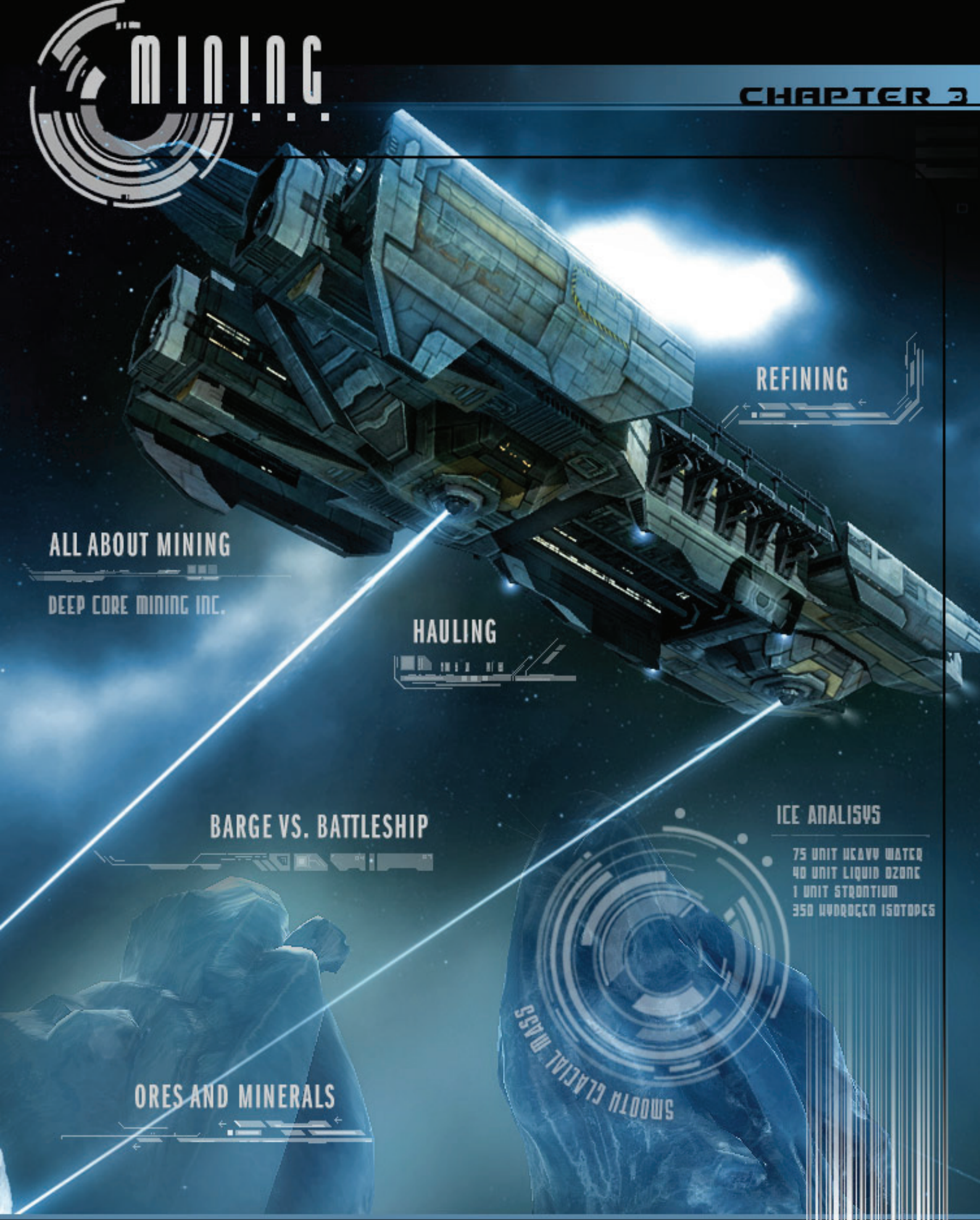
Faction:	Necessary Racial skills:
Ship Class	**Ship Name**
Mining Frigate	Venture
Mining Barge	Procurer Retriever Covetor
Exhumer	Skiff Mackinaw Hulk
Industrial Com. Ship	Orca
Capital Industrial Ship	Rorqual
Standard Industrial Ship	Primae, Noctis
ORE Freighter	Bowhead

Faction:	Necessary Racial skills:
Ship Class	**Ship Name**
Frigate	Astero
Cruiser	Stratious
Battleship	Nestor

Faction:	Necessary Racial skills:
Ship Class	**Ship Name**
Frigate	Garmur
Cruiser	Orthus
Battleship	Barghest

MINING

CHAPTER 3



EVE INDUSTRIAL BLACK BOOK

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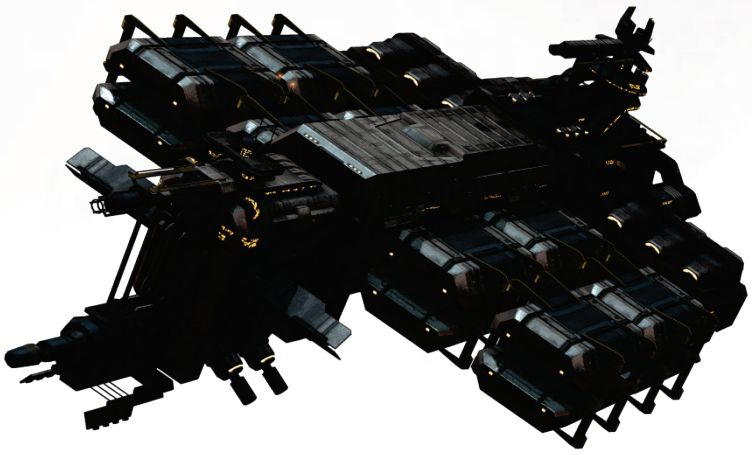
The Mining Life



A tall, elegant man stood in a dark room. The numerous computer displays and gauges cast blue shadows upon his serious face, his eyes piercing among the darkness, overseeing the work of his engineers.

One of the workers came running to the officer.

“Commander, one of our strip miner is malfunctioning. We are getting abnormal readings from the buffer. The transport stream isn’t compensating.”

“Deactivate the system and replace the crystal, Mister Dupuis,” grinned the tall man. Commander Velour wasn’t fond of this recent technology. He had been an engineer for 35 years, and he always referred to his earlier years, when mechanical grips were still the sharp edge of technology. Now they had bidirectional laser stream transport technology, advanced crystal enhancements, drones and who knows what else. Despite his annoyance towards his ship’s occasional hiccups, he always retained the most immense patience and understanding toward his workers.

His very nature was what commanded huge respect from his crew members. He preferred to be in the engineering room than the bridge, to be with his crew, to let them know he was there for them. He knew the job was hard; long hours, little rest and tiring work shifts. He was indeed very proud to command such a capable fleet of men and women.

His nano transponder emitted a sharp beep.

“Commander, the fleet has reached its harvesting objectives and is awaiting your orders, sir.”

“Very well, lieutenant. Inform the Yamato to open a jump portal to Isenan, and have the fleet enter hyperspace formation.” The Commander smiled; he was pleased with the results of this last trip.

“Very well sir, right away.”

From the window, the Commander saw a huge, beautiful Erebus-class titan. A gigantic ball of blue light erupted from its head, and a gush of lightning illuminated the vastness of space.

“Lieutenant, inform the Yamato to close the jump portal once my ship steps through and to meet the fleet at the rendezvous coordinates. Order the jump, Mister Delair.”

A long chain of Hulks and Occators entered the giant hole, disappearing into the event horizon of the portal. The Admiral would be very pleased; they had mined enough mineral to complete the Nyx. The Commander’s Rorqual entered the portal last and the Yamato jumped away in a gush of bright white light, leaving behind an empty asteroid field: the true testament of hard work and labour.

Mining 101

Since the dawn of human civilization, the need for materials to building something new has always been high. Mining is one of the basic industries which shapes our world and is the backbone for every other industry.

Because of mining, humans have found clay, rock, iron, coal, silver and gold, precious gems, oil and much more, and has made our civilization as it is now. Without mining, we would have difficulties finding these goods, and many would not even been known to us.

There have always been men and women obsessed with digging the ground for more material to fuel the hunger of civilization. Mining is the fundament of the pyramid of the EVE Online economy system. Everyone needs materials to build, so they can mine more, build more, and shoot more.

Mining is a profession with a steady income. A professional miner can become quite wealthy if he knows what to mine and where. Because EVE is a massively multiplayer online game, there are always possibilities to get others to join your venture, making it even better, bigger and wealthier. Whatever path you take, the game has a vast arsenal to aid you on your journey.

The Basics

Mining in EVE is very simple; in every solar system you can find asteroid belts which are (mostly) full of rocks. With mining lasers, you can mine until the cargo hold of your ship is full. After refining the ore you've collected, you can use the minerals to build ships or ship modules. In Empire space, in any region with a security status between 1.0 and 0.5, the most common ores are: Veldspar, Scordite and Pyroxeres. These ores contain the most common minerals: Tritanium, Pyerite, and Mexallon.

The amount of minerals you gain from refining ores depends on your skills and your standing towards the corporation owning the station where you want to refine. This sounds complicated for the moment, but all will be explained in due time. Every ship with a turret hardpoint and a mining laser fitted (at least one, but better with more) can mine ore from asteroids.

Asteroid Belts and Ores

Every solar system has asteroid belts (I'm sorry to say that, but most of the belts are depleted around the starter systems). Some have more and some have less. The basic rule is the lower the security status of a system, the bigger the value of the ores you can mine there. But beware! If you are still new to EVE, do not wander into low-sec (security status 0.4-0.1). There is no CONCORD to protect you and no one is going to bother if someone scratches the paint on your ship (unless you are in a corporation and they come to help you).

The purpose of this section of the guide is not to teach you how to live in low-sec or 0.0, only to show you the tricks and trades, which you can learn and use.

Just a reminder: you are relatively safe in high-sec systems. This is where CONCORD will come to your aid if you are attacked. But be warned, no one protects you from ore thieves or 'suicide gankers' who sacrifice their own 'cheap' ships, blowing you out of your fancy ride, along with your ore and equipment. They can attack you even in 1.0 systems.

The ore you can get in 1.0-0.1 systems are called 'low-end' ores. The really good ores are in 0.0; these are the 'high-end' ores. These ores have the best value in the universe of EVE (Bistot, Arkonor, Mercoxit, Gneiss and Crokite). It does not mean that the low-end ores are worthless, just have different prices. Lastly, you can mine ice in special ice fields in 0.7 systems and below. Some ore types can be found in certain regions – Jaspet can only be found in Gallente and Amarr space in 0.4 systems and below, for instance. Because of this, you will never find Jaspet in Caldari or Minmatar space. However, every kind of ore can be found in 0.0 systems, from Veldspar to Mercoxit (not in every system though).

Minerals

Minerals are the products you get by refining ores. There are eight types of minerals in EVE, three of these are high-end and five are low-end. High-end minerals are: Zydrine, Megacyte and Morphite. Tritanium, Pyerite, Mexallon, Isogen and Nocxium are low-end minerals. High-end minerals come from high-end ores, which are mostly found in 0.0 space, but a few can be found in low-sec too. This also shows why they cost more than the low-end ores.

Batches refer to the amount of ore you need to mine to be able to refine it (Units of ore / ice needed to reprocess have been unified to 100 for all ores and ices). It means the amount of minerals you gain from perfect refining. Let's see how it goes in practice.

Let's say you have mined 3,467 units of Omber and transported it to the station to refine it. After every 100 units of Omber with a 4% reprocessing implant, perfect corporation standings at 50% reprocessing station (72,4% efficiency), you gain: 0,724 x 85 Tritanium, 34 Pyerite, 85 Isogen = **61 Tritanium, 24 Pyerite, 61 Isogen.**

3,467 units of Omber can be refined into 34 batches of minerals, and there will be 67 units of Omber left over. This sounds easy, but do not forget that you are going to need a lot of skills and quite a bit of reputation with the corporation that owns the station (+6.7 standing should be necessary) or you have to pay taxes (meaning you gain less minerals from refining).

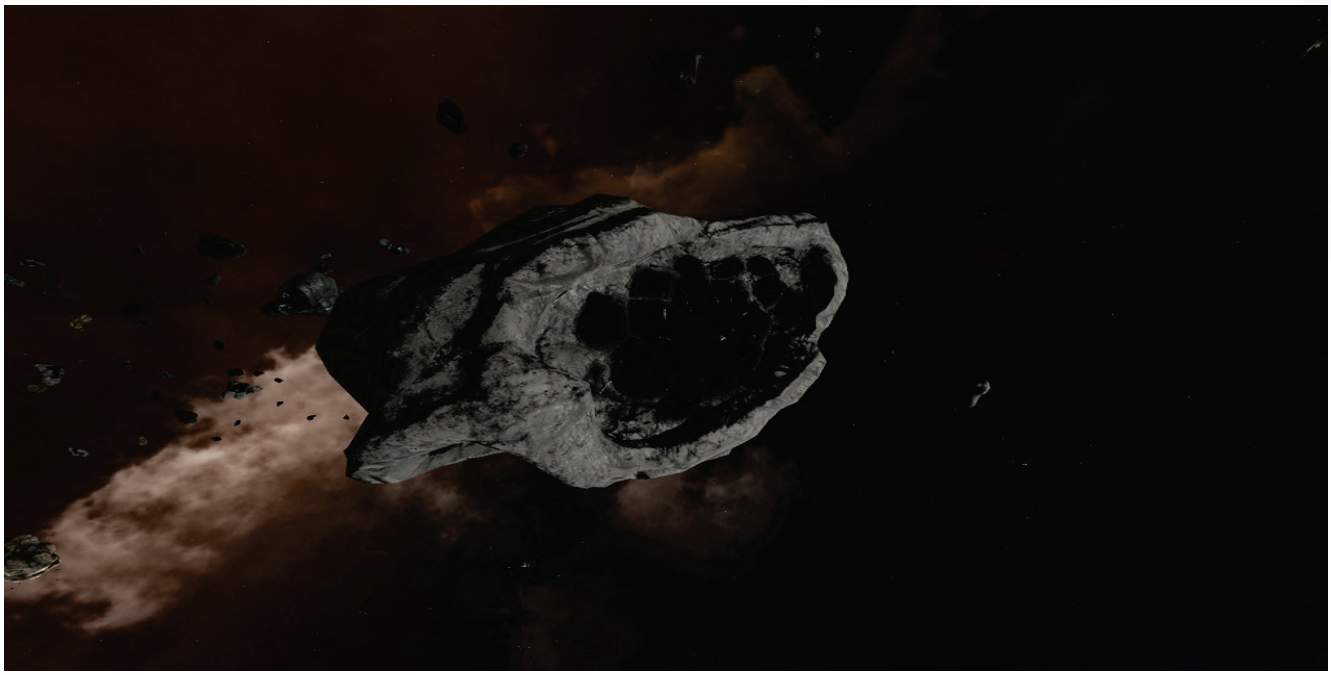
What To Mine?

The prices of the minerals change every day according to the supply and demand of the market. No one can tell you to mine this ore or that, or that a particular type of ore has the best price of all and will be that way forever! EVE-Central (www.eve-central.com) can help you in finding which mineral had what price during the past 180 days. So if you think that this is your trade (take note, that sometimes it can be very risky and/or expensive), or you just want to have a price check of the goods you want to sell or buy, this link will be useful to you. No matter what you are going to mine, there will ALWAYS be someone who will buy it.

Dotlan EVE Maps (evemaps.dotlan.net) is a great tool to find out where types of ore can be located. It can even help select a place for a mining colony.

Be advised that there are three types of every ore; the basic, a variant that contains +5%, and another variant that contains +10% of the minerals compared to the basic type.

			AMARR	CALDARI	GALLENTE	MINMATAR
		Amarr, Ammatar, Khanid, Blood Raider and Sansha space	**Caldari and Guristas space**	**Gallente and Serpentis space**	**Minmatar and Angel space**
High Sec.	**1.0**	Veldspar, Scordite	Veldspar, Scordite	Veldspar, Scordite	Veldspar, Scordite
	0.9	Pyroxeres	Pyroxeres	Plagioclase	Plagioclase
	0.7	Kernite, Clear Icicle	Plagioclase, White Glaze	Omber, Blue Ice	Omber, Glacial Mass
Low Sec.	**0.4**	Jaspet	Kernite	Jaspet	Kernite
	0.3	Glare Crust	Glare Crust	Glare Crust	Glare Crust
	0.2	Hemorphite	Hedbergite	Hemorphite	Hedbergite
	0.1	Dark Glitter	Dark Glitter	Dark Glitter	Dark Glitter
Zero Sec.	**0.0**	Enriched Clear Icicle, Gelidus, Gneiss, Spodumain, Krystallos, Bistot, Crokite, Arkonor, Mercoxit	Pristine White Glaze, Gelidus, Dark Ochre, Krystallos, Crokite, Spodumain, Mercoxit, Bistot	Thick Blue Ice, Gelidus, Dark Ochre, Crokite, Bistot, Krystallos, Mercoxit, Arkonor	Smooth Glacial Mass, Gelidus, Spodumain, Bistot, Gneiss, Krystallos, Arkonor, Mercoxit



The Beginning Of The Business

By this stage you already know now what you can mine, but the know-how is still missing. If you ask “what now?” while sitting in your rookie ship, do not be afraid. This is where we start to help you figure it out.

Basic Skills For Mining

Let’s start with some basic skills (those skills that are useful for almost every ship). Every skill in a certain ‘Skill Group’ builds on its fundamental basic skill (for instance, Capacitor Systems Operation requires Power Grid management level V). However, if you do not use drones, do not learn the required skills.

Name	Effect
Astrogeology	+ 5% bonus to mining turret yield per skill level
Drone Durability	+ 5% bonus to drone shield, armor and hull hitpoints per level
Drone Interfacing	+ 20% bonus to drone damage, drone mining yield per level
Drone Navigation	+ 5% increase in drone microwarpdrive speed per level
Drones	Can operate one drone per skill level (five drones at level V)
CPU management	+ 5% Bonus to ship CPU output per skill level
Capacitor Management	+ 5% bonus to capacitor capacity per skill level
Capacitor Systems Operation	+ 5% reduction in capacitor recharge time per skill level
Power Grid management	+ 5% Bonus to ship’s powergrid output per skill level
Exhumers	Skill for the operation of elite mining barges
Hull Upgrades	+ Grants a 5% bonus to armor hitpoints per skill level
Ice Harvesting	5% reduction per skill level to the cycle time of ice harvesters.
Mechanic	+ 5% bonus to structure hitpoints per skill level
Mining	+ 5% bonus to mining turret yield per skill level
Mining Barge	Skill at operating ORE mining barges (level V is pre-req for exhumers)
Mining Director	100% bonus to effectiveness of Mining Foreman link modules per level after level 2 is trained.
Mining Drone Operation	+ 5% Bonus to mining drone yield per skill level.
Mining Foreman	Grants a 2% bonus to fleet members' mining yield per level. Note: The fleet bonus only works if you are the assigned fleet booster.
Mining Upgrades	- 5% reduction per skill level in CPU penalty of mining upgrade modules
Reprocessing	- 3% reduction in refinery waste per skill level
Reprocessing Efficency	- 2% reduction in refinery waste per skill level
Scrapmetal Processing	- 2% reduction in alloy, ship and module refining waste per skill level
[ORE] Processing	- 2% reduction in [ORE] refining waste per skill level

Skills & Math

Math has very interesting rules in EVE, like fractions rounding. Until now, we have been easy on math – it was not our favourite subject in school. But it is time to take it seriously! The only way to compare ships is to look at their mining yield and the skill bonus, and for that math will be needed. Relax! There is nothing too complicated! In EVE, the benefits of skills stack.

Regardless of the skill, they take effect accumulatively. For example, if you train the Mining skill to level IV, then calculated the 5% per level, it totals: 4 x 5% = 20% bonus. The effects of the different skills multiply differently: Astrogeology level IV (5%/skill level to the yield of the mining laser), means 20%, such as the Mining level IV, so: basic yield x 1.20 x 1.20 = net yield. Using a Mining Laser II it means: 60*1.20*1.20=86.4m³/cycle.

Basic Mining Techniques

In general, there are two basic techniques:

Shuttling: The first is to mine until the cargo hold (or Ore hold) of your ship is full, take it to the station and then move your ship back to the field again. The advantage of this method is that it is safe against ore thieves. The disadvantage is that transporting takes more time than mining itself.

JetCan: The second technique is JetCan mining. This means that you jettison the mined ore from your cargo into space. After that, you collect your ore in the can that appeared next to you. The advantage is that you can mine a whole lot more ore (a container can hold up to 27,500m³ of ore) and if someone helps you hauling the stuff back, they can access it freely.

Note that a JetCan can float for two hours. After that, it will disappear, taking everything in it away (or it will disappear if you remove everything from it). The disadvantages of this procedure is, anybody can open your cargo container and steal your ores. If this happens, he will be blinking on the overview with red colour, and you can shoot at him without any CONCORD involvement.

Unfortunately, this pilot also open fire at you, and if you are in a Fleet, only your Corporation members (and nobody else) can open fire at him freely. The thief can be helped by his mates with remote repair things, but this doesn't mean the free shoot.

Prepare yourself, you must have somebody with you all the time, who can take the ores away, when somebody appears, who is approaching and suspicious. Think: is it worth to lose your ship for few hundred cubic metres of ores? Probably not. Run Forest, run!

Project: Strip Mine

Strip Mining is pretty common in Empire space. It is a kind of space invasion of locusts: the miners descend on a belt and start to mine on one end of the asteroid field. They mine everything all the way to the other end, literally consuming all the rocks on the way. Because there is little difference in prices among the low-end ores, it is quite profitable and the miners do not have to move around a lot. They just mine everything within reach, then move to mine more.

Tactical hint: create bookmarks in the belts (right-click on an asteroid then 'Save Location'). You can cover the whole belt with bookmarks in 25-28km distance from each other. Practically, four or five bookmarks are enough to mine the whole belt. (It is useful to create the bookmark on the asteroid, thus avoiding unnecessary travelling in the belt.)

The Survey Scanner

There is one particular module which comes handy on every mining ship (especially on mining barges and exhumers). It is called Survey Scanner. This module scans the surrounding asteroid rocks for their content. Of course, you already know what is inside from the name of the rock, but you also want to know how much ore is in the rock. The three reasons why it is necessary to know are:

1. You can see the quantity of the ore, thus stop the mining lasers to avoid idling, because the cycle keeps running even if the ore is already extracted from the rock.
2. It is important to preserve the ore in 0.0 and low-sec systems, to avoid it disappearing. For example, completely mine a Bistot rock, and after downtime, you may find Veldspar in its place. If the Bistot was left with even one unit, it will grow again during downtime, like well-fed pigs on a farm.
3. Easy to find the rocks that you seek to mine, as the scanner window categorizes them by types into groups.

Mining Lasers

These are the common mining lasers. They can be fitted on any ships with a turret slot:

	Name	Meta Group	Meta Level	Mining Amount	Cycle Time	Activation Cost	CPU	PG	„Optimal" range
	Miner I	Tech I	—	**40 m³**	60 sec.	10 GJ	**60 tf**	2 MW	**10 km**
	EP-S Gaussian Excavation Pulse	Tech I	1	**42 m³**	60 sec.	10 GJ	**51 tf**	2 MW	**10 km**
	Dual Diode Mining Laser I	Tech I	2	**44 m³**	60 sec.	10 GJ	**54 tf**	2 MW	**11 km**
	XeCl Drilling Beam I	Tech I	3	**47 m³**	60 sec.	10 GJ	**48 tf**	2 MW	**11 km**
	Cu Vapor Particle Bore Stream I	Tech I	4	**49 m³**	60 sec.	10 GJ	**57 tf**	2 MW	**12 km**
	Miner II	Tech II	5	**60 m³**	60 sec.	90 GJ	**80 tf**	4 MW	**12 km**
	ORE Miner	Faction	6	**60 m³**	60 sec.	90 GJ	**80 tf**	4 MW	**14 km**
	Gallente Mining Laser	Storyline	8	**40 m³**	60 sec.	10 GJ	**59 tf**	2 MW	**10 km**

The 'Deep-core' mining lasers are specialized to mine Mercoxit ore and can be fitted on any ship. The Modulated Deep Core Miner II can use crystals to increase efficiency:

	Name	Meta Group	Meta Level	Mining Amount	Cycle Time	Activation Cost	CPU	PG	„Optimal" range	Crystal Bonus
	Deep Core Mining Laser I	Tech I	—	**40 m³**	60 sec.	240 GJ	**150 tf**	2 MW	**5 km**	—
	Modulated Deep Core Miner II	Tech II	5	**120 m³**	180 sec.	90 GJ	**80 tf**	3 MW	**10 km**	**120 m³**
	ORE Deep Core Mining Laser	Faction	6	**40 m³**	60 sec.	240 GJ	**150 tf**	2 MW	**7 km**	—

Strip Miners are the 'weapons' of the Mining Barges and Exhumers. The Modulated Strip Miner II can use mining crystals to increase efficiency, but only the deep-core variant can use Mercoxit crystals:

Name	Meta Group	Meta Level	Mining Amount	Cycle Time	Activation Cost	CPU	PG	„Optimal" range	Crystal Bonus
Strip Miner I	Tech I	—	**540 m³**	180 sec.	90 GJ	**60 tf**	10 MW	**15 km**	—
Modulated Deep Core Strip Miner II	Tech II	5	**250 m³**	180 sec.	90 GJ	**60 tf**	12 MW	**15 km**	**250 m³**
Modulated Strip Miner II	Tech II	5	**360 m³**	180 sec.	120 GJ	**60 tf**	12 MW	**15 km**	**360 m³**
ORE Strip Miner	Faction	6	**540 m³**	180 sec.	90 GJ	**60 tf**	10 MW	**17 km**	—

Arsenal of the Ice miners (can be fitted on Mining Barges and Exhumers only):

Name	Meta Group	Meta Level	Mining Amount	Cycle Time	Activation Cost	CPU	PG	„Optimal" range
Ice Harvester I	Tech I	—	**1000 m³**	300 sec.	10 GJ	**60 tf**	10 MW	**10 km**
Ice Harvester II	Tech II	5	**1000 m³**	250 sec.	15 GJ	**66 tf**	10 MW	**10 km**
ORE Ice Harvester	Faction	6	**1000 m³**	250 sec.	15 GJ	**66 tf**	10 MW	**12 km**

Last but not least, tools for collecting gas:

Name	Meta Group	Meta Level	Mining Amount	Cycle Time	Activation Cost	CPU	PG	„Optimal" range
Gas Cloud Harvester I	Tech I	—	**10 m³**	30 sec.	10 GJ	**40**	2 MW	**1500 m**
'Crop' Gas Cloud Harvester	Tech I	1	**10 m³**	30 sec.	10 GJ	**48**	2 MW	**1500 m**
'Pilow' Gas Cloud Harvester I	Tech I	1	**10 m³**	30 sec.	10 GJ	**30**	2 MW	**1500 m**
Gas Cloud Harvester II	Tech II	5	**20 m³**	40 sec.	15 GJ	**70**	5 MW	**1500 m**
Syndicate Gas Cloud Harvester	Faction	6	**10 m³**	30 sec.	10 GJ	**26**	2 MW	**1500 m**

Mining Laser Crystals

Every ore has its appropriate Tech I and Tech II mining laser crystal. The Mercoxit crystal is a bit different to the others, but that kind of ore will be discussed in a different chapter. Ice and gas do not have crystals.

Ore / Crystal Needed	Skills Needed	
	Tech I	Tech II
Veldspar	Refining 4, Industry I, Veldspar Processing 3, Science 3, Mining 1	Refining 4, Industry I, Veldspar Processing 4, Science 3, Mining 1
Scordite	Refining 4, Industry I, Scordite Processing 3, Science 3, Mining 1	Refining 4, Industry I, Scordite Processing 4, Science 3, Mining 1
Pyroxeres	Refining 4, Industry I, Pyroxeres Processing 3, Science 3, Mining 1	Refining 4, Industry I, Pyroxeres Processing 4, Science 3, Mining 1
Plagioclase	Refining 4, Industry I, Plagioclase Processing 3, Science 3, Mining 1	Refining 4, Industry I, Plagioclase Processing 4, Science 3, Mining 1
Omber	Refining 5, Industry I, Omber Processing 3, Science 3, Mining 1	Refining 5, Industry I, Omber Processing 4, Science 3, Mining 1
Kernite	Refining 5, Industry I, Kernite Processing 3, Science 3, Mining 1	Refining 5, Industry I, Kernite Processing 4, Science 3, Mining 1
Jaspet	Refining 5, Industry I, Jaspet Processing 3, Science 3, Mining 1	Refining 5, Industry I, Jaspet Processing 4, Science 3, Mining 1
Hemorphite	Refining 5, Industry I, Hemorphite Processing 3, Science 3, Mining 1	Refining 5, Industry I, Hemorphite Processing 4, Science 3, Mining 1
Hedbergite	Refining 5, Refinery Efficiency 4, Metallurgy 3, Industry I, Hedbergite Processing 3, Science 4, Mining 1	Refining 5, Refinery Efficiency 4, Metallurgy 3, Industry I, Hedbergite Processing 4, Science 4, Mining 1
Spodumain	Refining 5, Refinery Efficiency 4, Metallurgy 3, Industry I, Spodumain Processing 3, Science 4, Mining 1	Refining 5, Refinery Efficiency 4, Metallurgy 3, Industry I, Spodumain Processing 4, Science 4, Mining 1
Gneiss	Refining 5, Refinery Efficiency 4, Metallurgy 3, Gneiss Processing 3, Industry I, Science 4, Mining 1	Refining 5, Refinery Efficiency 4, Metallurgy 3, Gneiss Processing 4, Industry I, Science 3, Mining 1
Dark Ochre	Refining 5, Refinery Efficiency 4, Metallurgy 4, Industry I, Dark Ochre Processing 3, Science 4, Mining 1	Refining 5, Refinery Efficiency 4, Metallurgy 4, Industry I, Dark Ochre Processing 4, Science 3, Mining 1
Crokite	Refining 5, Refinery Efficiency 5, Metallurgy 4, Crokite Processing 3, Industry I, Science 4, Mining 1	Refining 5, Refinery Efficiency 5, Metallurgy 4, Crokite Processing 4, Industry I, Science 4, Mining 1
Bistot	Refining 5, Refinery Efficiency 5, Metallurgy 4, Bistot Processing 3, Industry I, Science 4, Mining 1	Refining 5, Refinery Efficiency 5, Metallurgy 4, Bistot Processing 4, Industry I, Science 4, Mining 1
Arkonor	Refining 5, Refinery Efficiency 5, Metallurgy 4, Arkonor Processing 3, Industry I, Science 4, Mining 1	Refining 5, Refinery Efficiency 5, Metallurgy 4, Arkonor Processing 4, Industry I, Science 4, Mining 1
Mercoxit	Refining 5, Refinery Efficiency 5, Metallurgy 4, Mercoxit Processing 3, Industry I, Science 4, Mining 1	Refining 5, Refinery Efficiency 5, Metallurgy 4, Mercoxit Processing 3, Industry I, Science 4, Mining 1

Using the crystals is simple: load them in a Tech II strip miner, or in a MDCM2 (this can be fitted on any ship, if you remember). In theory, the Tech I crystals give a 62.5%, while the Tech II give a 75% increase to the yield (with the right crystal). The actual increase will not be this high, however.

Crystal-using lasers or strip miners have a lower yield unloaded than their Tech I variant. It is not worth it to use a laser unloaded. Use Tech I versions while you train crystals. Comparing an unloaded laser with a Tech I laser, the later has a significantly higher yield. Tech I crystals require (Ore) Processing level III (Omber Processing level III, for instance), while Tech II crystals require level IV. The following chart will show you the different yield of the different types of laser crystals.

The basic yield of a Tech I strip miner is 540m³. So the Tech II variant gives 16.17% increased yield compared to the Tech I. Let's see the numbers.

Name	Base Yield (m³ / 3 minutes)	With T1 Crystal (62.5% bonus)	With T2 Crystal (75% bonus)
Strip Miner I	540	—	—
Modulated Strip Miner II	360	585	630
Miner I	120	—	—
Miner II	180	—	—
Modulated Deep Core Miner II	120	195	210

As we said before, this is a 16.17% increase compared to the Tech I variant, not 75%.

Cycle Time

The mining cycle determines the time required by your mining laser to gain the ore. The ore appears in the cargo of your ship at the end of the cycle. As you saw in the tables at the mining lasers article, the cycle of the named Tech I and Tech II mining lasers is 60 seconds, while it is 180 seconds (yes, three minutes) for Strip Miners (both Tech I and Tech II versions) and Modulated Deep Core Mining Lasers II.

Unfortunately, no matter when the asteroid becomes empty, it only disappears at the end of the cycle. A Survey Scanner is highly recommended, as it shows the quantity of the ore left in the rock. So, if your yield is 1000 units of ore per minute and there are only 500 units of ore left in the asteroid, then you should deactivate your laser at 30 seconds. Ice mining differs a bit (more about it in Ice Mining article), because ice is gained only at the end of the cycle. You must complete the cycle to get any ice.

Before we go any further, some notes about strip miners. You can only fit them on mining barges and exhumers. Many are confused by the length of the cycle time, and do not understand why it is good or bad if it is longer. Well, most of your time you drag the ore from the cargo to the JetCan. It doesn't matter whether you do it 60 times or 20 times in an hour. If one of the lasers 'catches up' with the other (for instance, the asteroid is depleted) and you do not have the time to empty your cargo, then the ore that does not have free room in cargo is wasted.

It can also happen if a huge amount of ore mined by the strip miners comes at the same time. It is recommended to activate the lasers one after another, leaving time between activations. First, you save capacitor, and second, you can avoid ore waste.

Mining Cycle And Mining Yield

The mining cycle and the mining yield have a direct connection to each other. Because the different lasers have different cycles and different ship's bonuses, it seems difficult to compare a mining battleship with a barge, but it is not impossible! You can divide the cycle of the barge to see how much it can mine in one minute or multiply the yield of both ships to see that yield projected in one hour.

But since EVE rounds down, the value would not be accurate. The strip miner has 20 cycles in one hour while the plain lasers have 60, so based on that you can get more accurate data.

How Much Is My Yield?

Unfortunately, the EVE database is not as sufficient as it could be. Do not depend on it too much regarding the yield of the Tech II strip miner. Nevertheless, by selecting 'Show Info' on your fitted laser, you can obtain the required information. It can be confusing though. Your current yield is indicated by the 'Specialty Crystal Mining Amount'. Ignore the data at the 'Mining Amount' when using a Tech II module. It is important to note that this value contains the skill bonuses.

The ship bonuses and the fleet bonuses are added only when the Show Info happens in space. If you aim to fly a Hulk, then you are going to need crystals to be really efficient. Crystals also can be fitted on battleships, so the knowledge of them will always be useful.

From Yields To Ores

A lot of people cannot determine how much ore (in quantity) they gain with their lasers in a cycle, but it is quite easy to calculate. While you are mining, right-click on one of your lasers and select 'Show Info' to see its yield. Divide that number by the volume of the given ore you are mining, then round it down.

Ore	Volume	Ore	Volume
Veldspar	0.1 m^3	Hedbergite	3 m^3
Scordite	0.15 m^3	Gneiss	5 m^3
Pyroxeres	0.3 m^3	Dark Ochre	8 m^3
Plagioclase	0.35 m^3	Spodumain	16 m^3
Omber	0.6 m^3	Crokite	16 m^3
Kernite	1.2 m^3	Bistot	16 m^3
Jaspet	2 m^3	Arkonor	16 m^3
Hemorphite	3 m^3	Mercoxit	40 m^3

Reprocessing / Recycling

Refining and recycling (known as 'reprocessing', when you recycle ships, ship modules, or anything you are able to find) is quite simple. The outcome can be improved through the following factors:

1- The level of your Reprocessing skill
2- The level of your Reprocessing Efficiency skill (Reprocessing level V is required)
3- Your standing toward the corporation owning the station
4- The efficiency of the reprocessing plant of the station
5- The level of your Scrapmetal Processing skill (only at reprocessing)

Implants For Refining

The implants below reduce waste during reprocessing. Unfortunately, Cybernetics level V is required for the implant with 4% bonus.

Type	Name	Pre-req.:
Zainou 'Beancounter'* Reprocessing *RX-801	1% reduction in reprocessing waste.	Cybernetics I
Zainou 'Beancounter'* Reprocessing *RX-802	2% reduction in reprocessing waste.	Cybernetics III
Zainou 'Beancounter'* Reprocessing *RX-804	4% reduction in reprocessing waste.	Cybernetics V

Ore Refining Tables

On the pages below you'll see the perfect, lossless reprocessing yield of the ores mined.

The third table contains the data for the drone alloy (which are no longer dropped by the drones by the way) reprocessing yield.

Ore Reprocessing Table

		m³ (1)	Batch:	Tritanium	Pyerite	Mexallon	Isogen	Nocxium	Zydrine	Megacyte	Morphite
	Veldspar	0,10	100	415	–	–	–	–	–	–	–
	Concentrated Veldspar			436	–	–	–	–	–	–	–
	Dense Veldspar			457	–	–	–	–	–	–	–
	Scordite	0,15	100	346	173	–	–	–	–	–	–
	Condensed Scordite			363	182	–	–	–	–	–	–
	Massive Scordite			380	190	–	–	–	–	–	–
	Pyroxeres	0,30	100	351	25	50	–	5	–	–	–
	Solid Pyroxeres			368	26	53	–	5	–	–	–
	Viscous Pyroxeres			385	27	55	–	5	–	–	–
	Plagioclase	0,35	100	107	213	107	–	–	–	–	–
	Azure Plagioclase			112	224	112	–	–	–	–	–
	Rich Plagioclase			117	234	117	–	–	–	–	–
	Omber	0,60	100	85	34	–	85	–	–	–	–
	Silvery Omber			89	36	–	89	–	–	–	–
	Golden Omber			94	38	–	94	–	–	–	–
	Kernite	1,2	100	134	–	267	134	–	–	–	–
	Luminous Kernite			140	–	281	140	–	–	–	–
	Fiery Kernite			147	–	297	147	–	–	–	–
	Jaspet	2	100	72	121	144	–	72	3	–	–
	Pure Jaspet			76	127	151	–	76	3	–	–
	Pristine Jaspet			79	133	158	–	79	3	–	–
	Hemorphite	3	100	180	72	17	59	118	8	–	–
	Vivid Hemorphite			189	76	18	62	123	9	–	–
	Radiant Hemorphite			198	79	19	65	129	9	–	–
	Hedbergite	3	100	–	81	–	196	98	9	–	–
	Vitric Hedbergite			–	85	–	206	103	10	–	–
	Glazed Hedbergite			–	89	–	216	108	10	–	–
	Spodumain	16	100	39221	4972	–	–	–	–	78	–
	Bright Spodumain			41182	5221	–	–	–	–	82	–
	Gleaming Spodumain			43143	5469	–	–	–	–	86	–
	Gneiss	5	100	1278	–	1278	242	–	60	–	–
	Iridescent Gneiss			1342	–	1342	254	–	63	–	–
	Prismatic Gneiss			1406	–	1406	266	–	65	–	–
	Dark Ochre	8	100	8804	–	–	–	173	87	–	–
	Onyx Ochre			9249	–	–	–	182	91	–	–
	Obsidian Ochre			9685	–	–	–	190	95	–	–
	Crokite	16	100	20992	–	–	–	275	367	–	–
	Sharp Crokite			22041	–	–	–	290	385	–	–
	Crystalline Crokite			23091	–	–	–	304	403	–	–
	Bistot	16	100	–	16572	–	–	–	236	118	–
	Triclinic Bistot			–	17402	–	–	–	248	124	–
	Monoclinic Bistot			–	18230	–	–	–	259	130	–
	Arkonor	16	100	6905	–	1278	–	–	115	230	–
	Crimson Arkonor			7251	–	1342	–	–	121	242	–
	Prime Arkonor			7596	–	1406	–	–	127	253	–
	Mercoxit	40	100	–	–	–	–	–	–	–	293
	Magma Mercoxit			–	–	–	–	–	–	–	308
	Vitreous Mercoxit			–	–	–	–	–	–	–	323

Alloy Reprocessing Table (Drones do not drop these anymore!)

	m³ (1)	Batch:	Tritanium	Pyerite	Mexallon	Isogen	Nocxium	Zydrine	Megacyte	Morphite
Condensed Alloy	1	1	160	40	10	–	–	–	–	–
Crystal Compound	1	1	–	–	24	6	–	–	–	–
Precious Alloy	1	1	–	128	–	8	–	–	–	–
Gleaming Alloy	1	1	768	–	–	–	3	–	–	–
Sheen Compound	1	1	512	128	–	8	2	–	–	–
Lucent Compound	1	1	–	192	48	12	3	–	–	–
Dark Compound	1	1	–	–	–	32	8	–	–	–
Motley Compound	1	1	–	–	–	40	10	–	–	–
Lustering Alloy	1	1	–	–	192	48	12	3	–	–
Plush Compound	1	1	4096	1024	–	64	–	4	–	–
Glossy Compound	1	1	–	–	384	–	24	–	1	–
Opulent Compound	1	1	–	–	–	–	–	–	–	2

Calculating The Reprocessing Efficiency

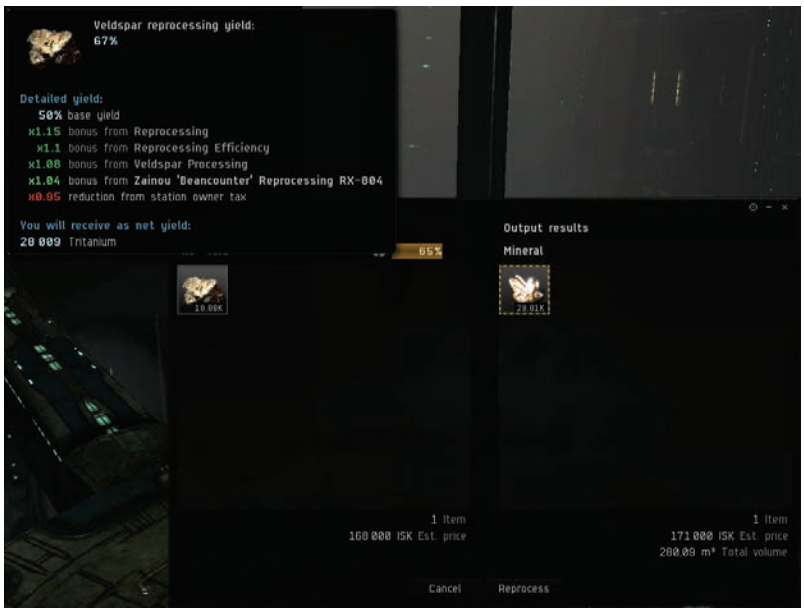
To calculate the reprocessing efficiency, use the following formula: Station Equipment x (1 + Reprocessing skill x 0.03) x (1 + Reprocessing Efficiency skill x 0.02) x (1 + Ore Processing skill x 0.02) x (1 + Reprocessing Implant) = The amount of mineral you gain from the ore.

The reprocessing plants in stations vary between 25-50% efficiency. 50% can be obtained on outposts, but it is costly for the outpost owner, as it costs 100 billion ISK for the service.

Unfortunately, the 100% efficiency can't be obtained even with implants (and using your skills, on a station with 50% efficiency).

Even you want to refine on a 'strong' station or on an outpost in high-sec, suggested to train Reprocessing Efficiency to level V. Training it, will give you access to the Scrapmetal Processing skill, which takes the place of Ore Processing skill in the calculation above when you want to reprocess modules, ships and loot of drones.

If you want to know how much the reprocessing efficiency of the station is, open the Reprocessing window on the station panel and check the tooltip of the refinable items (in this case: Veldspar ore) on the left-hand side.



The base yield shows the refining efficiency of the station as a percentage.

If your standing is not high enough toward the owner of the station, then you are going to pay the amount of tax after your refined ores indicated by the **red** marked text. It is always taken from the minerals gained by the ores.

The total efficiency, indicated with the Veldspar reprocessing yield, sums up the combined efficiency of your skills, implants (if used) and the efficiency of the station, and the amount lost. The quantity in the right side 'Output results' is the amount you actually receive.

Whenever we talk about refining yield, tax is never included.

On the picture, the Base Yield (%) is always shown as the status without skills. If you want to refine on an NPC station without paying taxes, you are going to need at least 6.7 in standing towards the owner corporation.

On outposts and player owned stations, tax is always taken.

Reprocessing Yield On 50% Base Yield Station

Reprocessing Skill lvl.		0	1	2	3	4	5	5	5	5	5	5
Reprocessing Efficency Skill lvl.		0	0	0	0	0	0	1	2	3	4	5
Ore Processing Skill lvl.	0	50,00%	51,50%	53,00%	54,50%	56,00%	57,50%	58,65%	59,80%	60,95%	62,10%	63,25%
	1	*Without Implants*				57,12%	58,65%	59,82%	61,00%	62,17%	63,34%	64,52%
	2					58,24%	59,80%	61,00%	62,19%	63,39%	64,58%	65,78%
	3					59,36%	60,95%	62,17%	63,39%	64,61%	65,83%	67,05%
	4					60,48%	62,10%	63,34%	64,58%	65,83%	67,07%	68,31%
	5					61,60%	63,25%	64,52%	65,78%	67,05%	68,31%	69,58%
	0	51,00%	52,53%	54,06%	55,59%	57,12%	58,65%	59,82%	61,00%	62,17%	63,34%	64,52%
	1	*Zainou 'Beancounter' Reprocessing RX-802*				58,26%	59,82%	61,02%	62,22%	63,41%	64,61%	65,81%
	2					59,40%	61,00%	62,22%	63,44%	64,66%	65,88%	67,10%
	3					60,55%	62,17%	63,41%	64,66%	65,90%	67,14%	68,39%
	4					61,69%	63,34%	64,61%	65,88%	67,14%	68,41%	69,68%
	5					62,83%	64,52%	65,81%	67,10%	68,39%	69,68%	70,97%
	0	52,00%	53,56%	55,12%	56,68%	58,24%	59,80%	61,00%	62,19%	63,39%	64,58%	65,78%
	1	*Zainou 'Beancounter' Reprocessing RX-804*				59,40%	61,00%	62,22%	63,44%	64,66%	65,88%	67,10%
	2					60,57%	62,19%	63,44%	64,68%	65,92%	67,17%	68,41%
	3					61,73%	63,39%	64,66%	65,92%	67,19%	68,46%	69,73%
	4					62,90%	64,58%	65,88%	67,17%	68,46%	69,75%	71,04%
	5					64,06%	65,78%	67,10%	68,41%	69,73%	71,04%	72,36%

Reprocessing Yield On 40% Base Yield Station

Reprocessing Skill lvl.		0	1	2	3	4	5	5	5	5	5	5
Reprocessing Efficency Skill lvl.		0	0	0	0	0	0	1	2	3	4	5
Ore Processing Skill lvl.	0	40,00%	41,20%	42,40%	43,60%	44,80%	46,00%	46,92%	47,84%	48,76%	49,68%	50,60%
	1	*Without Implants*				45,70%	46,92%	47,86%	48,80%	49,74%	50,67%	51,61%
	2					46,59%	47,84%	48,80%	49,75%	50,71%	51,67%	52,62%
	3					47,49%	48,76%	49,74%	50,71%	51,69%	52,66%	53,64%
	4					48,38%	49,68%	50,67%	51,67%	52,66%	53,65%	54,65%
	5					49,28%	50,60%	51,61%	52,62%	53,64%	54,65%	55,66%
	0	40,80%	42,02%	43,25%	44,47%	45,70%	46,92%	47,86%	48,80%	49,74%	50,67%	51,61%
	1	*Zainou 'Beancounter' Reprocessing RX-802*				46,61%	47,86%	48,82%	49,77%	50,73%	51,69%	52,64%
	2					47,52%	48,80%	49,77%	50,75%	51,72%	52,70%	53,68%
	3					48,44%	49,74%	50,73%	51,72%	52,72%	53,71%	54,71%
	4					49,35%	50,67%	51,69%	52,70%	53,71%	54,73%	55,74%
	5					50,27%	51,61%	52,64%	53,68%	54,71%	55,74%	56,77%
	0	41,60%	42,85%	44,10%	45,34%	46,59%	47,84%	48,80%	49,75%	50,71%	51,67%	52,62%
	1	*Zainou 'Beancounter' Reprocessing RX-804*				47,52%	48,80%	49,77%	50,75%	51,72%	52,70%	53,68%
	2					48,46%	49,75%	50,75%	51,74%	52,74%	53,73%	54,73%
	3					49,39%	50,71%	51,72%	52,74%	53,75%	54,77%	55,78%
	4					50,32%	51,67%	52,70%	53,73%	54,77%	55,80%	56,83%
	5					51,25%	52,62%	53,68%	54,73%	55,78%	56,83%	57,89%

Reprocessing Yield On 35% Base Yield Station

Reprocessing Skill lvl.		0	1	2	3	4	5	5	5	5	5	5
Reprocessing Efficency Skill lvl.		0	0	0	0	0	0	1	2	3	4	5
Ore Processing Skill lvl.	0	35,00%	36,05%	37,10%	38,15%	39,20%	40,25%	41,06%	41,86%	42,67%	43,47%	44,28%
	1	*Without Implants*				39,98%	41,06%	41,88%	42,70%	43,52%	44,34%	45,16%
	2					40,77%	41,86%	42,70%	43,53%	44,37%	45,21%	46,05%
	3					41,55%	42,67%	43,52%	44,37%	45,22%	46,08%	46,93%
	4					42,34%	43,47%	44,34%	45,21%	46,08%	46,95%	47,82%
	5					43,12%	44,28%	45,16%	46,05%	46,93%	47,82%	48,70%
	0	35,70%	36,77%	37,84%	38,91%	39,98%	41,06%	41,88%	42,70%	43,52%	44,34%	45,16%
	1	*Zainou 'Beancounter' Reprocessing RX-802*				40,78%	41,88%	42,71%	43,55%	44,39%	45,23%	46,06%
	2					41,58%	42,70%	43,55%	44,41%	45,26%	46,11%	46,97%
	3					42,38%	43,52%	44,39%	45,26%	46,13%	47,00%	47,87%
	4					43,18%	44,34%	45,23%	46,11%	47,00%	47,89%	48,77%
	5					43,98%	45,16%	46,06%	46,97%	47,87%	48,77%	49,68%
	0	36,40%	37,49%	38,58%	39,68%	40,77%	41,86%	42,70%	43,53%	44,37%	45,21%	46,05%
	1	*Zainou 'Beancounter' Reprocessing RX-804*				41,58%	42,70%	43,55%	44,41%	45,26%	46,11%	46,97%
	2					42,40%	43,53%	44,41%	45,28%	46,15%	47,02%	47,89%
	3					43,21%	44,37%	45,26%	46,15%	47,03%	47,92%	48,81%
	4					44,03%	45,21%	46,11%	47,02%	47,92%	48,83%	49,73%
	5					44,84%	46,05%	46,97%	47,89%	48,81%	49,73%	50,65%

Reprocessing Yield On 30% Base Yield Station

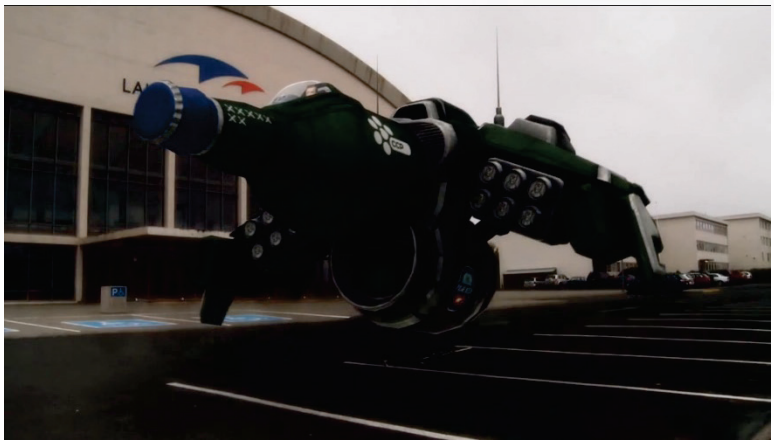
Reprocessing Skill lvl.		0	1	2	3	4	5	5	5	5	5	5
Reprocessing Efficency Skill lvl.		0	0	0	0	0	0	1	2	3	4	5
Ore Processing Skill lvl.	0	30,00%	30,90%	31,80%	32,70%	33,60%	34,50%	35,19%	35,88%	36,57%	37,26%	37,95%
	1	*Without Implants*				34,27%	35,19%	35,89%	36,60%	37,30%	38,01%	38,71%
	2					34,94%	35,88%	36,60%	37,32%	38,03%	38,75%	39,47%
	3					35,62%	36,57%	37,30%	38,03%	38,76%	39,50%	40,23%
	4					36,29%	37,26%	38,01%	38,75%	39,50%	40,24%	40,99%
	5					36,96%	37,95%	38,71%	39,47%	40,23%	40,99%	41,75%
	0	30,60%	31,52%	32,44%	33,35%	34,27%	35,19%	35,89%	36,60%	37,30%	38,01%	38,71%
	1	*Zainou 'Beancounter' Reprocessing RX-802*				34,96%	35,89%	36,61%	37,33%	38,05%	38,77%	39,48%
	2					35,64%	36,60%	37,33%	38,06%	38,79%	39,53%	40,26%
	3					36,33%	37,30%	38,05%	38,79%	39,54%	40,29%	41,03%
	4					37,01%	38,01%	38,77%	39,53%	40,29%	41,05%	41,81%
	5					37,70%	38,71%	39,48%	40,26%	41,03%	41,81%	42,58%
	0	31,20%	32,14%	33,07%	34,01%	34,94%	35,88%	36,60%	37,32%	38,03%	38,75%	39,47%
	1	*Zainou 'Beancounter' Reprocessing RX-804*				35,64%	36,60%	37,33%	38,06%	38,79%	39,53%	40,26%
	2					36,34%	37,32%	38,06%	38,81%	39,55%	40,30%	41,05%
	3					37,04%	38,03%	38,79%	39,55%	40,31%	41,08%	41,84%
	4					37,74%	38,75%	39,53%	40,30%	41,08%	41,85%	42,63%
	5					38,44%	39,47%	40,26%	41,05%	41,84%	42,63%	43,41%

Reprocessing Yield On 25% Base Yield Station

Reprocessing Skill lvl.		0	1	2	3	4	5	5	5	5	5	5
Reprocessing Efficency Skill lvl.		0	0	0	0	0	0	1	2	3	4	5
Ore Processing Skill lvl.	0	25,00%	25,75%	26,50%	27,25%	28,00%	28,75%	29,33%	29,90%	30,48%	31,05%	31,63%
	1	*Without Implants*				28,56%	29,33%	29,91%	30,50%	31,08%	31,67%	32,26%
	2					29,12%	29,90%	30,50%	31,10%	31,69%	32,29%	32,89%
	3					29,68%	30,48%	31,08%	31,69%	32,30%	32,91%	33,52%
	4					30,24%	31,05%	31,67%	32,29%	32,91%	33,53%	34,16%
	5					30,80%	31,63%	32,26%	32,89%	33,52%	34,16%	34,79%
	0	25,50%	26,27%	27,03%	27,80%	28,56%	29,33%	29,91%	30,50%	31,08%	31,67%	32,26%
	1	*Zainou 'Beancounter' Reprocessing RX-802*				29,13%	29,91%	30,51%	31,11%	31,71%	32,30%	32,90%
	2					29,70%	30,50%	31,11%	31,72%	32,33%	32,94%	33,55%
	3					30,27%	31,08%	31,71%	32,33%	32,95%	33,57%	34,19%
	4					30,84%	31,67%	32,30%	32,94%	33,57%	34,20%	34,84%
	5					31,42%	32,26%	32,90%	33,55%	34,19%	34,84%	35,48%
	0	26,00%	26,78%	27,56%	28,34%	29,12%	29,90%	30,50%	31,10%	31,69%	32,29%	32,89%
	1	*Zainou 'Beancounter' Reprocessing RX-804*				29,70%	30,50%	31,11%	31,72%	32,33%	32,94%	33,55%
	2					30,28%	31,10%	31,72%	32,34%	32,96%	33,58%	34,21%
	3					30,87%	31,69%	32,33%	32,96%	33,60%	34,23%	34,86%
	4					31,45%	32,29%	32,94%	33,58%	34,23%	34,88%	35,52%
	5					32,03%	32,89%	33,55%	34,21%	34,86%	35,52%	36,18%

Mining in Frigate?

Every race had its own mining vessel among frigates and cruisers. But, these ships lost their abilities.



So we can only rely on the cargo hold and the amount of high turret slots. There are a new mining frigate comes with the Retribution, called the Venture (you can see it on the next page).

ORE - Outer Ring Excavations

It is the father of all miner corporations and every ship specialized in mining is its invention; barges, exhumers, the Orca and the Rorqual.

You probably noticed the O.R.E. miners appearing amongst the lasers in the charts. Their common feature is their increased range. In every other way, they are equivalent to the Tech II modules.

The only problem is that it is nearly impossible is to obtain them. Likewise, the 'Harvest' implant set is very difficult to find. This implant set increases the range of the mining lasers, and is also a low-grade implant set (grants +2 to the basic attributes).

Both can be obtained in the O.R.E. Loyalty Point (LP) store. Why is it nearly impossible to get them? Take a look on the map, and you will find out: The entire Outer Ring region is deep in 0.0 space.

What's the LP Store? After finishing the agent missions, you will receive Loyalty Points which can be redeemed in the LP Store on any station owned by the NPC Corporation you are working for. The offers at the LP stores can be found here: **www.ellatha.com/eve/LP_Stores.asp**.

Venture – The Cheap Chap

Designed as an entry level mining ship, it will replace the old 4 mining frigates in the mining Path *(the Tormentor, Bantam, Navitas and Burst)*. Compared to them, it has a much improved mining output, capacitor reliance and mobility, while having a decent 5000m^3 ore hold.

It also serves as a gas harvester, a profession that was lacking love until now. With its +2 warp core strength bonus, it should stand a fair chance of doing its job in low-security space without being instantly tackled and killed.

The necessary skill to use is the: Mining Frigate, since it's a Rank 2 skill, easy to learn up to level 4 (or 5). Because it's the entry ship for mining, the ship's market price is low. You can fit an MLU II on this ship (with appropriate rigs and implants) and/or you can give it a decent shield tank too.

Mining frigate skill bonuses:
+5% to mining yield per level
5% to gas harvesting duration reduction per level

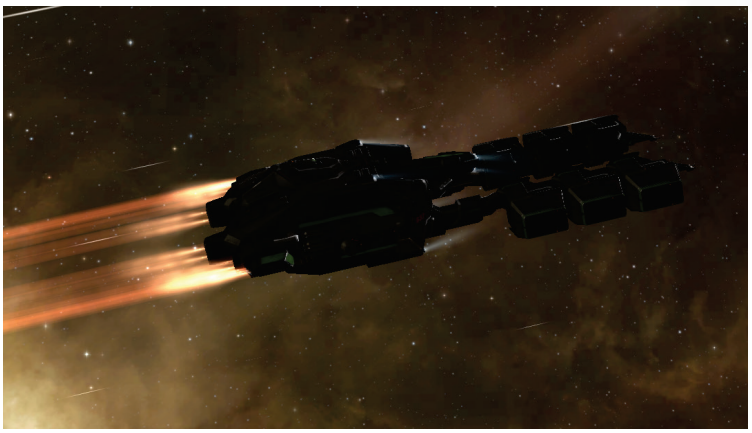
Role bonuses:
+100% to mining yield
+100% to gas harvesting yield
+ 2 warp core stabilizer bonus

Slot layout: 3 H, 3 M, 1 L, 2 turrets

Cargo capacity: 50
Ore bay: 5000m^3

Prospect – The Ninja Miner

After the runaway success of the Venture mining frigate, ORE spun up their growing frontier exploration and exploitation division into a new subsidiary called Outer Ring Prospecting.



The first fruits of this endeavor came in the form of a new Tech II mining frigate, based on the Venture hull.

The Prospect is the first ORE ship capable of using Covert Ops Cloaking Devices, allowing it to warp while cloaked and move securely through many dangerous situations. The Prospect is small, fast and agile enough to avoid most hostile fire, but manages to pack an upgraded mining fit and larger ore bay into its compact frame.

The larger cargo hold is sufficient to comfortably carry a Mobile Depot, greatly expanding its options once it arrives at its destination.

Mining Frigate Bonus per level:
+5% Mining Laser yield
-5% Gas Harvester duration
Expedition Frigate Bonus per level:
+5% Mining Laser yield
-5% signature radius

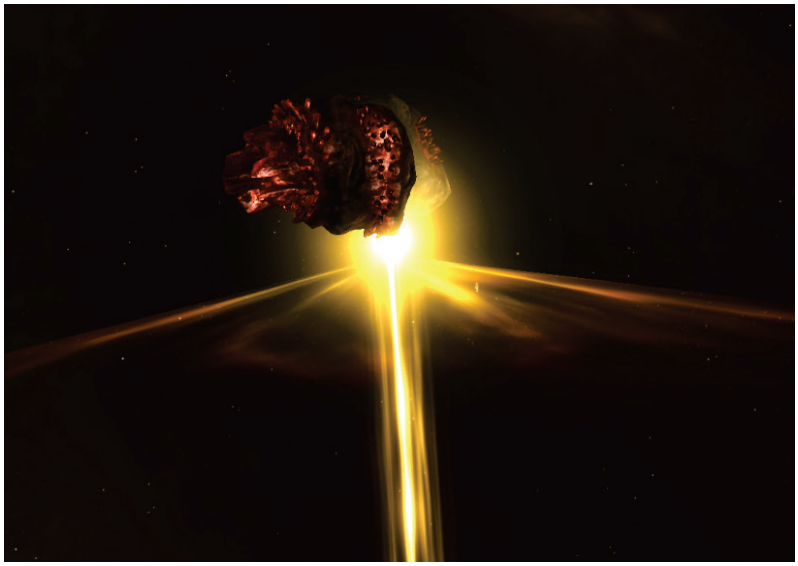
Role Bonuses:
+100% Bonus to Mining Laser and Gas Harvester Yield
-100% Cloaking Device CPU use
Can fit Covert Ops Cloaking Devices and Covert Cynos. Cloak reactivation delay reduced to 5 seconds.

Slot layout: 3H, 3M, 4L; 2 Turrets

Cargo Capacity: 150m^3
Ore bay: 10,000m^3

Mining Barge Or Battleship?

It is a frequently asked question. The simple answer is: both, because you will not always mine, but which one should be first? Most of the skills used for mining are not ship-specific (Mining, Astrogeology, etc.), so the question is: do you want to PvP or do agent missions as well?



If you do (missions), you are going to need those battleship skills. But if you only want to mine all of your life, you can reach the level of a professional miner only choosing the barge. Note that a few battleships can mine as much or a bit more as the middle-class mining barge (the Retriever), but it depends on your skills and on the ship.

If you have chosen the barge route, the Retriever is recommended right at the beginning. It is the best until you reach the level of the exhumers. Now, let's see how good you are at EVE-math.

The Battlesheep Returns

The two most popular battleships for mining are the Apocalypse (Amarr, Tier 2) and the Rokh (Caldari, Tier 3). For a long time the 'Golden Banana' Apocalypse has been the best mining battleship, but lately the new king of the jungle is the 'Police Baton' Rokh.

The reason is simple: mining requires a lot of CPU and the latter one has a lot more, which means the Rokh can fit +1 Mining Laser Upgrade, thus it has bigger yield. So far, there are no battleships with a skill bonus for mining. What matters are the turret hard points and the CPU.

Hopefully, you already have Mining IV and Astrogeology IV. Unless you specialize in Mining Barge, you are going to need Mining Upgrades IV to be able to put more MLU on to improve the efficiency of your ship. You should already have CPU management V, since most fitting setups depend strongly on the CPU of the ship.

The MLU is key to your battleship mining output, making it competitive with the Retriever or the Hulk.

Dominix

Potatoes from potato land. Or something like that. The real reason to use a Dominix for mining lies in its large drone bay, which makes it ideal for just that: mining with drones. If we fit a couple (6 to be precise) Miner IIs in the high slot the yield will be quite nice.

Although it might sound strange, with maxed out skills a Dominix using drones, lasers and 3pcs of MLU IIs will have a theoretical maximum yield of 1041m^3 / minute (728m^3 from the turrets and 313m^3 from the drones)

Apocalypse

The glorious golden banana (I know, it's have a new model, but, hey it's the good ol' banana! I'm sorry ☺) can be outfitted with 8 Miner IIs in the high slot and can also field 3 MLU IIs (although in order to make this fit work you will have to use 4 CPU IIs and a CPU rig – or a +5% implant).

The Apoc will then grant us a theoretical maximum yield of 1284 m^3 / minute (971m^3 from the turrets and 313m^3 from the drones). The only problem is that with this fit there is literally no room for a tank! So you are left with a *Glass* Glorious Golden Banana. ☺

In short: the Apocalypse will give 23% more yield than a Dominix. The drone bay of 75m^3 will allow you to field a full flight (5) of medium as well as full flight of miner drones.

Rokh

The Rokh was first introduced in the Revelations patch and is quite a nice ship. The fact that it outperforms our previous contestant the Apoc makes it even more beautiful. ☺ If this wasn't enough for the final blow here is this: it can even field a considerable tank. You can fit 4 MLU IIs on this ship (with appropriate rigs and implants) or you can opt for a bigger tank and go with 3 MLU IIs.

Let us not forget about the drone bay. Where you can tuck away 5 Tech II drones for "extra protection". For the purpose of this guide, we will use a full mining Rokh setup. But, you should know the Rokh is superior to the Apocalypse in every way as a mining platform.

Let's see this by the numbers: 1371 m^3 / minute (1059 m^3 by the turrets and 313 m^3 by the drones).

Even if it's not a whole lot more it's still a bit more than the Apoc making the Rokh the best mining battleship.

The Barge Way

The Mining Barges' main aim (apart from *other* uses ☺) is mining. The basic conception is following the rock-paper-scissor concept, because we have to choose between:

- Relative large effective HP
- Large ore hold
- Exceptional mining performance

Procurer

First of the lot, is this smallish ship. Its miniature size is offset by the fact that it is one of the best tanking mining vessels. This fact may come in handy when you are mining in a hostile area full of suicide gankers.

Although only one Strip Miner can be fitted the surprising bonus (-10% Duration and 150% amount at level 5 – With 12000 m^3 Ore hold) will raise some eyebrows for sure. It also receives some bonuses on the Ice Harvesters cycle and capacitor usage (60%). In respect for skills needed it is really light on the skill tree with only Astrogeology III and Mining Barge I needed to fly this ship.

Retriever

A big advantage of the retriever is that it uses strip miners. Which means a longer cycle (less dragging) and is much cheaper than a battleship.

The ships edge over its little sister ship is its 22.000 m^3 ore hold. This can be enlarged further by training the Mining Barge skill to level 5. In this case the ore hold bloats up to 27.500m^3. This is the same amount a JetCan can hold, mind you! ☺

This ship is fitted with two turret slots for Strip Miners and it also receives a 25% bonus on the mining amount (and another 2% by skill level, so it's can be 35% at level V!). Ice Harvesters come in a little short but their bonus of 20% is still worthy of consideration.

Although not required, training to Astrogeology 5 is recommended. Firstly: because this level is required for the exhumers. Secondly it gives a fair amount of bonus (25%) for the mining yield.

Covetor

The king of mining yield in the field of Mining Barges. 3 strip miners and a per level bonus on both fields (4% ore and ice harvester cycle duration boost) and +5% Strip Miner and Ice Harvester optimal range is the reason why this ship is so popular in miner circles.

Although we have to make a compromise in this case too: even with the high yield, this ship is not a tank like the procurer, nor does it have the large ore hold of the retriever.

Still, the ore hold of 7,000m^3 is not something to be sad about. But, you have to have a hauler in the team. As hauling the ores in to the stations every 1-2 cycles really gimps the profit you gain by the increased yield.

The Covetor is much cheaper than a battleship. Also the 3 Strip Miner allows you to mine 3 asteroids at a time – considerably reducing the danger of involuntarily popping an asteroid.

Comparing the Mining Barges

In the table below you'll see the main characteristics of these three vessels. It is worth to mention that you should always employ the ship that is best suited for the job. Meaning if you mine alone in high sec, it is probably a good idea to use a retriever – unless of course it's Hulkageddon time! ☺

The values in the table always represent the performance with the minimum skill requirements (Mining level V, Mining Barge level I, Astrogeology level III and a Strip Miner I) without the aid of a tank or yield-improvement modules. In the second part of the table you'll see the perfect skilled battleships (Astrogeology level III, and using Miner IIs), but in their case the base cargohold is considered and the yield is projected for three cycles (to match the cycle of the Strip Miners).

Ship	EHP	Ore Hold	Yield (m^3 / 3 minutes)
Procurer	**26 996**	12 000 m^3	1 980 m^3
Retriever	9 614	**23 100 m^3**	1 980 m^3
Covetor	7 213	7 000 m^3	**2 430 m^3**
Dominix (w/o Drones!)	37 854	600 m^3	1 553 m^3
Apocalypse	32 058	675 m^3	2 070 m^3
Rokh	**40 657**	625 m^3	**2 070 m^3**

The wonderful world of the Exhumers

So you managed to advance to the king of the asteroid belts: the Exhumers. If you liked the Mining Barges you will **love** these ships! Following the 'tradition' of the Mining Barges all three Exhumers have a unique speciality. They come with increased resists and need more skills from the get go (and they mine better, than their Tech I cousins) and oh yes, they cost a hell of a lot more. :-/

It is important to note that although all ships only need Exhumers level 1, it is advised (especially in the case of the Hulk) to train for level 4 or even level 5. Why? The reason is simple. It receives a per-level boost on Strip Miners and on Ice Harvesters! So between level 1 and level 5 there is a huge improvement on Strip Miners, and on Ice Harvesters as well.

Skiff

The smallest of the big brothers has its usefulness in the high effective HP and the really nice yield. As well as the comfortable 15,000m^3 ore hold. While the Skiff only uses one Strip Miner at a time. The question may rise "what is this good for?" The answer is simple: it is really cost-efficient because it will use only one crystal at a time.

2% Strip Miner and Ice Harvester duration per Mining Barge skill level, the +150% Bonus to Strip Miner yield by role bonus and the added 2% yield on ore and ice per Exhumer level is really just icing on the cake. Oh, and the -60% Ice Harvester duration and capacitor use can be good as well.

Mackinaw

Middle of the lot, considering we look at yields: -2% Strip Miner and Ice Harvester duration by Mining Barge and Exhumers Skill level, +25% Bonus to Strip Miner yield as a role bonus.

Because the Mackinaw has the largest ore hold in the fleet (measuring a whopping 35,000m^3) it is considered the king of AFK / high sec mining. Because of this its price has gone up ever since and has reached the price tag of the Hulk.

Hulk

So we finally reached the pinnacle of evolution, the king of mining: the Hulk. As every Exhumer has a speciality, the Hulk has unrivalled yield.

The ore hold of 8,500 m^3 is not small either but it is nothing compared to the Mackinaws 35k m^3. With these parameters set, the real application of the Hulk is really just a guess away: it is best suited to work in teams.

If an Orca or a Rorqual can give bonuses and the transportation of mined ores is given then there is no better ship for mining then a maxed-out Hulk. Boosted by MLU IIs and fleet bonuses, the yields can go to extremes.

What makes this ship really the king of all miners? It's in the bonuses, baby! Apart from the fact that it has three slots ready to be used by Strip Miners or Ice Harvesters, it receives a 25% range bonus from the Mining Barge skill (5% per level, but since level 5 is required, you'll have this from the start). Also it receives a 3% Strip Miner and Ice Harvester cycle duration bonus per Exhumers level!

Exhumers compared

In the table below you will see what an otherwise perfectly skilled miner can expect at every ship (apart from having only **Exhumers trained to level 1**) without Mining Laser Upgrades.

Ship	EHP	Ore Hold	Yield (m^3 / 3 minutes)
Skiff	**32 278**	15 000 m^3	2 394 m^3
Mackinaw	13 022	**35 000 m^3**	2 394 m^3
Hulk	9 784	8 500 m^3	**3 258 m^3**

Is it worth the time and money?

The most important questions you should ask yourself are: "Is the increased investment worth a bigger ship?", "Will you be able to fully utilize the potential of that ship?" It takes hours, even days, 'till you have mined back the value of the ship. Even then you are just out of the red and did not earn any extra. Best example for this is the Hulk: it is only 10% better than the Covetor, yet the price difference is enormous: a Hulk costs 6-10 times as much (true, it has a better yield and a better tank). If you mine alone in a deserted solar system, the Mackinaw is probably the best to use as you will have to make fewer turns. The time it takes for the Return of Investment (ROI) to break even is greatly influenced by the ore you mine, where you mine and how long you mine. Mining in 0.0 will net you better profits – although at higher risks – and will have a better ROI than mining Veldspar in high-sec.

Battleships, Barges and Exhumers

In the table below, all relevant skills are maxed out for the sake of comparing the options available. Fleet bonuses are not applied in this table for simplicity's sake, nor are MLUs applied for the same reason. To have a broader picture, the yield from the drones is included.

Ship	EHP	Ore Hold	Yield (m^3 / 3 Minutes)
Mining Drone I x 5	–	–	187,8 m^3 / round
Mining Drone II x 5	–	–	309,6 m^3 / round
Dominix (W/O Drones!)	37 854	600 m^3	1688,4 m^3
Apocalypse	32 058	675 m^3	2251,2 m^3
Rokh	**40 657**	625 m^3	2251,2 m^3
Procurer	29 065	12 000 m^3	2340 m^3
Retriever	9 613	27 500 m^3	2340 m^3
Covetor	7 213	7 000 m^3	3168 m^3
Skiff	35 195	15 000 m^3	2610 m^3
Mackinaw	14 100	**35 000 m^3**	2610 m^3
Hulk	10 574	8 500 m^3	**3726 m^3**

Mining Mercoxit

Morphite can only be refined from Mercoxit (apart from the Opulent Compound that was dropped from drones). The reason for its high price was the difficulty of Mercoxit mining. It required crystals and many skills to be trained. The 40m³ of size of the ore made it worse, as it is difficult to transport as it takes up so much space. If you can mine other ores, you need only more one skill to mine Mercoxit and that is Deep Core Mining level II. Training it further would be waste of time. True, poisonous gas clouds can develop which can inflict your ship, but if someone with a laser with a range 15km range goes to 5km of a gas cloud (that is the range of the lethal effects of gas clouds), he deserves his fate. In short, do not go closer than 5km and there is no chance of any danger from the cloud.

Like previously, all relevant skills are now level 5 but no MLUs or other boosting modules apply. The required modules are as follows:

Module name	Base Yield (m³ / 3 min) / Module	T1 Crystal (m³ / 3 min) / Module	T2 Crystal (m³ / 3 min)	
			/ Module	With Max. Turrets
Deep Core Mining Laser I **Apocalypse (x6)**	187,5 m³	—	—	1125 m³
Modulated Deep Core Miner II (MDCM2) **Apocalypse (x8)**	187,5 m³	234 m³	258 m³	2064 m³
Modulated Deep Core Strip Miner II (MDCSM2) **Retriever (x2)**	541,8 m³	678,6 m³	745,2 m³	1492,2 m³
Modulated Deep Core Strip Miner II (MDCSM2) **Covetor (x3)**	487,8 m³	610,2 m³	645 m³	2014,2 m³
Modulated Deep Core Strip Miner II (MDCSM2) **Mackinaw (x2)**	603 m³	754,2 m³	828 m³	1657,2 m³
Modulated Deep Core Strip Miner II (MDCSM2) **Hulk (x3)**	574,2 m³	718,2 m³	790,2 m³	2376 m³

On the surface, it seems like the Apocalypse is beating the miners in their own game (except the Hulk), but if you look closely the limited cargo hold of the Apocalypse is only good for a go-between hold between the mining lasers and a JetCan. On top of this the Mining Barges and the Exhumers benefit greatly from the rigs that boost mining effectiveness.

Rig name	Effect
Medium Mercoxit Mining Crystal Optimization I	This ship modification is designed to increase the yield modifier of those modules using Mercoxit mining crystals. (+16%)

Ice Harvesting

Ice mining has an altogether different line of skills than that of the traditional ore mining. Instead of increasing the yield, skills decrease the time necessary for a whole cycle (one block of ice is 1,000m^3, and that is fixed). So better skills means that you can reach more cycles per hour, which means more ice. The only lasers able to mine ice are the Ice Harvester I (a strip miner) and its Tech II version (there is an O.R.E. type as well, but it is as easy to get as the other O.R.E. lasers – i.e. next to impossible). The ice mining equipment can only be fitted on barges or exhumers. Their difference is only in their cycle times, which are less in the case of Tech II version.

Module	Cycle time(sec.)	Optimal Range
Ice Harvester I	300 s	10 km
ORE Ice Harvester	250 s	12 km
Ice Harvester II	250 s	10 km

Every time the cycle ends, you get a block of ice, but only at the end. You will not get any if you cancel the cycle before it ends (or if you are disconnected from the net, or you get too far from the ice). The only skill that modifies your yield is Ice Harvesting. It reduces the cycle time, so that you gain more ice per hour. The module equivalent to an MLU is the IHU (Ice Harvester Upgrade) that also reduces the cycle time by 5%. The following implants and Rig are also helpful when you are mining ice:

Type	Name	Effect
Implant	Inherent Implants 'Yeti' Ice Harvesting IH-10xx	This ship modification is designed to increase the yield modifier of those modules using Mercoxit mining crystals. (1%, 3%, 5%)
Rig	Medium Ice Harvester Accelerator I	This ship modification is designed to reduce the duration of ice harvester cycles. (12%)

Mining ice, but where? With what?

All static ice belts have been removed, and replaced with ice anomalies that will always spawn in the same systems that previously had the belts. These anomalies will respawn in the same system four hours after they are completed, can be found in the scanner overlay.

Every system that previously contained a static ice belt will contain the new ice anomalies, with the exception of some high security systems in Amarr, Khanid and Ammatar territory.

The complete list of high security systems that will contain Clear Icicle anomalies is: Afivad, Agal, Avada, Bashakru, Chanoun, Dantan, Dihra, Erkinen, Esteban, Gamis, Gelhan, Gosalav, Jarzalad, Jerma, Kothe, Manatirid, Miah, Moutid, Ordion, Raravoss, Riavayed, Seil, Talidal, Warouh.

The composition of these anomalies will be as follows:

Area	Ice
Highsec	2500 units of standard racial ice.
Lowsec	3000 units of standard racial ice.
	400 units of Glare Crust.
Nullsec with weak true sec (0.0 to -0.5)	3000 units of improved racial ice.
	400 units of Glare Crust.
	500 units of Dark Glitter.
	200 units of Gelidus.
Nullsec with strong true sec (-0.5 to -1.0)	3500 units of improved racial ice.
	1000 units of Dark Glitter.
	400 units of Glare Crust.
	200 units of Gelidus.
	250 units of Krystallos

Basically every Mining Barge or Exhumer is fit for mining ice (because they can fit the Ice Harvesters). But, it is important to look at the goal you want to achieve and use the appropriate tool for the job (a bigger tank, a large ore hold or the best yield.) In the table below we will take a look at the yield with perfect skills (without the aid of rigs or IHUs) the number of Ice Harvesters is included in brackets.

Ship	EHP	Ore Hold	Ice Harvester Cycle Time		Ice / Hour	
			Tech 1	Tech 2	Tech 1	Tech 2
Procurer (x1)	**26 996**	12 000 m^3	75 s	63 s	48	57
Retriever (x2)	9 614	**27 500 m^3**	150 s	125 s	48	56
Covetor (x3)	7 213	7 000 m^3	192 s	159 s	**54**	**66**
Skiff (x1)	**32 600**	15 000 m^3	71 s	60 s	50	60
Mackinaw (x2)	14 500	**35 000 m^3**	143 s	119 s	50	60
Hulk (x3)	10 900	8 500 m^3	180 s	150 s	**60**	**72**

To mimic life more this table contains the same data. But with the maximum number of Ice Harvester Upgrade IIs and Medium Ice Harvester Accelerator I fitted (and also added IH-1005 implant which gives a 5% reduction on Ice Harvesters cycle duration).

Ship	EHP	Ore Hold	Ice Harvester Cycle Time		Ice / Hour	
			Tech 1	Tech 2	Tech 1	Tech 2
Procurer (x1)	**26 500**	12 000 m^3	81,3 s	67,5 s	44	53
Retriever (x2)	9 610	**27 500 m^3**	81,3 s	67,5 s	44	53
Covetor (x3)	7 210	7 000 m^3	59,88 s	50 s	**60**	**72**
Skiff (x1)	**32 278**	15 000 m^3	72,99 s	60,6 s	49	59
Mackinaw (x2)	13 022	**35 000 m^3**	72,99 s	60,6 s	49	59
Hulk (x3)	9 784	8 500 m^3	51,02 s	42,55 s	**70**	**84**

One small anomaly that may catch the eye: the Procurer and the Retriever go side-by-side. The difference is simple: while the Procurer has 12 000 m^3 orehold but bigger EHP (12 x Ice), the Retriever has 27 500 m^3 (27 x Ice) but easier to kill / lose it. This is apply on the Skiff versus Mackinaw as well. We have to decide: More cargo capacity or better Armor on the ship.

Ice Refining Table

		m³ (1)	Batch:	Heavy Water	Liquide Ozone	Strontium Clathrates	Oxygen Isotopes	Nitrogen Isotopes	Helium Isotopes	Hydrogen Isotopes
	Blue Ice	1000	1	69	36	1	414			
	Thick Blue Ice	1000	1	104	55	1	483			
	Clear Icicle	1000	1	69	36	1			414	
	Enriched Clear Icicle	1000	1	104	55	1			483	
	Glacial Mass	1000	1	69	35	1				414
	Smooth Glacial Mass	1000	1	104	55	1				483
	White Glaze	1000	1	69	35	1		414		
	Pristine White Glaze	1000	1	104	55	1		483		
	Krystallos	1000	1	173	691	173				
	Gelidus	1000	1	345	691	104				
	Glare Crust	1000	1	1381	691	35				
	Dark Glitter	1000	1	691	1381	69				

Implants, Upgrades, Rigs for mining

There are many skills and modules which can increase your mining yield. It is possible to gain the 'Perfect Miner' title, by training every skill to its maximum level and having the best modules, implants, ship, equipment and assisting group. The Perfect Miner has reached the top, and there is nothing else which could increase the yield any higher than what he already has.

Implants

The Mining Foreman Links and gang modules are not on the list, because they cannot be fitted on battleships or barges. The gang modules will be shown in a later chapter. Be advised that the implant slots are shared between the mining yield increasing, ice mining implants and fleet-booster implants and you only have one head.

The Michi implant can be obtained in COSMOS. That is the reason for its high price, and why it is so difficult to acquire.

Name	Effect
Inherent Implants 'Yeti' Ice Harvesting IH-1001	-1% decrease in ice harvester cycle time.(Cybernetics I)
Inherent Implants 'Yeti' Ice Harvesting IH-1003	-3% decrease in ice harvester cycle time. (Cybernetics III)
Inherent Implants 'Yeti' Ice Harvesting IH-1005	-5% decrease in ice harvester cycle time.(Cybernetics V)
Inherent Implants 'Highwall' Mining Upgrades MU-1001	1% reduction in CPU penalty of mining upgrade modules. (i.e.: 10% → 9.9%)
Inherent Implants 'Highwall' Mining Upgrades MU-1003	3% reduction in CPU penalty of mining upgrade modules. (i.e.: 10% → 9.7%)
Inherent Implants 'Highwall' Mining Upgrades MU-1005	5% reduction in CPU penalty of mining upgrade modules. (i.e.: 10% → 9.5%)
Inherent Implants 'Highwall' Mining MX-1001	1% bonus to mining yield. (Cybernetics I)
Inherent Implants 'Highwall' Mining MX-1003	3% bonus to mining yield. (Cybernetics III)
Inherent Implants 'Highwall' Mining MX-1005	5% bonus to mining yield. (Cybernetics V)
Michi Excavation Augmentor (slot 7)	5% bonus to mining yield of mining lasers. (Cybernetics V)
Mining Foreman Mindlink (slot 10)	25% increase to the command bonus of Mining Foreman Link modules. Replaces Mining Foreman skill bonus with fixed 15% mining yield bonus. (Only in fleet!)

Upgrades

The following modules can increase the efficiency your mining lasers / ice harvesters at the cost of increased CPU usage:

	Name	Meta Group	Meta Level	Yield bonus	CPU Penalty	CPU	PG
	Mining Laser Upgrade I	Tech I	—	**5%**	10%	**30 tf**	1 MW
	Erin Mining Laser Upgrade	Tech I	1	**6%**	9%	**31 tf**	1 MW
	Elara Mining Laser Upgrade	Tech I	2	**7%**	8,5%	**33 tf**	1 MW
	Carpo Mining Laser Upgrade	Tech I	3	**8%**	8%	**35 tf**	1 MW
	Aoede Mining Laser Upgrade	Tech I	4	**9%**	7,5%	**37 tf**	1 MW
	Mining Laser Upgrade II	Tech II	5	**9%**	12,5%	**40 tf**	1 MW
	Ice Harvester Upgrade I	Tech I	—	**-5%**	10%	**30 tf**	1 MW
	Crisium Ice Harvester Upgrade	Tech I	1	**-6%**	9%	**31 tf**	1 MW
	Frigoris Ice Harvester Upgrade	Tech I	2	**-7%**	8,5%	**33 tf**	1 MW
	Anguis Ice Harvester Upgrade	Tech I	3	**-8%**	8%	**35 tf**	1 MW
	Ingenii Ice Harvester Upgrade	Tech I	4	**-9%**	7,5%	**37 tf**	1 MW
	Ice Harvester Upgrade II	Tech II	5	**-9%**	12,5%	**40 tf**	1 MW

You can even fit two MLU IIs on a Hulk, but you are going to need the Mining Upgrades level IV skill. Do not forget about the 'Gypsy' CPU management implants (EE-6xx), which improves the CPU of the ship (EE-603 with 3%, the EE-603 with 5%) so even two MLUs can be fitted on a Covetor.

We can improve the Apocalypse CPU capacity, and the Rokh… well, we will see later…☺

Rigs

The Drone Mining Augmentator (and its Tech II version) can be thought of as implants for the ship, and they work the same way as the pilot versions: knocking them out will destroy them. They will also be destroyed if the ship is shot out or is repackaged. The disadvantage of the Drone Mining Augmentator is that it reduces the free CPU capacitor of the ship.

However, it might help your drones to take in one more piece of ore, so you should not dismiss it immediately before doing the math. Make sure the rig will not make your ship unusable. It might prevent fitting the mining lasers, for instance, and that would be silly. If you decide to use them, train the Drones Rigging past level I (-10% for the rig penalty, so the starting 10% can be reduced to 5% at Drones Rigging level V).

Name	Effect
Drone Mining Augmentator I	This ship modification is designed to increase a ship's mining drone yield at the expense of the ship's CPU capacity. (10%)
Drone Mining Augmentator II	This ship modification is designed to increase a ship's mining drone yield at the expense of the ship's CPU capacity. (15%)
Medium Ice Harvester Accelerator I	This ship modification is designed to reduce the duration of ice harvester cycles. (12%)
Medium Mercoxit Mining Crystal Optimization I	This ship modification is designed to increase the yield modifier of those modules using Mercoxit mining crystals. (16%)
Processor Overclocking Unit I	This ship modification is designed to increase a ship's CPU. (7,1%)
Processor Overclocking Unit II	This ship modification is designed to increase a ship's CPU. (9,6%)

The Mining Drones

Drones should not be ignored, because your rate of ISK per hour can be improved significantly by using them. We are, of course, talking about mining drones, but it is not a bad idea to keep some combat drones in the drone bay as well, in case some unpleasant company appears.

The golden rule about mining drones is:

DO NOT USE THE HARVESTING MINING DRONES!

As was mentioned earlier, there are two skills that effect the mining yield of drones: Mining Drone Operations and Drone Interfacing. Note that drones are not able to mine Ice or Mercoxit. Let's see what kinds of mining drones are available:

Drone	Speed (m/s)	Base Yield (m^3/cycle)	Yield with lvl 5 skills (m^3/cycle)	Cycle time (sec.)
T1 Mining Drone	400	15 m^3	37,5 m^3	60
T2 Mining Drone	500	25 m^3	62,5 m^3	60
Harvester Mining Drone	250	30 m^3	75 m^3	60

The basic yield of the Harvester drone is double that of the Tech I variant, and just a bit more than the Tech II version (requires Mining Drone Operations V), but the Tech II drone has double speed. Why is this important? You cannot sit less than 1,500m from any asteroid you mine.

Drones must travel back and forth, to transport the ore into the ship cargo then back again to the asteroid. Their cycle is 60 seconds, then they take the ore to the cargo of your ship.

The cycle time does not include the time necessary to travel. It is easy to calculate that if you are 10kms from the rock, the Harvester drone will take 40 seconds to travel to the rock, while the Tech II drone will take 20 seconds. Calculated with a small rounding, as the drones put their ore into the cargo hold:

Tech II drone: 20s travel time + 60s mining time + 20s travel time (1 cycle) = 100s

Harvester: 40s travel time + 60s mining time + 40s travel time (1 cycle) = 140s

The Tech II drone is in the middle of its next cycle already when the Harvester actually starts going back to the asteroid!

The Harvester drone is simply not recommended. Although its yield is 20% better, than that of the Tech II drone, its speed is only half, so the slowness is not balanced with efficiency. As the above example shows, the Tech II drone is quicker with 40% on 10kms, so more efficient with 20% as well.

Also the Harvester costs at least 100 times as much ISK. They are very hard to find, but if you find some, it's better to sell them for a good profit and use Tech II mining drones. You'll be better off.

Yield Of The Mining Drones

Counting the yield of the mining drones is the same as of the mining lasers: rounding down and in pieces. Having Mining Drone Operation V (+25%) and Drone Interfacing V (+50%), the yield of a Tech II drone is: 25*1.25*2=62.5m³ per cycle. With Omber, 62.5/0.6=104.17 -> 104 pieces of Omber per cycle per drone.

Since you can control a maximum of five drones, it totals 520 pieces of extra Omber per cycle or 31,200 pieces per hour. This does not include the time required for the drones to travel back and forth to the rock.

The only problem with the high-end ores is that their size is bigger, so a given drone cannot carry as much of them. As we can see, it is rounded down as well.

For example, Drone Interfacing level V does not improve your yield if you mine this type of ore. Why is that? Let's see through the example of Bistot: with perfect drone skills you receive 62.5 m^3 per cycle, which is 62.5/16 = 3.90 -> 3 pieces of Bistot per cycle per drone.

Unfortunately you gain only three and not four pieces of Bistot. Drone Mining Augmentator rigs improve this a bit, so that you might acquire +1 Bistot. However, consider carefully the type of rig you choose, as other rigs might be more useful.

The Shortest Way - Drone Travelling Times

The best way to mine with drones is if you are as close to the rock as you can be. It is rare that you can stay this close, however. Eventually, you will exhaust the rock, and you will have to move to the next. Also, consider the hazard of hanging up on the rock should you need to warp out due to danger. You may find yourself stuck, and then dead.

So while the theory is nice, reality is different. The minor increase in ore in 0.0 systems by mining with drones is minimal compared to the danger. You don't want to wait while your drones return in an emergency, or leave behind five expensive drones that cost you more than the ore was worth.

As you can see, with drones your yield will not grow significantly, but every little bit has its worth. That is why you should not neglect them, but do not make it your primary objective to train and use them. Veterans could maximize their yield by using drones, but do not train them until there is nothing else to train.

As always, the choice is yours. It is entirely up to you what you do, just consider the advantages and disadvantages.

Mining Foreman Mindlink And Mindlink Foreman Links

The Mining Foreman Mindlink is a very useful implant, because:

1) Replaces Mining Foreman skill bonus with fixed 15% mining yield bonus.
2) Increases all the Mining Foreman Link (gang modules) efficiency by 25%. Important: you only get the bonus if you are in the fleet and the squadron/wing/fleet commander or the booster has these implants/skills.

Everyone gets the first bonus in the fleet regardless what kind of ship you are flying. The second bonus is only applied to those who are flying a battlecruiser or a command ship and they have an active Mining Foreman Link gang module. The nature of the bonus is that either the Highwall or the Mindlink takes effect (both to be put in the same implant slot). The Highwall gives a flat-out 5% increase, while the Mindlink increases the effect of the Mining Foreman skill level 5%. Additional 5% bonus can be earned with the Michi implant, but this one is rather expensive at the moment (600-750 million ISK).

It is also possible that the Mindlink implant is in another character, who 'helps' mining. If you have trained every skill to the maximum level and you have the previously mentioned implants too, along with a good ship and equipment, and you also have a pilot with Mindlink implants at your disposal, then you have reached the Perfect Miner title.

	Name	Effect
	Mining Foreman Link – Harvester Capacitor Efficiency I	Decreases the capacitor need of mining lasers, gas harvesters and ice harvesters. (6%)
	Mining Foreman Link – Harvester Capacitor Efficiency II	Decreases the capacitor need of mining lasers, gas harvesters and ice harvesters. (7,5%)
	Mining Foreman Link – Laser Optimization I	Decreases mining laser, gas harvester and ice harvester duration. (6%)
	Mining Foreman Link – Laser Optimization II	Decreases mining laser, gas harvester and ice harvester duration. (7,5%)
	Mining Foreman Link – Mining Laser Field Enchantment I	Increases the range of the fleet's mining lasers, gas harvesters and ice harvesters. (13,6%)
	Mining Foreman Link – Mining Laser Field Enchantment II	Increases the range of the fleet's mining lasers, gas harvesters and ice harvesters. (17%)

As you can see these bonuses will not help save the world, but are actually quite useful in the hands – sorry, head – of an adequately skilled pilot. You have to create a fleet in order for this to work. The commander (squadron commander) should have the skills / implants / modules needed for the job. Doing this right will be a boon not just for you but everyone else in the squadron!

There are skills that are needed in order for this to work, but the most effective skill is the Mining Director skill. This is the skill that will influence the yield. (You remember the **Mining Foreman Mindlink**, do you?) This is the part where it will come in handy. In the table below you will see what effect these modules (and the skills associated with them maxed out) have.

	Skill/Module name	Effect
	Mining Director	20% bonus to effectiveness of Mining Foreman link modules per level. (The bonus is 100% at level V)
	Warfare Link Specialist	Boosts effectiveness of all warfare link and mining foreman modules by 10% per level.
	Mining Foreman Mindlink	25% increase to the command bonus of Mining Foreman Link modules. Replaces Mining Foreman skill bonus with fixed 15% mining yield bonus.

Mining Foreman Link – Harvester Capacitor Efficiency

Capacitor is essential for successful operations as the ship has to maintain not only the mining lasers, but some kind of protection as well. This module does not improve the energy system of the ship, but reduces the required energy of the mining equipment.

As can be seen in the above example, with maximum level of skills with the appropriate modules, it is 7,5% (Base) *2 (Mining Director)*1.25 (Mining Foreman Mindlink) *1.5 (Warfare Link Specialist) *1.5 (Rorqual Deployes Mode Bonus) = **42.1875%** reduction.

	Command Ship	Orca	Rorqual (Deployed Mode)
T1	6%*2*1.25*1.5 = **22.5%**	6%*2*1.25*1.5*1.15 = **25.875%**	6%*2*1.25*1.5*1.5 = **33.75%**
T2	7.5%*2*1.25*1.5 = **28.125%**	7.5%*2*1.25*1.5*1.15 = **32.347%**	7.5%*2*1.25*1.5*1.5 = **42.1875%**

In the case of strip miners, it is 'only' 73.47 capacitor consumption per activation instead of 90. The gain with the use of ice harvesters and/or a gas cloud harvester is also minimal, however it is significant with the Deep (Hard) Core mining modules: 240- 195.92=44 units of cap.

Not too much, but can mean the difference between capacitor stability and capacitor drain. With the use of the Mining Foreman Link, the capacitor efficiency modules (Cap Recharger, Capacitor Power Relay and Power Diagnostic Unit) can be changed to other, more useful, yield or tank enhancing modules.

Mining Foreman Link – Laser Optimization

The Laser Optimization Link reduces the cycle time of the ice and gas harvesters, instead of increasing the direct yield. This means 22.5% reduction in cycle time, meaning yield is: 1/(1-0.225)=1.29 (+29%). Yes, one highly trained (industrial) command ship pilot increases the yield of the fleet by 29%! 'But what about a maxed-out Rorqual?' you might ask. Taking the table below into consideration 1/(1-0.421875) = **1.729 → this is a 73% increase in yield! And the cycle length will be reduced from 180s to 104s!**

	Command Ship	Orca	Rorqual (Deployed Mode)
T1	6%*2*1.25*1.5 = **22.5%**	6%*2*1.25*1.5*1.15 = **25.875%**	6%*2*1.25*1.5*1.5 = **33.75%**
T2	7.5%*2*1.25*1.5 = **28.125%**	7.5%*2*1.25*1.5*1.15 = **32.347%**	7.5%*2*1.25*1.5*1.5 = **42.1875%**

Now we know that our cycle time will be reduced between 22.5% and 42.1875% and a really well trained and equipped Rorqual pilot will make wonders to the team's performance. The difference in quite astonishing and speaks for itself. ☺

Mining Foreman Link - Mining Laser Field Enchancement

This is probably the least used link, and it is not accidental. The 4.5% per level mining laser range, which can be 50.63% maximum (with the above mentioned fully trained Commander) can increase the optimal range by 15.1km, which is not that useful. With a strip miner, its optimal range is 22.6km after bonus. It's have a survey scanner bonus as well.

Using the O.R.E. strip miner, a Harvest Implant set and having a boosting Fleet Commander, the range can be increased up to 34.3km. My advice is that you might want to put something more useful, and leave this Link to the lazy who don't want to move much in a belt.

	Command Ship	Orca	Rorqual (Deployed Mode)
T1	13.6%*2*1.25*1.5 = **51%**	13.6%*2*1.25*1.5*1.15 = **58.65%**	13.6%*2*1.25*1.5*1.5 = **76.5%**
T2	17%*2*1.25*1.5 = **63.75%**	17%*2*1.25*1.5*1.15 = **73.3125%**	17%*2*1.25*1.5*1.5 = **95.625%**

Well since we have a fully skilled Rorqual in our hands, why don't we use it to its full potential? The range-boost we get is quite astonishing.

Module Name		Optimal Range	Command Ship	Orca	Rorqual
	Strip Miner I	**15**	**24,56 km**	**25,99 km**	**29,34 km**
	ORE Strip Miner	**17**	**27,83 km**	**29,46 km**	**33,25 km**

And if that does not convince you, let us take a look at the numbers on a Harvest set and T2 bonuses!

Module Name	Optimal Range	Harvest Implant Set	Command Ship	Orca	Rorqual
Strip Miner I	15	20,07 km	32,86 km	34,78 km	39,26 km
ORE Strip Miner	17	22,74 km	37,23 km	39,41 km	44,48 km

Let's Work Together!

There are two ways to boost others with these links:

- You are the designated fleet booster and so, you are giving the bonus to everyone regardless of the level of your Leadership/Wing Command/Fleet Command skill and your position in the fleet.
- You need Leadership/Wing Command/Fleet Command skills. With the Leadership skill (and as the squad leader), you can boost your squadron. Beware! If your squadron has more members than your leadership skill can provide bonus for, all of you will lose the bonus. With the Wing Command skill (and as the Wing Commander), you can boost every squadron that is in your wing. With the Fleet Command skill (and as the Fleet Commander), you give the bonus to everyone in the fleet.

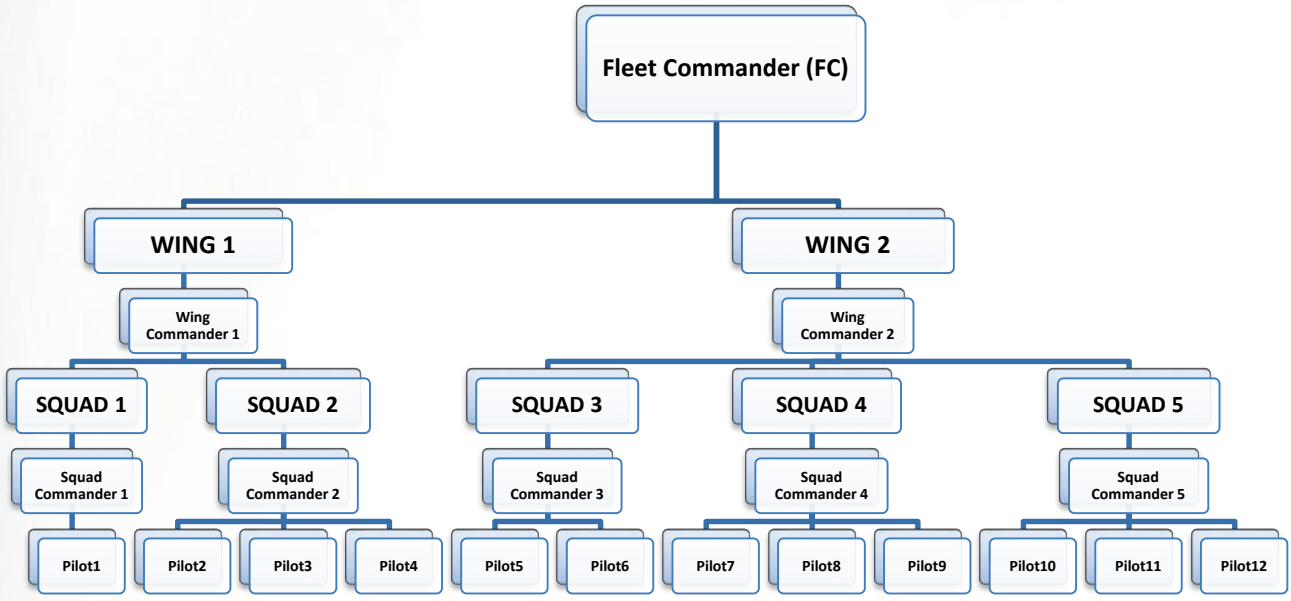
The three skill providing the fleets structures are essential. Only a Fleet Commander trained to level 5 will enable all 256 fleet members to receive the same bonus. Come in short and the fleet as whole will suffer.

Skill Name	Effect
Leadership (Rank 1)	Allows command of a squadron. Increases maximum squadron size by 2 members per skill level, up to a maximum of 10 members. Grants a 2% bonus to fleet members' targeting speed per skill level. Only the bonus of the fleet member with the highest level in this skill is used.
Wing Command (Rank 8)	Allows command of a Wing. Grants the Wing Commander the ability to operate a new Squadron per skill level, up to a maximum of 5 Squadrons.
Fleet Command (Rank 12)	Allows command of a Fleet. Grants the Fleet Commander the ability to command a new Wing per skill level, up to a maximum of 5 Wings.

A fleet of 256 characters assembles like this: 1 + 5 + 25x10 = 256

- Fleet Commander 1 character
- Wing Commanders, maximum 5 characters
- 5 wing, in every wing there are 5 squads: that is a total of 25 squads
- In every squad, 10 characters

Anyone can create a fleet – even without skills. But in order to utilise the skills and bonuses, in order to have every member of your team boosted, you have to have the appropriate skills trained to max. Bonuses will be applied downwards in the hierarchy, and the booster (in any position) can only boost if the commander above has the appropriate skills trained.



Orca – One Big Whale

One of the newest toys for the industrial corps is this pretty capital industrial ship. The Orca was also developed by the Outer Ring Excavators, and its primary role is to support high-sec miners.

It is relatively slow, and misses many of the 'positive' features of its big brother, the Rorqual, but its undisputable advantage is that it can move in high-sec through gates. Its skill requirement (50m ISK for the book) and the price of the ship is relatively moderate.

You do not have to spend billions just for skills. Although it is a capital ship, it does not require the Capital Ship skill. Unfortunately, this means you cannot gain the bonuses from that skill (mainly boosts to your agility).

Industrial command ship skill bonus: 5% bonus to cargo, capacity per level, 3% bonus to effectiveness of mining foreman gang links per level

Ship (role) bonus: 250% bonus to tractor beam range, 100% bonus to tractor beam velocity, 500% bonus to survey scanner range, 99% reduction in CPU need for Gang Link modules, Can use three gang link modules simultaneously

- 30,000m³ Cargo Hold (with skills and fitted you can reach 90,000m³+)
- 40,000m³ Corp Hangar
- 50,000m³ Ore Bay (unfortunately not suitable for minerals)
- 400,000m³ Ship Maintenance Bay
- 75m³ Drone Bay (50Mbit bandwidth)
- Two low slots, three mid slots, three high slots and three slots for the rigs

Skill requirements: Industrial Command Ships I (With the pre-requisites).

The Orca is a command ship, designed to help the miners. Its advantage is that Industrial Core is not required to access the Fleet link bonus, only the skill/module is necessary. Since there is no 'deployed' mode, you can go to the belt to help the others with the use of the tractor beam (the regular tractor beam, unfortunately, but the ship does double its range to 40km).

Another huge advantage is its enormous cargo hold, which combined with the tractor beam (and the bonus received) makes it able to manage the role of transportation of the ore. It is a shield tanking ship, so fit it accordingly. The 75 m3 drone bay can hold five medium and five mining (or light) drones.

A rigged Orca with several Cargohold Expander IIs and Industrial Command Ship level V, with a GSC can have a cargo hold of 119,714 m3. It is worth noting that if you deliver a cargo of high value, this ship has a corporate hangar and a ship hangar, which cannot be scanned by other ships.

The Orca is capable of mining operations in a 'complex'. There are complexes where exhumers are not able to enter due to restrictions, but an Orca can. Since the Orca can carry two fitted Hulks in its ship hangar, you can get miners in.

A whole mining fleet can be brought in with more rounds of transport. A nice example is the Sansha Military Base, which has about 300,000 Monoclinic Bistot 20-25 km from the gate, concentrated in eight to 10 asteroids. Not bad for a high-sec mining op!

The Rorqual – Big Mama Ore

This pretty creature produced by Outer Ring Excavation, it was originally meant for the deepest parts of 0.0 space to make mining possible in the deeper systems, far from a home station. It is an expensive ship, not only for the ship itself, but also the skills required to fly and use it. The capital ship skillbook alone can cost 500m ISK.

The Rorqual is not a solo mining ship. Rather, it is designed for supporting a fleet mining operation. It can be highly effective along with some Hulks and carriers.

Capital industrial ship skill bonuses: 5% reduction in fuel consumption for Industrial Core per level, 10% bonus to effectiveness of Mining Foreman gang links per level when in deployed mode, 50% bonus to the range of Capital Shield Transporters per level, 20% bonus to drone damage and hitpoints per level.

Ship (role) bonuses: 900% bonus to the range of survey scanners, 200% bonus to the range of cargo scanners, 99% reduction CPU to Industrial Reconfiguration modules, 99% reduction CPU to Capital Tractor Beams, 99% CPU to Clone Vat Bay, 99% reduction in CPU need for Gang Link Modules, Can use three Gang Link modules simultaneously.

Useful data:

- 40,000m³ Cargo Hold (with rigs, skills, fits, you can reach 137,294m³),
- 30,000m³ Corp Hangars,
- 10,000m³ Fuel Bay,
- 250,000m³ Ore Bay (minerals can't be placed in it),
- 1,000,000m³ Ship Maintenance Bay,
- 300m³ Drone Bay (125Mbit bandwidth),
- Three low slots, seven medium slots, six high slots and three slots for the rigs.

The Industrial (Hard)Core

The Industrial Core is the 'siege mode' of the Rorqual, which can be used in space, even inside a force field of a POS, by activating the Industrial Core I module. It requires Heavy Water and its main advantage is that the ship can compress ore. The efficiency of the compression can be 1:66 for the Veldspar; 1:40000 for the Mercoxit and 1:10 for ice. Executing the compression requires a batch of ore.

Supposing that the Capital Industrial Ships level IV skill is already learned, you will need 750 units of Heavy Water per activation (minus 50 per Industrial Reconfiguration skill level trained). The cycle of the Industrial Core is 300 seconds, compresses ore and ice instantly by right-clicking them in your ship's Orehold.

Ore and ice may now be compressed directly inside the Starbase Compression Array or Rorqual (in industrial mode) by right-clicking them and selecting "compress". They now give the same quantities as non-compressed ore and ice variants, but have reduced volume (please refer to the non-compressed ore and ice above for mineral outputs)

Ore Name	Ore Size (Non-Compressed)	Ore Need For Compression	Size Without Compression	Compressed Size	Compression rate 1:XX
Compressed Veldspar	0,10 m^3	100,00	10,00 m^3	0,15 m^3	66,67
Compressed Scordite	0,15 m^3	100,00	15,00 m^3	0,19 m^3	78,95
Compressed Pyroxeres	0,30 m^3	100,00	30,00 m^3	0,16 m^3	187,50
Compressed Plagioclase	0,35 m^3	100,00	35,00 m^3	0,15 m^3	233,33
Compressed Omber	0,60 m^3	100,00	60,00 m^3	0,07 m^3	857,14
Compressed Kernite	1,20 m^3	100,00	120,00 m^3	0,19 m^3	631,58
Compressed Jaspet	2,00 m^3	100,00	200,00 m^3	0,15 m^3	1 333,33
Compressed Hemorphite	3,00 m^3	100,00	300,00 m^3	0,16 m^3	1 875,00
Compressed Hedbergite	3,00 m^3	100,00	300,00 m^3	0,14 m^3	2 142,86
Compressed Gneiss	5,00 m^3	100,00	500,00 m^3	1,03 m^3	485,44
Compressed Dark Ochre	8,00 m^3	100,00	800,00 m^3	3,27 m^3	244,65
Compressed Spodumain	16,00 m^3	100,00	1 600,00 m^3	16,00 m^3	100,00
Compressed Crokite	16,00 m^3	100,00	1 600,00 m^3	7,81 m^3	204,87
Compressed Bistot	16,00 m^3	100,00	1 600,00 m^3	6,11 m^3	261,87
Compressed Arkonor	16,00 m^3	100,00	1 600,00 m^3	3,08 m^3	519,48
Compressed Mercoxit	40,00 m^3	100,00	4 000,00 m^3	0,10 m^3	40 000,00
Compressed Ice	1 000,00 m^3	1,00	1 000,00 m^3	100,00 m^3	10,00

The Capital Tractor Beam

Despite the name, you can't fit the Capital Tractor Beam on any capital ship other than the Rorqual. This beam has a 200km (T2 has 240km) range, which can help a lot in transporting the ore in jetcans that have been mined out in the asteroid belt.

However, a Rorqual in an asteroid belt is a rare sight, as it is a two million megaton pirate magnet. Because of the vulnerability of the ship, the most common place you can find one is under the protective shields and guns of a POS. When inside the POS shield, you cannot target an object, so the tractor beam is pretty much useless.

The Clone VAT Bay

This module makes the ship a cloning station (i.e. you can store jump clones here). With a well-organized POS, it can become a useful module. Miners across the galaxy can jump into their clones stored here and get to their mining ships to start their work, or other pilots can jump in and have their stored vessels to assist in.

It is also handy for corporation members who do not have standing with an NPC corporation and who need to make jump clones. The jump clones can be made at the Rorqual, just as if you had .8 standing with a corp at a station.

Fit The Rorqual!

The Rorqual has six high, seven mid, three low and three rig slots. Capacitor Control Circuit rigs (CCCs) are highly recommended, so you can maintain a suitable shield tank. Regardless of whether the Rorqual is in a belt or under the force field of a POS, it still needs protection.

High slots: You have to fit an Industrial Core first. Next, fit the best Mining Foreman Link you can find. The last four slots are for a Clone Vat bay, maybe a Capital Tractor Beam (but if you are sitting under a POS, forget it), and some Remote Hull/Shield/Armor repair modules (depends on the need of your fleet and your skill). Experience shows that a strong capacitor recharge rate is highly advisable, because you need huge amounts of capacitor at every jump (70% of the maximum). Remember that a shield tank and remote repairers require capacitor as well.

Mid slots: One Capital Shield Booster and the best EM and Thermal Shield Hardeners you can get. With four Cap Recharger IIs and three CCC rigs you can run the Shield Boost.

Low slots: Because of the high capacitor need of jumping, people argue about having Capacitor Power Relays in the low slot. Of course, they can improve your capacitor a lot, but your shield booster will be less effective. Probably the best you can have is a Damage Control II, to further increase the protection of the ship and two Power Diagnostic Units (Tech II or faction variant).

RIG Slots: Suggested to use some Capacitor Control Circuit for a fast capacitor recharge, which will help the shield tank and the jump-drive as well!

Strategy

There are many methods for using the Rorqual, but all of them pretty much lead to one of the following:

- **Using the Rorqual in Belt**
- **Using the Rorqual under POS**

While you are in the belt, you can use the 200km tractor beam, thus saving time for the haulers. You won't need as many haulers, so several can change ships and join the mining. However, because the ship is rather vulnerable, this method is used in 100% safety. Otherwise, it is not guaranteed that after the five minutes activation time to come out of siege mode that you will still be alive to escape. The Rorquals, much like freighters, are very attractive targets.

You can almost be positive that if you fly a Rorqual in a belt, sooner or later pirates will appear in the neighbourhood. Add to that the fact that the ship is as agile as a brick – a quick change of course and position is almost impossible. Even a well-placed interceptor can keep it pinned down until the 'big guns' arrive to finish off the prey.

If you are under POS protection, you do not really need to do anything other than compress, and do not have to worry about anything. However, this method requires hauling ships, a well-fitted POS and more people as the haulers have to haul and can't mine.

A Mining Colony, Far Far Away…

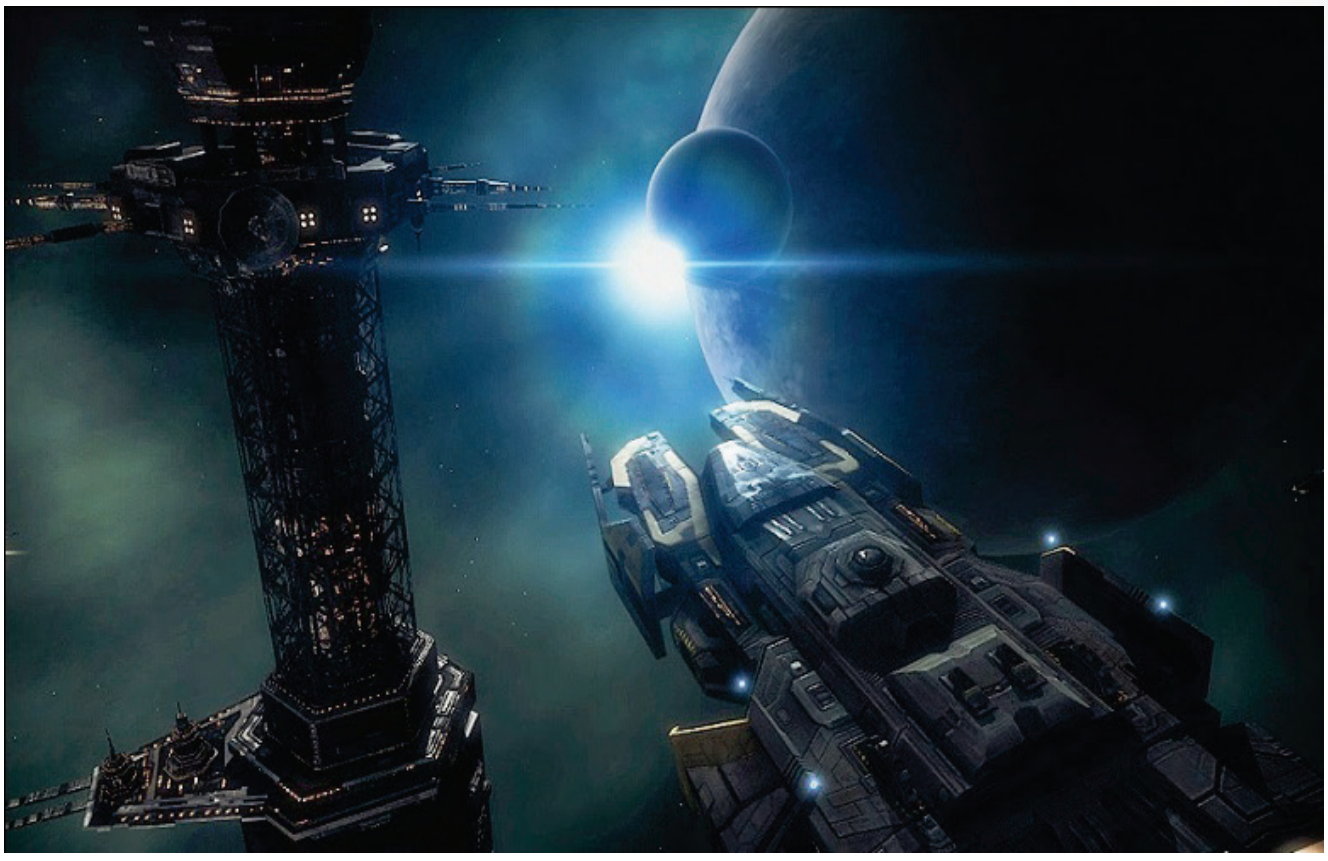
Check out EVE Strategic Maps. These make it possible to find a one-entrance system relatively quickly, which is a suitable location to establish a mining colony. As a reminder, the closer the absolute security status of a system is to -1.0 the more valuable and better the ores located there are. You should look for a system with relatively low traffic, many belts and a suitable security status. Also, go there with a scout ship first, and make a survey of the local traffic and ores that can be mined. If it looks feasible, start the fun!

One of the most popular ways of harnessing the resources of the target system is building a POS as the headquarters of the colony. A medium-sized POS with a Corporate Array, Ship Maintenance Array, some hardeners and some weapons is a popular selection. If you are in the sovereign territory of your alliance, a Cyno Generator or Jammer is highly recommended.

That was the boring part. Now comes the FUN! When the POS is ready, you can fit and store the ships in the Ship Maintenance Array. The Corporate Arrays are useful for storing the crystals, modules, ores, BPOs and fuel.

Regarding refining: why do you need it if you have a compressing Rorqual? Well, you don't, unless you don't have a Rorqual. You will need to jump the Rorqual or use a jump freighter to move the compressed ore to a station with better refining.

With a POS with a clone vat bay, miners can store jump clones (preferably ones with specialized mining implants) and all the necessary ships and modules to mine at their maximum efficiency. The miners jump there, launch their ships, fit them and can mine.



Using Carriers (For Mining)

In my opinion, carriers are more like guardians, and serve as support in a fleet rather than as solo miners. Nevertheless, the available drone capacity and big cargo hold makes a carrier a useful mining ship.

Moreover, a carrier can defend itself against smaller pirate attacks. They do tend to attract pirates like a magnet though, and without an escort, the carrier can be an easy prey.

If you want to mine with a carrier, ensure you have the Carrier skill to level V for the given race. Add five Drone Control Units (DCUs), and you can control 10 drones in total.

That's great for mining drones, but also good in case of attack, by switching to combat drones. You can earn about 20m ISK per hour mining Arkonor, but that is a lot of investment for a relatively small return, and the risk is huge.

If your purpose is support in a mining operation, and the chance of PvP combat is low, it is possible to help with the mining, but monitor your scouts continuously and always be prepared.

If a fight occurs, do not send the mining drones as support by accident. Remember to recall them and send out the combat drones.

Be prepared! Better safe, than sorry.

A fully-trained carrier pilot with a carrier rigged with mining drone rigs has about 1,200m³ ore yield, not counting the travelling time of the drones. According to the previous tables, there are lots of better solutions that are less costly, not to mention the skill requirements.

Summing it up, you can mine with a carrier, but it is only recommended while supporting in a fleet, because a Hulk is way better than the carrier.

The Perfect Miner

As it was mentioned a few charts before, the best way to mine is in a Hulk with Tech II crystals, mining drones, implants and a command ship pilot providing the Mining Foreman Links for you.

But let us see what we can tickle out of these mining vessels if we really give all and every best that money can buy: perfect skills, IH-1005 and Michi's implants (the numbers in brackets are the MLU IIs in use / fitted). In the third and fourth column I have calculated everything with Modulated Deep Core Miner IIs and Modulated strip Miner IIs, first with Tech I then with Tech II Veldspar mining crystal.

Ship	Yield (m^3 / 3 min)			
	Miner II or Strip Miner I	Miner II or Strip Miner I + MLU II	MDCM II or MSM II, + MLU II, T1 Crystal	MDCM II or MSM II, + MLU II, T2 Crystal
Rokh (x3)	2484 m^3	3204 m^3	3474 m^3	3744 m^3
Retriever (x3)	2592 m^3	3348 m^3	3618 m^3	3906 m^3
Covetor (x2)	3492 m^3	4140 m^3	4482 m^3	4842 m^3
Mackinaw (x3)	2880 m^3	3726 m^3	4032 m^3	4338 m^3
Hulk (x2)	4104 m^3	4878 m^3	5274 m^3	5688 m^3

Ok we have the numbers, now to put the icing on the cake with a perfectly skilled Orca pilot with Tech II links and a Mining Foreman Mindlink in the head (Attention, the values are for 3 minutes, not for 1 Strip Miner cycle)!

Ship	Yield (m^3 / 3 min)			
	Miner II or Strip Miner I	Miner II or Strip Miner I + MLU II	MDCM II or MSM II, + MLU II, T1 Crystal	MDCM II or MSM II, + MLU II, T2 Crystal
Rokh	4212 m^3	5454 m^3	5922 m^3	6372 m^3
Retriever	4392 m^3	5688 m^3	6156 m^3	6642 m^3
Covetor	5922 m^3	7038 m^3	7632 m^3	8226 m^3
Mackinaw	4878 m^3	6318 m^3	6840 m^3	7380 m^3
Hulk	6984 m^3	8280 m^3	8982 m^3	9666 m^3

Ok now let us take a look at a perfectly skilled Rorqual pilot (again with Tech II links and implants). (Attention, the values are for 3 minutes, not for 1 Strip Miner cycle!)

Ship	Yield (m^3 / 3 min)			
	Miner II or Strip Miner I	Miner II or Strip Miner I + MLU II	MDCM II or MSM II, + MLU II, T1 Crystal	MDCM II or MSM II, + MLU II, T2 Crystal
Rokh	4932 m^3	6390 m^3	6930 m^3	7452 m^3
Retriever	5148 m^3	6660 m^3	7218 m^3	6945 m^3
Covetor	5516 m^3	6554 m^3	7101 m^3	7758 m^3
Mackinaw	5706 m^3	7398 m^3	8010 m^3	8622 m^3
Hulk	8172 m^3	9702 m^3	10512 m^3	11322 m^3

Ice, Ice Baby!

Now that we have 'a little bit of help' let us see what this help can do if we mine ice. Basic set up is Ice Harvester IIs, Medium Ice Harvester I rigs and an IH-1005 Yeti implant. The numbers in the brackets represents the Ice Harvester Upgrade IIs in use. The first two columns are boosted by an Orca, and the third and fourth are boosted by a Rorqual pilot.

Ship	Orca		Rorqual	
	Cycle Time	Ice / Hour	Cycle Time	Ice / Hour
Retriever (x3)	57,47 s	125	49,26 s	146
Covetor (x2)	70,42 s	153	59,88 s	180
Mackinaw (x3)	54,64 s	132	46,51 s	154
Hulk (x2)	62,89 s	171	53,76 s	201

Mercox It!

It is time to clear away the fog on that strange profession called Mercoxit mining. In this case (apart from the perfect Orca and Hulk pilot) we have the nice and new Mercoxit Mining Optimization I rig (Mining Barge and Exhumer only!), Tech I and Tech II crystals and the good old IH-1005 and Michi implants to work with.

Also added are as much MLU IIs as we can fit on the ship (in the case of the Apocalypse, that is 3 – in this case let us not forget that we need CPU implants too). I've added the comparison of a Rokh too. (Rokh Hard!☺.) The data is pretty conclusive.

Again, the values are for 3 minutes, not for 1 Strip Miner cycle!

Ship / Module name	With T1 Crystal (m^3 / 3 min)		With T2 Crystal (m^3 / 3 min)	
	Orca	Rorqual	Orca	Rorqual
Modulated Deep Core Miner II (MDCM2) **Apocalypse (x8) (3 MLU II)**	4554 m^3	5328 m^3	5004 m^3	5850 m^3
Modulated Deep Core Miner II (MDCM2) **Rokh (x8) (4 MLU II)**	4968 m^3	5796 m^3	5454 m^3	6390 m^3
Modulated Deep Core Miner II (MDCM2) **Rokh (x8) (3 MLU II + 2 Tier 4 MLU)**	5400 m^3	6318 m^3	5940 m^3	6966 m^3
Modulated Deep Core Strip Miner II (MDCSM2) **Retriever (3 MLU II)**	3294 m^3	3852 m^3	3618 m^3	4230 m^3
Modulated Deep Core Strip Miner II (MDCSM2) **Covetor (2 MLU II)**	4068 m^3	4770 m^3	4482 m^3	5256 m^3
Modulated Deep Core Strip Miner II (MDCSM2) **Mackinaw (3 MLU II)**	3654 m^3	4284 m^3	4032 m^3	4716 m^3
Modulated Deep Core Strip Miner II (MDCSM2) **Hulk (2 MLU II)**	4788 m^3	5616 m^3	5274 m^3	6174 m^3

3pcs of Mining Laser Upgrade II and 2pcs of Aoede Mining Laser Upgrade were presented in the first case. The 6966 m^3/ 3 minutes looks pretty nicely next to the Rokh but let us calculate a little, shall we? ☺ Aoede Mining Laser Upgrade costs upwards of 650m ISK, and since you'll need at least two of those, I am not so sure whether or not they are worth it.

An alternative solution would be to plug in a Michi's Excavation Augmentor (around 750m ISK) and then we would have everything we might have ever wanted. If anyone is willing to cash out that amount of money for an industrial implant, they probably already know what it is good for anyway. ☺

But to round up the experiment here, in this alternative, the yield of 4716 m^3 isn't bad either. And because Michi's implant is universal, it will provide the boost on any item we mine.

Last thing to remember is to always stagger the cycles of the modules used. This way, only the yield of the last completed cycle will be in our cargo hold (which we have to move away ASAP, because we do not have room for the next cycle – so you will not be bored that is for sure! ☺

Please note that: The Rokh have 625 m^3 cargohold, so, if our combined yield is more than that (3 or more turrets have the same cycle time) we will lose the ore.

Fitting Hints

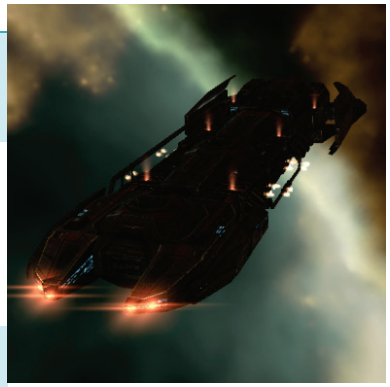
These are some ideas on how to fit ships for mining. These are not golden rules, and you can deviate as you see fit. It is only a guide for you to see all the possibilities.

As was mentioned earlier, the Survey Scanner is recommended, especially in 0.0, where you do not want to mine an Arkonor, Bistot or Crokite rock to nothing, as it may respawn as something useless.

In the fits, the rigs for improving Ice and Mercoxit mining were not represented because although they are quite useful and will increase the performance by 12-16%, it is not always a good idea to fit them. Just think about 0.0 where the rigs supporting survival are much more useful! But I am not here to talk anyone out of using them. ☺

Venture Mining Setup
2x Miner II
1x Survey Scanner
1x Mining Laser Upgrade

Hulk 0.0 tank setup
3x T2 Strip Miner
1x Gistii-A Small Shield Booster 1x Eutectic Cap Recharger 2x Gist-B Hardeners
2x MLU



Rokh Mining setup
8x Miner II
1x Survey Scanner
1x Co-Processor II 4x MLU

Dominix Mining setup	
	6x Miner II
	1x Survey Scanner
	5x MLU 2x Co-Processor II

Covetor/Retriever Mining setup	
	3x T2 Strip / 2x T1 Strip
	1x Survey Scanner
	1x MLU 1x PDU2

Dominix 0.0 tanking setup	
	6x Miner II
	5x Eutectic Cap Recharger
	2x Capacitor Power Relay 2x Large 'Accommodation' Armor Repairer 3x Nanite Microcell Hardeners

Skiff/Mackinaw Mining setup	
	1x MDCSM2/ 2x Ice Harvester II
	1x Survey Scanner
	2x MLU / 2x IHU

Hulk-a-Geddon

Many-many new pilots run down to low or even to zero sec with bold hopes and zero understanding of the situation, only to come back empty-handed or even worse: upset and not motivated. The very first thing you should know is to never run into a situation without properly informing yourself first.

This holds true to every aspect of EVE, but especially to unarmed mining vessels! Your deeds will have an impact and there are consequences to everything you do.

You'll never know if or when your ship - that you worked so hard for, for weeks or even months - might go up in flames because you risked too much for a couple of extra ISK. Never go into places that even PvP-ers avoid on their good days! ☺

Always be on the lookout when this event comes along! This issue came up first after the elimination of macros (the programs used frequently by AFK miners).

In this race the destruction of Exhumers is the first aim, but Mining Barges or even Orcas are killed too – preferably if they are in high sec.

And why the name?

Hulks are best shot by Armageddons (at least, when the event were created it was). It's a cheap, cost-effective way for solo gankers.

It is relatively easy to amass wealth on both sides; the only key element for this is a corporation. As soon as you can, go out there and find a corporation that will suit you play style and fits your needs. Don't be afraid there is one out there, you just have to take your time, and sooner or later you will find it.

Logistics – On The Move

Every time you need to move goods (be they ore, ice, or refined products) from point A to point B for any reason, you need a hauler ship.

Industrial Haulers

Every race has its own set of industrial ships. Fortunately, using them is not limited to that certain race. The Minmatar Mammoth and the Gallente Nereus are both very good.

Why GSCs? The container only takes 3,000 m^3 but can hold 3,900 m^3 of space. So you gain 900 m^3 of extra space for every container. There is no other industrial hauler which has a bigger cargo hold among the Tech I ships, except for the Iteron Mark V.

Each race have one industrial focused on travel time and resilience (Badger, Sigil, Wreathe and Nereus).

Each race will have one cargo-focused industrial (Tayra, Bestower, Mammoth and Iteron Mark V).

There are industrials with specialized bays:

- The Hoarder have a bay that carries anything in the 'charge' group, including ammo, bombs, nanite repair paste, cap booster charges, etc.
- The Kyros have a dedicated bay for minerals.
- The Epithal have a dedicated bay for planetary commodities.
- The Miasmos have a dedicated bay for asteroid ore, ice ore and gas.

Transport Ships

The more advanced technology Tech II versions of the previous ships are called transport ships. Their main feature is that they are tougher than the Tech I types and their fleet hangar impressive as well, but they come with a higher price tag.

The Crane, Prorator, Prowler and Viator are able to use Covert Ops Cloak, thus can warp while in stealth mode. They are also able to use the cyno portals generated by black ops battleships. The Bustard, Impel, Mastodon and the Occator receive +2 warp strength bonuses, making them much harder to warp scramble.

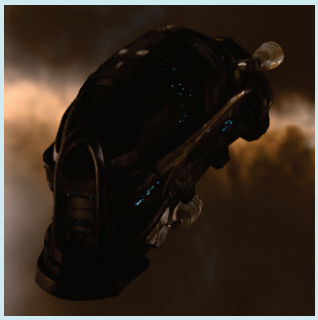
Deep Space Transport

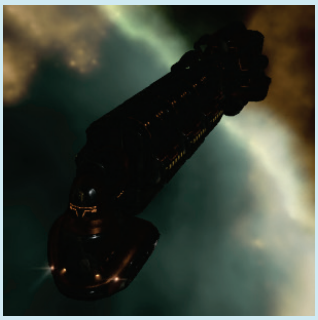
Deep space transports are designed with the depths of lawless space in mind. Possessing defensive capabilities far in excess of standard industrial ships, they provide great protection for whatever cargo is being transported in their massive holds. They are, however, some of the slowest ships to be found floating through space.

Transport Ships bonuses (per skill level):
4% bonus to all shield or armor resistances
5% bonus to fleet hangar capacity

Role Bonus:
2+ bonus to ship warp core strength
100% bonus to the benefits of overheating Afterburners, Microwarpdrives, Local Repair Modules, and Resistance Modules

Bustard **Impel** **Mastodon** **Occator**





Blockade Runner

Blockade runner transports are the fastest type of industrial available. Utilizing sturdy but lightweight construction materials and sacrificing some cargo space, these haulers are able to reach speeds greater than those of a cruiser while withstanding heavy fire - factors which make them ideal for zipping through dangerous territories with valuable cargo.

Transport Ships bonuses (per skill level):
20% reduction in Cloaking Devices CPU requirement
5% bonus to warp speed and warp acceleration

Role bonus:
Can fit Covert Ops Cloaks and Covert Cynosural Fields.
Cloak reactivation delay reduced to 5 seconds; immune to cargo scanning.

Crane **Prorator** **Prowler** **Viator**

Freighters

Whales! They are big, slow, have a huge cargo hold capacity and need a lot of skills when compared to other large ships (Industrial level V of the given race, Advanced Spaceship Command level I, and Freighter skill I-V of the given race).

They are very expensive, very slow and are easy prey if the pilot wanders somewhere the hospitality is not friendly.

NEVER go alone with freighter to lowsec or 0.0; you will lose your ship and your cargo, guaranteed.

Jump Freighters

These are simply more advanced freighters with a few modifications. One of their characteristics is that they are unbelievably expensive (we are talking about billions of ISK) and have a lot less cargo capacity than the basic freighters. Their skill requirement is also massive because of the jump skills.

So the obvious question is what are they good for? Basically, jump freighters can use jump portals (just like capital ships) and are more resistant than the plain Tech I Freighters.

It is strongly recommended that you train the Jump Drive Calibration skill to at least level IV if you're going to fly one. It will reduce the number of jumps necessary for long-range movement, and that means more safety.

The ship can also use gates, and can enter High-Security space, but it cannot jump there (you cannot open a cynosural field in high-sec). The ships also have a 10,000 m^3 fuel bay to store the fuel necessary to jump.☺

Transport Ship Cargo sizes

Ship	Low Slots	Base Capacity m^3	Level V Ship Skills (+25%)	Expanded Cargohold II. (27,5% / module)	Cargohold Optimization I. (+15% / module)		Cargohold Optimization I. x 1 (+15% / module) (Tech 1 ships only) + Cargohold Optimization II. x 2 (+20% / module)		Rig Slots
					No Module	Expanded Cargohold II.	No module	Expanded Cargohold II.	
Industrial Ships									
Bestover	6	4 800,00	**6 000,00**	25 775,81	**9 125,25**	**39 201,79**	**9 936,00**	**42 684,75**	3
Sigil	6	2 100,00	**2 625,00**	11 276,92	**3 992,30**	**17 150,78**	**4 347,00**	**18 674,58**	3
Badger	4	3 900,00	**4 875,00**	12 882,95	**7 414,27**	**19 593,36**	**8 073,00**	**21 334,17**	3
Tayra	4	7 300,00	**9 125,00**	24 114,24	**13 877,98**	**36 674,75**	**15 111,00**	**39 933,18**	3
Nereus	5	2 700,00	**3 375,00**	11 371,68	**5 132,95**	**17 294,91**	**5 589,00**	**18 831,51**	3
Iteron Mark V	5	5 800,00	**7 250,00**	24 428,06	**11 026,34**	**37 152,02**	**12 006,00**	**40 452,86**	3
Mammoth	4	5 500,00	**6 875,00**	18 168,26	**10 456,02**	**27 631,66**	**11 385,00**	**30 086,65**	3
Wreathe	5	2 900,00	**3 625,00**	12 214,03	**5 513,17**	**18 576,01**	**6 003,00**	**20 226,43**	3
Deep Space Transports (Fleet hangar - 62500 m3 at Level 5)									
Impel	7	3 100,00	**65 600,00**	79 479,82	**66 599,75**	**84 955,81**	**66 964,00**	**86 950,94**	2
Bustard	3	5 000,00	**67 500,00**	72 863,36	**69 112,50**	**76 205,54**	**69 700,00**	**77 423,24**	2
Occator	6	3 900,00	**66 400,00**	79 254,28	**67 657,75**	**84 657,53**	**68 116,00**	**86 626,16**	2
Mastodon	4	4 500,00	**67 000,00**	74 391,95	**68 451,25**	**78 227,11**	**68 980,00**	**79 624,42**	2
Blockade Runners									
Prorator	4	2 900,00	**3 625,00**	9 579,63	**4 794,06**	**12 669,06**	**5 220,00**	**13 794,67**	2
Crane	2	4 300,00	**5 375,00**	8 737,73	**7 108,44**	**11 555,65**	**7 740,00**	**12 582,34**	2
Viator	3	3 600,00	**4 500,00**	9 327,02	**5 951,25**	**12 334,99**	**6 480,00**	**13 430,91**	2
Prowler	3	3 500,00	**4 375,00**	9 067,94	**5 785,94**	**11 992,35**	**6 300,00**	**13 057,83**	2
Freighters									
Providence	3	435 000,00	**543 750,00**	1 127 015,33	–		–		
Charon	3	465 000,00	**581 250,00**	1 204 740,53					
Obelisk	3	440 000,00	**550 000,00**	1 139 969,53					
Fenrir	3	435 000,00	**543 750,00**	1 127 015,33					
Jump Freighters									
Ark	3	135 000,00	**168 750,00**	349 763,38	–		–		
Rhea	3	144 000,00	**180 000,00**	373 080,94					
Anshar	3	137 500,00	**171 875,00**	356 240,48					
Nomad	3	132 000,00	**165 000,00**	341 990,86					
Capital Industrial Ships									
Orca	2	30 000	**37 500,00**	60 960,94	**57 032,81**	**92 713,97**	**62 100,00**	**100 951,31**	3
Rorqual	3	40 000	**40 000,00**	82 906,88	**60 835,00**	**126 090,99**	**66 240,00**	**137 293,79**	3
ORE Freighter									
Bowhead	3	**Ship Maintenance Bay Capacity 1 659 000m^3 at level 5**							

AGENTING

CHAPTER 4

ANGEL CARTEL

SERPENTIS

DETEIS

CIVIRE

GURISTAS

KHANID EMPIRE

BLOOD RAIDERS

TYPES OF MISSIONS

AGENTS

EPIC ARC

COSMOS

CALDARI

AMARR

MINMATAR

GALLENTE

JOVE EMPIRE

SANSHA

EVE

INDUSTRIAL BLACK BOOK

ISK VOL I

0 93624 80852 7

Agents – My name Is Zor, James Zor.

Running missions is one of the most popular ways to make ISK in the game. You work for NPC agents in return for equipment, loot, ISK and Loyalty Points.

You can hate it, you can like it, but you should never ignore the opportunity. In many missions, there are even mineable minerals which can be turned into a profit.

Another reward you will be given is called Standing (towards the agent, the agent's NPC corporation and towards the faction, to whom the NPC corporation belongs to).

Running missions can be a simple task, but at higher levels, it can be dangerous, even exciting. One bad shot, or a wrongly chosen fitting setup, can be enough to cause the failure of the mission or worse, the loss of your valuable ship.

Factions

Agents and the missions are distinguished by the faction they belong to. Their faction determines the faction of the NPCs to be killed in the mission. Factional enemies are connected through the background story.

For example: Amarr – Minmatar (Empire vs. Empire) and Amarr – Blood Raiders/Sansha Nation (Empire vs. NPC Pirates).

Open the People and Places menu, select the Faction, type in the name of the faction you are looking for in the search area.

For now, let us look at the Amarr faction. Select 'Search' then right-click on the list and select the 'Show Info' option. There are several tabs.

Among them is the 'Member Corps' where you can look up the members. In the corporations, the agents are arranged in groups, which are called divisions.

Divisions

- Each agent belongs to a corporate division. The agent's division determines the type of mission they will offer.
- Divisions do not affect a particular kill mission (only the faction of the agent does that). For example, a Caldari agent will choose from the pool of the same missions, only changing the Faction (Angel Extravaganza, Guristas Extravaganza, Blockade, etc.).

The division determines the type of missions you receive from the agents (see the table below).

Division	Courier	Combat	Mining
Distribution	✓	✗	✗
Mining	✗	✗	✓
Security	✗	✓	✗

Levels

In the next chapter we'll go over the types of missions that can be given by an agent of a certain division, but first let's talk about what makes one agent better than another. Each agent has a level, this attribute determine, respectively, the difficulty of the missions and the payment you will receive from the agent upon completion.

- **Level 1** – Very easy, designed for beginners to learn the basics of PvE.
- **Level 2** – Easy for a relatively young character as well, although more attention is required.
- **Level 3** – Medium difficulty missions; can be completed with a battlecruiser.
- **Level 4** – Designed for experienced pilots with good ships and solid setups.
- **Level 5** – Reachable in low-sec areas only, which are usually occupied by pirates to haunt the unsuspecting agent runners.

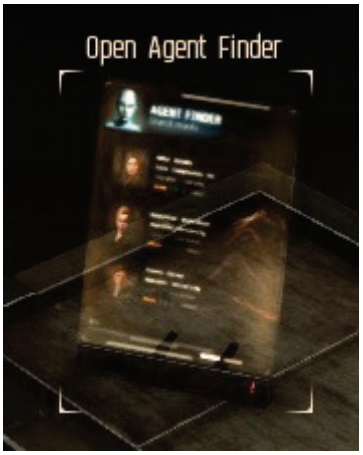
Completing them is almost impossible alone. Experienced pilots with very expensive equipment are required for these missions, and so they are recommended for smaller groups.

The level of the agent also determines the type of ship that should be used in the mission:

Agent level	Ship Type
Level 1	Frigate/Destroyer
Level 2	Destroyer/Cruiser
Level 3	Battlecruiser
Level 4	Battleship
Level 5	Group of players with Marauders, Battleships, Command ships , Logistics ships

In most cases, higher class ships can be used as well. It is generally not worth the trouble though, because it can cause problems like trying to shoot frigates with cruise missiles.

Agent Finder



The new Agent Finder tool allows you to search for a specific set of agents. This tool can be opened in several ways when you are docked on a station:

- click on the Agent Finder located on a table within the captains quarters
- click the “Agent Finder” button that can be found in the “Agents” tab of the station services

When opening the agent finder, you will be greeted with a window like this:

The three main components you can find here are:

- The agent level selection, which you can use to set the level of the agents you are looking for. Simply click on the number for the agent level you are interested in to set it.
- The agent pane, which lists the agents matching your search criteria. You can also click on an agent to bring up the information for that agent.
- The “Previous” and “Next” buttons, which let you scroll through the search results if more than 6 agents match your search criteria.

Narrowing the search results using filters

The filter pane can be opened and closed by clicking on „Filter Options" and will look like this:

Here you can narrow down the search so that only agents from a specific faction and corporation are listed. The corporation selection in the filter will only list member corporations of the faction you have chosen in the "Faction" field. You can further narrow down the search by only listing agents of a specific type or from a certain division you want to work for, as well limiting the search to a certain system or system security status range:

- **High Sec**: Systems with a security rating of 0.5 or higher
- **Low Sec**: Systems with a security rating ranging from 0.1 to 0.4
- **Null Sec**: Systems with a security rating of 0.0 or lower

By default, the agent finder will only show agents that are currently available for you and which would offer you missions. If you are looking for agents that are not yet available to you, then you need to uncheck "Show only available" within the filter. Agents that are not available to you will be displayed in a darkened manner:

Faction-Standings Relations

In the universe of EVE there are friends and enemies among the races, corporations and factions. As you play, you'll get many friends and connections, and also many enemies. It is important to know that if you choose a side and start working for them, your standing will grow toward that agent, the NPC corporation and the faction as well (especially in the case of storyline missions), while you will lose standing toward the factions that oppose each of these. If you start working for the enemy, then your friends and their friends will start to dislike you. The tables on the following pages show the relationships of the factions towards each other.

	AMARR	AMMATAR	ANGEL CARTEL	CALDARI	CONCORD	GALLENTE	MINMATAR	JOVIAN DIRECTORATE	KHANID KINGDOM	MINMATAR
AMARR	10,00	9,00	–	5,00	3,00	-2,00	-7,00	-0,50	0,50	-5,00
AMMATAR	9,00	10,00	-2,00	6,00	3,00	-3,00	-6,00	-0,50	0,50	-6,00
ANGEL CARTEL	–	-2,50	10,00	–	-1,00	-7,00	-2,00	–	-0,25	-8,00
CALDARI	7,00	4,00	–	10,00	3,00	-5,00	-9,00	1,75	4,50	-2,00
CONCORD	–	–	-1,00	–	10,00	–	-2,00	–	–	–
GALLENTE	-2,00	-2,00	-8,00	-5,00	3,00	10,00	–	-0,25	-1,00	8,00
MINMATAR	-7,00	-0,75	-3,00	–	-2,00	–	10,00	–	-2,00	–
JOVIAN DIRECTORATE	-0,50	-0,50	–	1,75	–	-0,25	–	10,00	-1,00	2,50
KHANID KINGDOM	6,00	0,50	–	6,00	3,00	-2,00	-3,00	-1,00	10,00	-4,00
MINMATAR	-5,00	-3,00	-9,00	-2,00	3,00	8,00	–	2,50	-5,00	10,00
MORDU'S LEGION	5,00	0,25	-0,75	9,00	3,00	-3,00	-7,00	0,75	1,00	-2,00
ORE	-3,00	-1,00	-3,00	-2,00	3,00	5,00	–	1,00	-3,75	4,00
SANSHA'S NATION	-7,00	-5,00	-2,00	-7,00	-3,00	–	3,00	–	-5,00	–
SERPENTIS	–	-1,00	8,00	–	-1,00	-9,00	-1,00	–	-2,00	-6,00
	-8,00	-4,50	-2,00	-7,00	-2,00	–	5,00	–	-3,00	–
	0,25	0,75	-3,50	1,50	9,00	3,00	-2,00	1,25	0,75	1,25
SOE	-1,00	-0,50	-7,00	-0,25	5,00	8,00	-1,00	2,00	-0,25	4,00
	-0,25	-0,25	-0,75	1,00	–	1,50	-1,00	9,00	0,25	2,00
	–	-3,00	5,00	–	–	-6,00	-2,00	-1,00	-1,00	-5,00
THUKKER TRIBE	-4,00	-7,00	7,00	-3,00	–	-2,00	-2,00	0,25	-2,50	-2,00
	AMARR	AMMATAR	ANGEL CARTEL	CALDARI	CONCORD	GALLENTE	MINMATAR	JOVIAN DIRECTORATE	KHANID KINGDOM	MINMATAR

Mordu's Legion	ORE	Sansha's Nation	Serpentis	Blood Raiders	Intaki Syndicate	SOE	Society of Conscious Thought	Hyasyoda Corporation	Thukker Tribe	
5,00	-1,25	-8,00	–	-8,00	0,25	-1,00	-0,25	-2,00	-5,00	Amarr
4,00	-1,00	-7,00	–	-9,00	0,75	-0,50	-0,25	-3,00	-7,00	Ammatar
–	-9,00	-2,00	8,00	-4,00	-3,50	-2,00	-0,75	4,00	7,00	Angel Cartel
9,00	-2,00	-7,00	–	-7,00	1,50	-0,25	1,00	-2,00	-2,00	Caldari
–	–	-3,00	-1,00	-2,00	–	–	–	–	–	Concord
-2,00	2,00	–	-9,00	–	3,00	8,00	1,50	-2,50	-1,00	Gallente
-8,00	–	7,00	-3,00	4,00	-2,00	–	-1,00	-1,00	-2,00	Minmatar
0,75	1,00	–	–	–	1,25	2,00	9,00	-1,00	0,25	Jovian Directorate
6,00	-2,00	-6,00	–	-7,00	0,75	-0,25	0,25	-1,00	-3,00	Khanid Kingdom
-4,00	4,00	–	-7,00	–	1,25	2,50	2,00	-1,00	-2,00	Minmatar
10,00	–	-4,00	–	–	1,50	–	1,50	-6,00	-1,00	Mordu's Legion
–	10,00	–	-6,00	–	0,50	0,25	-1,50	-1,00	-1,00	ORE
-5,00	–	10,00	-2,00	5,00	-1,75	–	-1,75	-1,00	-3,00	Sansha's Nation
–	-7,00	-2,00	10,00	-4,00	-1,00	-3,00	-1,25	5,00	3,00	Serpentis
-6,00	–	4,50	-2,00	10,00	-3,00	–	-1,50	-1,00	-2,00	Blood Raiders
1,50	0,50	-1,75	-1,00	-3,00	10,00	5,00	1,50	-1,00	-0,25	Intaki Syndicate
–	3,00	-4,00	-7,00	-3,00	5,00	10,00	6,00	-3,00	-2,00	SOE
1,50	-1,50	-1,75	-1,25	-1,50	1,50	6,00	10,00	-3,00	-0,50	Society of Conscious Thought
-6,00	5,00	-1,00	7,00	-1,00	-1,00	-3,00	-3,00	10,00	4,00	Hyasyoda Corporation
-1,00	-1,00	-3,00	3,00	-4,00	-0,25	-1,00	-0,50	5,00	10,00	Thukker Tribe
Mordu's Legion	ORE	Sansha's Nation	Serpentis	Blood Raiders	Intaki Syndicate	SOE	Society of Conscious Thought	Hyasyoda Corporation	Thukker Tribe	

Types Of Missions

There are four types of mission agents available. Each one of these agents provide their own specific type of mission.

Useful Hints:

- **Do not make the decision to cancel a mission lightly.** Cancelling a mission has an impact which can be far greater than the loss of surviving modules. Consider enlisting assistance to finish the mission. Keep in mind, it may take multiple storyline missions to make up for one Failed or Cancelled mission.
- You will also receive a similar standing hit if you reject more than one mission per four hours.
- When you complete storyline missions, you will receive standing gains to the storyline agent's corporation and the faction that the corporation is aligned with (the primary faction). You will also receive standing gains to other factions friendly to the primary faction, as well as standing hits to factions hostile to the primary faction.

Distribution - Courier

These are simple deliveries. Take the cargo (ore, livestock, or some useless junk) from point A to point B. Most of the time you can do the mission AFK.

The pay is not much, but you will not lose standing to the opposing factions, as you do not have to attack enemy ships. Sometimes your destination is in low-sec (you'll be warned of this by the agent). It is better to decline these missions as the gates leading there are often camped.

Security - Kill

These tasks are typically to go to the location given by the agent, annihilate all hostiles and probably pick up something. These missions are the most colourful as there are many types of them. It is highly recommended to check the mission on the Eve Survival website for details (Eve Survival).

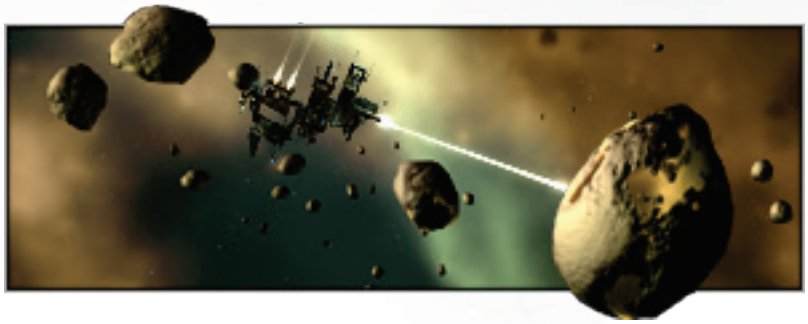
There you can find very accurate walkthroughs for each mission regarding tank and damage types and some advice on how to complete the mission. Note, after new patches to the game, some missions change in difficulty (adding EWAR ships, for instance).

In the table below, you can see the types of damage inflicted by a faction and the most effective tank resistances against them.

NPC Faction	NPC Damage Types (You have to tank against these)	Most Effective Damage Types against NPCs
	Damage Type	Damage Type
Guristas	Kinetic / Thermal	Kinetic / (Thermal)
Serpentis	Thermal / Kinetic	Thermal / Kinetic
Blood Raider	EM / Thermal	EM / Thermal
Sansha's Nation	EM / Thermal	EM / Thermal
Angel Cartel	Explo. / Kin. / (Thermal / EM)	Explosive
Mordu's Legion	Kin. / Therm. / (Explo. / EM)	Thermal / Kinetic
Mercenary	Kinetic / Thermal	Thermal / Kinetic
Republic Fleet	Explo. / Thermal / (Kin. / EM)	Explosive / Kinetic
Caldary Navy	Kinetic / Thermal	Kinetic / Thermal
Amarr Navy	EM / Thermal / (Kinetic)	EM / Thermal
Federation Navy	Thermal / Kinetic	Kinetic / Thermal
Rogue Drones	Expl. / Kin. / EM / Thermal	EM
Thukker Tribe	Explosive / Thermal	EM
CONCORD	EM / Thermal / Kin. / Expl.	Explosive / Kinetic
EOM	Kinetic / Thermal	Kinetic / EM

Mining

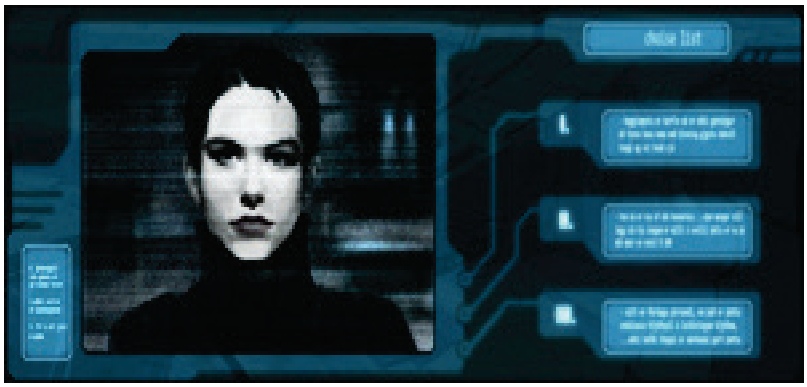
In mining missions, you will be sent to a coordinate given by the agent and told to mine a specific type and amount of ore. You can expect to meet some hostile NPC ships while you're there, so be prepared for them.



Typically, it is worth more mining normal ores in regular asteroid belts than completing these missions, although some missions also hold mineable asteroids so after cleaning the place, you can harvest them for a little extra.

Storyline Mission

After every sixteenth mission with the same division, you will be offered a special mission which has a serious impact on your corp and faction standings.



If you do 15 level 1 missions, then one level 2 mission, you will not get an offer. You will only get it after the sixteenth mission of the same level. The level of the storyline is equivalent to the level of the missions you are running, so you will get a level 1 storyline mission after sixteen level 1 missions.

When you are offered a storyline mission, it will always be connected to the corp you are working for, and you will be invited by the **nearest!** Storyline agent of the faction.

For instance, if you work for the Amarr Navy, you'll get an invitation from the Carthum Conglomerate. It can be especially important if you want to increase a specific corp standing.

If you already have an active storyline mission, but it is not yet completed, the next one will be offered by the second closest storyline agent. These missions are important because they improve your corp and faction standings significantly.

Moreover, the reward is good as well: implants, other equipment and/or ISK. You can discard storyline missions before taking them without standing loss, but we recommend that you do every storyline that is offered.

Burner Missions

These missions pit you against pirate "Burners", pilots trained by the five major pirate factions that have set off on their own and become a seemingly omnipresent danger to shipping in the cluster's shipping. Whatever their motives, it has become abundantly clear that these Burners are much more dangerous than the average pirate. They are frigate specialists, making use of modified capsuleer-grade technology and tactics as they strike out from their hidden bases across New Eden.

Burner Missions will be available from the normal level 4 security mission pool, issued by agents across highsec, lowsec and nullsec space. There are a few unique features that set Burner Missions apart from the ones you may be used to:

- Burner Missions are 100% optional. There will be no standings penalty for turning down or failing these missions. Your friendly neighborhood security agent knows that not every capsuleer will have the equipment or skills to take on these missions and won't be offended if you decline.
- Burner Missions can only be completed in frigate-sized ships. The pirate Burners operate from bases protected by acceleration gates that only allow access for frigates. All types of frigates (Tech One, Tech Two and Faction) can enter the bases.
- Burner Missions pit you against a single enemy NPC. This NPC is an extremely powerful frigate with stats based on those of a player flying a pirate frigate with officer/deadspace gear, pirate implants, and command links. All of these NPCs use warp disruption, and most of them use scramblers that turn off microwarpdrives the same way player scramblers do.

When agents give you one of these missions, they will provide you with extensive information about what you can expect to face. These instructions allow you to design and build a ship fitting that effectively counters the Burner. An example of the information provided could look something like this:

"This pirate will be flying a shield boosted Dramiel frigate, with an extremely small signature radius. He tends to deal most of his damage with Domination Fusion ammo, supplemented with Mjolnir rockets. Survivors of his previous attacks claim that he likes to orbit his opponents at very close range at high speed to make himself hard to hit. He always flies with a Stasis Webifier and Warp Scrambler fit."

From this information you might decide to find a frigate fit that has high resists to explosive damage, decent resists for kinetic and EM damage, and that can effectively track small fast targets.

All of these missions will feature rewards that are quite lucrative, particularly considering the short time investment required to complete the mission, making the risk and difficulty very worthwhile. The Burners also have a very small chance to drop valuable faction modules.

Declining Missions

You can decline one mission (which you have NOT already accepted) per agent, per hour without a penalty. If you decline another mission for that agent before a four-hour interval, you will get a penalty to your standing towards both the agent and the corp.

There will be a notice about this and the time you are allowed to decline it without any penalty.

Accepting a mission, then giving it back will result in a serious standing loss. Failing a storyline mission results in a huge standing loss, not just towards the agent and the corp, but also to the faction!

Farming A Mission

Every non-completed mission will be reset during the daily downtime, meaning all the NPCs, all the structures and all the mineable asteroids will be reproduced.

Farming the missions means you do not complete it, but start shooting it again after every downtime. It is a payable method when the mission has many high bounty ships, the NPCs or buildings drop valuable items, or there's fantastic ore in an asteroid belt.

How a mission can be farmed? Check out when it is completed in your mission log. In most cases, the mission trigger is mentioned in the walkthrough. If not, you can find it under the 'Blitz' section.

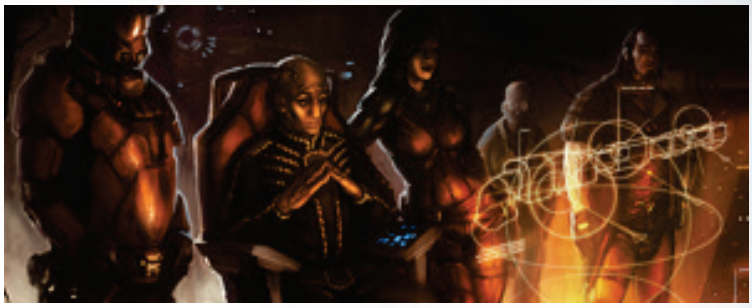
For example, it is the Corpus Pope NPC in the last spawn of the Blood Raiders Blockade mission. When farming Blockade, you leave the trigger unharmed. If you have a salvage ship that can tank the remaining hostiles, you can even loot the wrecks.

The Most Commonly Farmed Missions:

- Blockade
- Recon 1/3
- Worlds Collide
- Angel Extravaganza

Note: You have to finish the mission within seven days or the agent will tell you that you failed and you will lose standing towards them and their corp.

Handling The Agression



When you arrive at the mission, you will either be greeted by attacking ships already out for blood, or ships standing off in groups. In this case, you can choose which group to aggress, and in what order.

In most cases, when a group starts attacking you, you should finish them first before engaging other groups. You should read the description of the mission (online at **http://eve-survival.org/wikka.php?wakka=MissionReports**) because the ship that triggers the next wave of NPCs or the aggression of another group might be among them.

It is advisable to turn on the Tactical Overlay so that you can determine the distance of the groups and the position of the ships relative to each other. The easiest way to select a certain group is to shoot a single ship in a group that seems separated. Every ship belonging to that given group will start attacking you.

This is a relatively simple and safe way to decrease the amount of enemy ships without having the whole fleet attack you at once. It is important to avoid shooting the trigger ship first though!

In most cases, shooting the buildings and towers also make the whole fleet attack you. Do not forget that sometimes getting within a specific range to them can also trigger aggression.

In higher level missions, there are ships whose sole purpose is to annoy you, a lot. In specific missions, you will encounter EWAR ships, such as tacklers. These little ships will scramble you, web you and dampen you. It is highly unpleasant if you are not able to target the enemy or cannot escape from the throng of NPCs in time.

However, You Can Ensure Things Run More Smoothly in Three Ways:

- **Shoot the tacklers first.** If you are not sure you can handle the mission, or you prefer finishing the job relatively undisturbed, kill those little nuisances first.
- **Kill the ships with the greatest DPS.** Destroying them is another possible solution to decrease the damage taken, as the smaller ships usually do not have the ability to break your tank. Watch out for capacitor drainers if you have an active tanking setup, and watch out for triggers, they can do a significant amount of damage.
- **Get a good head start before it gets ugly.** Combined with either of the first two tactics, it is wise to ensure a way to escape. This might be fitting a Warp Core Stabilizer to your ship (although it is not recommended due to its side effects), or using a suitable module/tactic like aligning to an object (gate, planet, station) in space, making sure you do not have a ship or a structure in the way, and warping out if necessary.

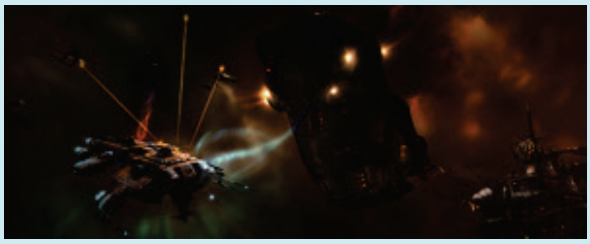
Epic Arcs

An Epic Arc is a series of missions with a unique story that can only be completed once.

The Blood Stained Stars

As a beginner, it is useful to do this mission as it helps you get to know several types of missions and also helps you discover many parts of the galaxy.

Storyline Name	The Blood-Stained Stars
Faction:	Sisters of EVE
Corporation:	Sisters of EVE
Agent:	Sister Alitura
Agent Level:	1
Starting place:	Arnon IX - Moon 3 - Sisters of Eve Bureau



Faction and Pirate Mission Arcs

Some level 4 agents have become accessible if you have high enough standing (about 6.8) towards them. The series of missions offered are a bit long (around twenty or so missions), however, in the end, you are rewarded with faction items. This link can help you in completing them: **http://eve-survival.org/wikka.php?wakka=MissionReportsEpicArc**

AMARR

Storyline Name	Right to Rule
Faction:	Amarr
Corporation:	Ministry of Internal Order
Agent:	Karde Romu
Agent Level:	4
Starting place:	Kor-Azor Prime

CALDARI

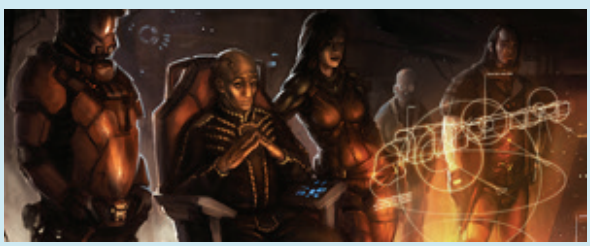
Storyline Name	Penumbra
Faction:	Caldari
Corporation:	Expert Distribution
Agent:	Aursa Kunivuri
Agent Level:	4
Starting place:	Josameto

Storyline Name	Syndication
Faction:	Gallente
Corporation:	Impetus
Agent:	Roineron Aviviere
Agent Level:	4
Starting place:	Dodixie

Storyline Name	Wildfire
Faction:	Minmatar
Corporation:	Brutor Tribe
Agent:	Arsten Takalo
Agent Level:	4
Starting place:	Frarn

Storyline Name	Angel Sound		
Faction:	Minmatar Republic	Amarr Empire	Angel Cartel
Corporation:	Republic Security Services	Amarr Navy	Dominations
Agent:	Aton Hordner	Arajna Ashia	Ellar Stin
Agent Level:		3	
Starting place:	Egbinger	Sendaya	Konora

Storyline Name	Smash And Grab		
Faction:	Gallente Federation	Caldari State	Guristas
Corporation:	Federal Intelligence Office	Ytiri	Guristas
Agent:	Arment Caute	Atma Aulato	Yada Vinjivas
Agent Level:		3	
Starting place:	Orvolle	Obe	Taisy



COSMOS Constellation

A COSMOS constellation is a region of space with agents and complexes which give out unique missions with special rewards or resources and reveal the back story of New Eden. There are COSMOS constellation in the sovereign space of each of the four main empires with agents in space dispatching special missions for anyone who meets their standing requirements.

There are also COSMOS constellations in 0.0 space where resources for booster manufacturing can be found.

Warning!: DO NOT FAIL, QUIT, DECLINE OR LET MISSION OFFER EXPIRE. It could lock you out from accessing other Cosmos agents.

Amarr COSMOS - Araz constellation

Agents in Araz reward players with blueprints that in many cases require Takmahl technology to build. These components can be found in Museum Arcana and The Labyrinth, as well as the Takmahl Technology skill book. Amarr COSMOS blueprints are focused around Lasers, Capacitor and Armor modules. All of the systems in Araz are 0.5 security.

http://wiki.eveonline.com/en/wiki/Amarr_Cosmos_(Guide)

Caldari COSMOS - Okkelen constellation

The agents in the Okkelen constellation reward players with Blueprints based on Talocan Technology, mainly focused on shield technology, railguns and missiles.

http://wiki.eveonline.com/en/wiki/Caldari_COSMOS_Guide

Gallente COSMOS - Algintal constellation

These agents reward players with Blueprints based on Yan Jung Technology, mainly focused on electronics, sensors, resistance and repair.

http://wiki.eveonline.com/en/wiki/Gallente_COSMOS_Guide

Minmatar COSMOS - Ani constellation

These agents reward players with Blueprints based on Sleeper Technology, mainly focused on ECM and EWAR.

http://wiki.eveonline.com/en/wiki/Minmatar_COSMOS_Guide

COSMOS Faction Ship Offers

The agents listed below can reward you with Faction frigate, cruiser and battleship BPCs (two-run, 0 ME/PE) if you have a high enough standing to them. The skill modifier does not have an effect on this standing.

Agent Name	Level	System	Place	Items Req	Standing Req.	Reward Bpc
Mandor Neek	IV	Jakri	Garisas Gate	30 Sansha Silver Tag	8.5	Amarr Navy Slicer
Jeeta Neek	IV	Jakri	Garisas Gate	30 Sansha Gold Tag	9.2	Amarr Navy Augoror
Zaestra Kuramor	IV	Jakri	Garisas Gate	30 Sansha Diamond Tag	9.9	Navy Apocalypse

Agent Name	Level	System	Place	Items Req	Standing Req.	Reward Bpc
Kaiko Maina	IV	Otitoh	Friggi Gate	30 Guristas Silver Tag	8.5	Caldari Navy Hookbil
Emma Tharkin	IV	Otitoh	Friggi Gate	30 Guristas Gold Tag	9.2	Caracal Navy Issue
Zoun Makui	IV	Otitoh	Friggi Gate	30 Guristas Diamond Tag	9.9	Raven Navy Issue

Agent Name	Level	System	Place	Items Req	Standing Req.	Reward Bpc
Jordan Usquen	IV	Jolia	Augnais Gate	30 Serpentis Silver Tags	8.5	Gallente Navy Comet
Babalu Wrezka	IV	Jolia	Augnais Gate	30 Serpentis Gold Tags	9.2	Vexor Navy Issue
Timmothy Sawyr	IV	Jolia	Augnais Gate	30 Serpentis Diamond Tags	9.9	Megathron Navy Issue

Agent Name	Level	System	Place	Items Req	Standing Req.	Reward Bpc
Mutama Czeik	IV	Barkrik	Hjoramold Gate	30 Angel Silver Tag	8.5	Republic Fleet Firetail
Thora Desto	IV	Barkrik	Hjoramold Gate	30 Angel Gold Tag	9.2	Stabber Fleet Issue
Makor Desto	IV	Barkrik	Hjoramold Gate	30 Angel Diamond Tag	9.9	Tempest Fleet Issue

Datacenter Agents

Event Agents located at Data Centers offer a one-time agent mission that will give Faction standing for a number of pirate tags. Data Centers are deadspace locations found at beacons in High-Security 'Empire' space. There are twelve Data Centers total with three Data Centers for each of the four major Empire factions, Caldari, Minmatar, Gallente and Amarr. (Amarr share theirs with the Ammatar and have more agents' total.) At each location, one agent offers the "Graduation Certificate" mission while the rest offer the "Keeping Crime in Check" mission, a few also offer the "Data Transportation" mission. Graduation Certificate and Data Transportation missions are simple courier missions.

Warning: Failing these missions will incur negative Faction and Corporation standing hits.

Agent Level	Required Standing	Tag Type
1	n/a	Copper
1	n/a	Bronze
2	1.00	Silver
2	1.00	Brass
3	3.00	Palladium
3	3.00	Gold
3	3.00	Electrum
4	5.00	Crystal
4	5.00	Platinum
4	5.00	Diamond

AMARR	CALDARI	GALLENTE	MINMATAR
Polfaly System	Ahtulaima System	Abenync System	Emolgranlan System
Kudi System	Saikanen System	Muer System	Arlulf System
Ferira System	Kamokor System	Ekuenbiron System	Engosi System

Racial (Dis)Advantages

Every race has its own characteristics regarding agent running, coming mostly from the bonus of their ships, the weaponry used and their tank.

Race	Advantage	Disadvantage
AMARR	Does not need supplies of Tech I ammo (lenses do not break, even after long-term usage); has decent tanking capability and is especially effective against Sansha's Nation and Blood Raiders	Damage output is rather weak compared to the other factions, also is very much dependent on the capacitor
CALDARI	Have the advantage of missiles (can do all types of damage); also very good shield tanking ability and can do great damage from distance	The NPC Defender missiles lowering the effective DPS; any missile damage is not instant, but must wait for impact
GALLENTE	Excellent drone support, accompanied by good hybrid weapons	Drones are like children: small, annoying, destructive and never pay attention to you
MINMATAR	Capacitor-free weaponry, excellent Alpha strike, good agility and velocity	The layouts of the mid and low slots; it might be difficult to choose an appropriate tank

Ships for Agent-running

I am often asked what ship I should run missions with? Unfortunately, there is no right answer. There are some suggestions below, but these are not to be taken as gospel. Use what is made available by your skills and financial resources.

Race	Ship/Class	Note
AMARR	**Abaddon**, Battleship	Excellent pulse laser weaponry, especially recommended against Blood Raiders/Sansha. Extremely good tank and damage.
	Apocalypse, Battleship	Decent tank, excellent long-range ship (Tech II pulse), good capacitor support.
	Absolution, Commandship	Excellent tank, good damage.
CALDARI	**Raven**, Battleship	No problem with tracking, able to change damage types, long-range.
	Nighthawk, Commandship	Especially good tank, advantage of missiles.
	Cerberus, HAC	Very good agility, long range.
GALLENTE	**Hyperion**, Battleship	Good hybrid weaponry, excellent tank.
	Megathron, Battleship	The most balanced ship regarding drones, tanking and mounted weaponry.
	Dominix, Battleship	Specialized in drones, variable damage types, and excellent tank.
MINMATAR	**Maelstrom**, Battleship	Excellent tank, variable damage types, good damage.
	Tempest, Battleship	Nice damage, good agility.
	Sleipnir, Commandship	Excellent tank, good agility.

Pirate Ships Names

The following table lists the types of NPC ships to make them easier to distinguish when you warp into a mission area:

Faction	Frigate	Destroyer	Cruiser	Battlecruiser	Battleship
Angel Cartel	Gistii	Gistior	Gistum	Gistatis	Gist
Blood Raiders	Corpii	Corpior	Corpum	Corpatis	Corpus
Rogue Drones	Alvi	Alvior	Alvum	Alvatis	Alvus
Guristas Pirates	Pithi	Pithior	Pithum	Pithatis	Pith
Sansha's Nation	Centii	Centior	Centum	Centatis	Centus
Serpentis Corporation	Coreli	Corelior	Corelum	Corelatis	Core

Special EW-ships

Elite class pirate ships (like interceptors and cruisers) behave like Electronic Warfare frigates and recon ships. Seeing them on the Overview means EWAR, so be prepared.

Faction	Name / Pre-fix
Angel Cartel	Arch, Angel Webifier, Angel Viper
Blood Raiders	Elder
Rogue Drones	Strain
Guristas Pirates	Dire
Sansha's Nation	Loyal
Serpentis Corporation	Guardian
AMARR CALDARI GALLENTE MINMATAR	Support Frigate

Rewards!

	There is more to be gained from agent missions than simply a larger wallet:
	Reward: Typically ISK, but mainly in Storyline and COSMOS missions you can get implants, hardwiring or COSMOS BPCs (Blueprint Copies – limited use versions of a Blueprint Original – see Chapter 7: R&D). These items also have a value in ISK. This is taxable income if you receive it in ISK form.
	Time bonus: If you complete the mission within a given time you get an extra reward, which is similar to the normal reward. It is tax-exempt income.
	Bounty: These are CONCORD-issued rewards for eliminating the NPCs of the missions. This is taxable.
	Loyalty Point (LP): Although underestimated by many, LPs can, ideally, be the source of a significant part of your income.
	Loot: The wrecks, containers and sometimes the destroyed buildings of the NPCs contain modules, ammo, and other equipment. It is worth collecting them, especially in low-sec or 0.0 areas where access to raw materials can be limited.
	Salvage: Rig components can be gained by using the salvager module (or drone) on NPC wrecks.
	Standing: Although it does not affect your wallet directly, it does affect the efficiency of refining your ore and loot. It also affects the payable broker fee on the market.

Bounty

Destroying every ship (or building) that is labelled as 'Wanted' (and has a bounty) is rewarded. It is credited to your wallet every twenty minutes. The corp tax is deducted from the bounty and goes straight into the master wallet of the corp.

Loot

Loot is found in the wrecks and containers of destroyed NPCs and the buildings they leave behind. Sometimes the mission requires a specific item, but most of the time you do not have to bother with loot to complete a mission.

Containers and wrecks do not disappear after you go back to the agent to complete the mission; they stay for about one and a half to two hours, so you can go back and collect them after completing the mission (or in case of farming, before it). Wrecks may contain valuable and not so valuable modules, ammo, etc. Remember to bookmark the location, as once the mission is turned in, the gates and references in the log disappear. One bookmark is enough per pocket. If the wrecks are scattered and you do not want to fly 100km between them, then you should create bookmarks at both ends of the pocket.

While looting the wrecks, you can also salvage them. All you have to do is fit a salvager module on your ship, activate it on a wreck, then wait until it disappears after a successful (or not) salvage. It is chance-based, so there is a possibility that you'll get nothing from a wreck. Salvage ends up in your cargo automatically. If you salvage a wreck before looting it of its normal drops, the loot will still be there, but floating in a container instead so you can still collect it.

NPC cans and wrecks are one-way containers; you cannot put anything in, only take out. If a wreck holds more than 27,000m^3 (this is the size of a standard container) and you salvage it before collecting them, the amount will be reduced to fill the container, preventing it from overflowing (but this only matters in 0.0) and the extra amount is lost.

To Loot Or Not To Loot?!

Time is money. You will get neither LP nor standing from the loot, so think twice when you decide to loot and salvage. If you have the time, ship and an enthusiastic partner who wants to help you, then it is worth taking on.

There are special cases when the looting/salvaging is a must. These ships are called Faction ships (or the extremely rare Officer – only in 0.0 space and only in battleships). They usually have valuable loot, so collect them. Even a faction frigate may contain something that is worth something. All the wrecks can be looted, but you must consider whether it is worth the time. As a beginner, it is recommended that you loot and salvage the wrecks of the smaller ships as well, because even cruiser/battlecruiser wrecks can contain worthy modules.

In level 4 missions, there is an unwritten rule that if the mission has lots of battleships, it is wise to loot them. Some examples of these missions are: Blockade, Enemies Abound, Recon 1/3

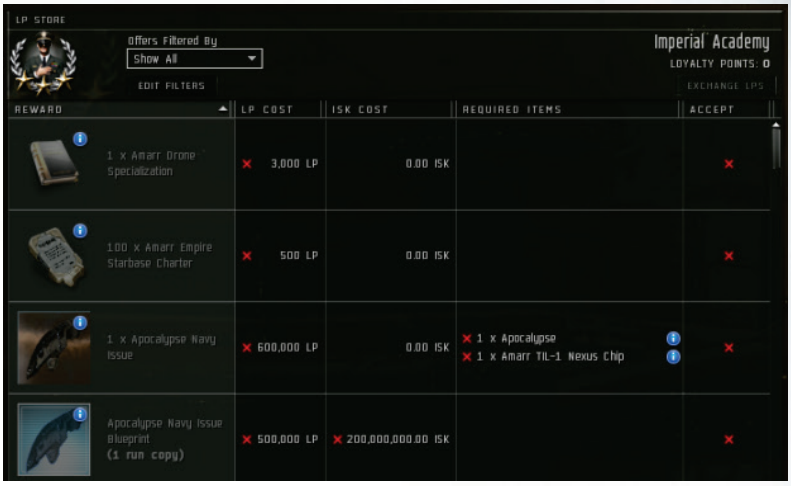
Looting Techniques

Basically there are Four methods, which are:

- You are looting as you progress. This slows you down, but lowers the chance of an enthusiastic ninja salvager harvesting your hard work.
- Looting after the mission. Its advantage is that you can use a specialized ship fitted with cargo extenders, tractor beams and salvagers. The harvesting is quicker this way and there are no longer enemies to shoot you.
- Have a friend/corpmate loot the wrecks and do the salvaging using any of the above mentioned methods. Every time you finish looting, check it for valuable items. Usually, the Meta level 3 to 4 modules are worth much more on the market than by refining them. Also, there are other items that you should never collect, like Capacitor Booster Charges. These items have low material-count, are worth almost nothing, but eat up a lot of space in your hold.
- Mobile Tractor Unit: When deployed it automatically uses a built in tractor beam to retrieve wrecks and cargo containers within 125km and collect their contents into its gigantic 27,000m^3 cargo hold.

Loyalty Points (LP)

Loyalty points are the extra rewards for your hard work. Every NPC corp maintains an LP Store at the station where you can get special (faction) ships, modules, BPCs for ships and for modules and, of course, ammunition. Sometimes money and the LPs are not enough for an item. You may need special tags (factional enemies give them as loot).



Which NPC corp has what kind of items in its LP Store?

Currently the best database for answering this question is the Loyalty Points Database **Loyalty Points Database** .

Is that worth it?

When it comes to deciding which loot to redeem for LPs and which to sell/refine, the golden rule is that the exchange rate is 1,000 ISK per LP. The rate of LP exchange can be calculated by (all income – all expense) / LP cost.

It is a common mistake to work for a corp to get a specific item from its LP Store. It is wiser to work for a corp that has better rate of exchanging LP, and then buy the desired item via contract for ISK.

Recommended Items:

- Module BPCs.
- Some types of faction ammo (although the competition has become strong since they can be sold on the market as well).

Not recommended items:

- Navy ships and their BPCs.

Insignias And Tags

You can acquire insignias and tags from wrecks in missions (insignia from Empire NPCs, tags from pirates). Their common attribute being only a few lines stating: “Identification tags such as these may prove valuable if handed to the proper organization.”

They can be exchanged in LP Stores for valuables or at Data Center Agents to improve your standing.

Tags for security status?

There are four new classes of NPC to each of the five pirate factions that populate low-sec areas: Sansha, Guristas, Angels, Serpentis and Blood Raiders. Each faction has the following new NPCs:

[FACTION] Clone Soldier Trainer: In charge of funds, equipment and locales used in the preparation and deployment of clone soldiers loyal to the faction.

[FACTION] Clone Soldier Recruiter: In charge of scouting vulnerable areas - remote planets, isolated outposts, interstellar colonies and other places that hold human life - with the aim of bringing in new recruits for the pirates' clone soldier programs.

[FACTION] Clone Soldier Transporter: Responsible for the swift conveyance of clone soldiers to their intended destination.

[FACTION] Clone Soldier Negotiator: A fixer who establishes contracts between pirate-trained clone soldiers and those who might employ their services.

These NPCs will be found according to the regular faction distributions, but **only in asteroid belts in low security space.** The different classes will vary in difficulty and rarity. They will be more common than office/faction spawns, but less common than the regular pirate NPCs that you see in the belts. They will put up a reasonable fight (including using warp-scrambling effects) so come prepared!

Once you've found one of the new pirates and killed it, you should go and check the wreck. In addition to some random loot, each NPC will always drop one tag.

If you're interested in raising your security status, the first step is to acquire a collection of tags (via whatever means you find appropriate). The quantities and types you need will depend on your current security status, and on how high you are looking to raise it. Each tag type only works for a specific band of the security status spectrum, so if you wish to go all the way up from -10, you're going to need some of each. Each tag is worth 0.5 points of security status, so that's 20 tags between -10 and 0: -10 ---> -8: 4x Trainer, -8 ---> -5: 6x Recruiter, -5 ---> -2: 6x Transporter, -2 ---> 0: 4x Negotiator.

Tags can only be used to raise a security status between -10 and 0. If you want to get higher than zero, you need to do that the old-fashioned way.

Once you have your tags, you need a place to turn them in. To incentivize capsuleers to hunt down and kill the new pirates, CONCORD and DED stations in low-security space have opened a new service - the Security Office. These Security Offices are scattered across 45 low-security stations, like all station facilities. Take your tags to one of these stations, drop them in to your hangar, and the Security Office will be available.

Here you can drag the slider to the right according to how much of a security status gain you need. The tag requirement and ISK cost will update, as will the text describing the consequences of the resulting status. Once you're happy with the deal, click Exchange Tags to complete the transaction. The tags and ISK will be handed over to CONCORD, and your security status will be updated in return.

Contract Tricks And Tips

When you put items up for contract to make money, always ensure that you are filling the description and item type accurately, so that you can sell it for the right price. An accurate name will achieve a higher price, as many people will search for items using that filter option. Note: playing with the description is one of the basics of scamming. Be aware. You may also cheat a little by selling your module under a different name. For example: Khanid Navy Armor Repairer has the same statistics as the Imperial Navy Armor Repairer, so just fill in the description field with the more popular name, as many people prefer to search for such an item.

Maximizing Loyalty Points

- The lower the security status of the system where the agent is located, the better (watch out for a system's 'true' security status in 0.0).
- Find agents with high level as possible.
- Train Negotiation skill to level V (takes about two weeks).
- Achieve a high personal standing with the given agent as possible.
- Whenever you can, use the "blitz" mode while doing agent missions: do not take down everything but the main targets.
- Forget the common loot, take only the worthy (or invite a beginner who needs the money and the standing to loot for you).

In the table below you can see well how many LP you can expect with a certain skill (in this case this is the Security Connections), assuming you have 10 effective standing and the agent. Do not forget that these values are informal, not 100%.

Security Connections		System Security Status (The Blockade Level 3)									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Lvl	0	2811	2572	2409	2194	1993	1888	1644	1436	1243	1134
Lvl	1	3092	2829	2650	2413	2192	2077	1808	1580	1367	1247
Lvl	2	3373	3086	2891	2633	2392	2266	1973	1723	1492	1361
Lvl	3	3654	3344	3132	2852	2591	2454	2137	1867	1616	1474
Lvl	4	3935	3601	3373	3072	2790	2643	2302	2010	1740	1588
Lvl	5	4217	3858	3614	3291	2990	2832	2466	2154	1865	1701

Security Connections		System Security Status (The Blockade Level 4)								
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
Lvl	0	8016	7565	7205	6436	6078	5298	5019	4362	3820
Lvl	1	8817	8322	7926	7079	6685	5828	5521	4799	4202
Lvl	2	9619	9078	8647	7723	7293	6358	6023	5235	4583
Lvl	3	10421	9835	9367	8367	7901	6888	6525	5671	4965
Lvl	4	11222	10592	10088	9010	8509	7418	7027	6107	5347
Lvl	5	12024	11348	10808	9654	9116	7947	7529	6544	5729

Finishing Missions In A Fleet

When other people help you in a mission, they will also get their fair share from the bounty (income/participants tax). You also have the option to share the reward received from the agent with them. All you have to do is choose the option marked 'I and my fleet completed the mission.'

- The ISK (reward and time bonus), the LP and the corp standing will be divided equally among the people, up to a maximum of 10 members. (Attention! Faction standing – from Storyline missions – is not divided; the owner of the mission gets it all!
- The penalty for dismissing a mission only applies to the owner of the mission
- Choosing the option marked 'I have finished the mission, give me everything' will result in you getting all the reward; the others get none.
- If the fleet is bigger than 10 members, the reward will be decided in alphabetical order.

Standings

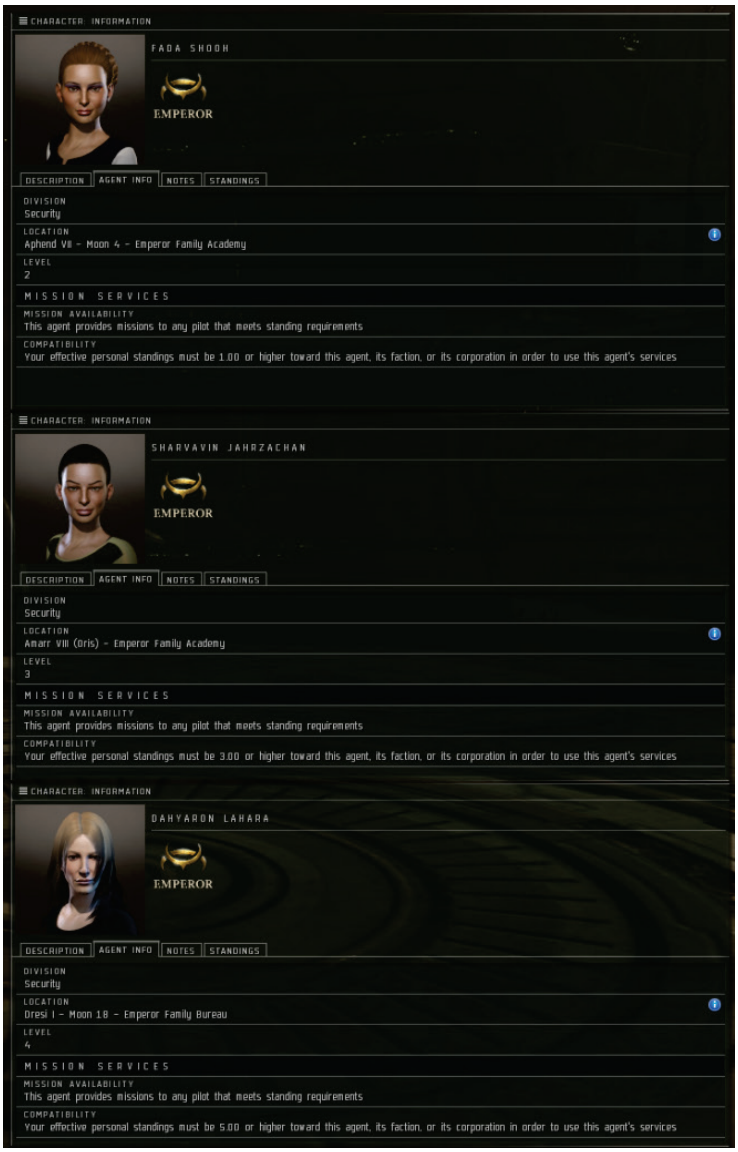
The two most often asked questions regarding Agent/Mission Running:

- How much standing do I need to reach the next agent level?
- How much standing is needed for a certain agent?

Always check for the agent's information window, "Agent Info" tab. You will see there the necessary Personal/Corp/Faction standing at the "Compatibility" section.

The necessary standings are:

- Level 1: n/a
- Level 2: 1.0 standing at least
- Level 3: 3.00 standing at least
- Level 4: 5.00 standing at least
- Level 5: 7.00 standing at least



Standings affect many features in the game. At the simplest level standing controls which agents you have access to. Beyond this, standing impacts upon a pilot's access to jump clones, their ability to anchor Player-Owned Structures in Empire space, amounts of minerals lost in the refining process, and a whole host of costs including sales taxes, research, and factory costs.

Furthermore, if you have -5.0 standing or below with a given faction, you run the risk of being attacked by their navy when entering their space. You can view your faction, corporation, and agent standings via the "Liked By" and "Disliked By" tabs under your "Standings" section on your character sheet. Agent availability is dependent on your corporation and faction standing, each agent requiring you to have a certain standing to be able to work for them. The standings you need for a particular agent can be found on their "Agent Info" tab under "Mission Services".

There are three different levels of standings. The more widespread a standing is, the harder it is to increase it:

Agent: such standings only work for a single agent. Every time a mission is completed you receive personal standings with the agent who offered it to you as well.

Corporation: these are your personal standings toward an NPC corporation, and not your own corporation standing toward another NPC. Corporations contain numerous agents and by increasing standings with them you will be able to access more agents inside them. Such standings may be augmented by missions.

Faction: faction standings remain the most general but most difficult type of relationship to increase. Each faction possesses numbers of corporations inside it, so if you raise your faction standings you will be able to access all corporations linked to it. Faction standings may only be augmented by storyline, COSMOS, or Epic Arc missions.

As you can see, it is a lot more beneficial to have high faction standings, as you can directly access all corporations and all agents under that faction by doing so, instead of increasing the corporation standings one by one.

Example: The Gallente Federation (a faction) has numerous corporations under its wing, such as the Federation Navy, Duvolle Laboratories, and the Scope. In each of these corporations you have agents with different levels. Raising the Gallente faction standing to +3.00, you will be able to access any agent in any corporation under the faction whose required standing is less than or equal to +3.00.

An interesting note about agents: most people relate an agents "Required Standing" to the standing one must have for that agent's corporation in order to access that agent. This is not entirely true. Because of the "corporate-wide" structure of standings many people assume this and forget about the agents personal standings toward you. You can raise standings with a particular agent fairly quickly by fleeting up with someone who can access that agent and whose willing share mission rewards with you (including standing increases). This way you don't have to grind level 2 and level 3 missions for a corporation in order to get access to that agent. This, of course, will only work for that particular agent, and not for all agents in the corporation.

Example: You're wanting to mission for a level 4 Republic Fleet agent whose required standing is +6.20, however you only have +1.40 standings with the corporation. To skip having to grind lower-level missions to raise the needed corporation standing, have a fellow pilot help you out by running missions for this agent and sharing their standing increases with you. After a number of missions, your personal standing with that agent will reach his or her required standing, allowing you to run missions for them on your own.

Required Skills

This section is about the skills recommended for mission running. Beyond these, you should also train the necessary skills to fly an appropriate ship and all of its modules.

Skills For Standing

Any increase in standing can be measured if we subtract the current standing from the maximum (10.00) and then multiply that number by the percentage your trained skills grant (see list below).

To put it simply, the higher the standing you have, the less you will get every time you earn some. This way the ultimate 10.00 is unreachable, but due to the way the game rounds figures out, it can show it as 10.0.

- **Connections**

Grants an immediate 4% positive standing to all friendly NPC corps. (If you have none, then the effective standing remains at 0.)

- **Criminal Connections**

This works similar to Connections or Diplomacy, but affects the corps and factions whose own standing is negative towards CONCORD. These are typically NPC pirate factions and corps.

- **Diplomacy**

This works like the Connection skill, but it affects the corporations and factions that are hostile towards you. A corp or faction is hostile when your basic (without skills) faction standing is negative. So even if you have an 8.0 standing with a corp, if the faction standing is -1 then the corp is hostile towards you.

- **Social**

This grants +5% for the amount of standing you get every time you complete a mission. So if you have the skill at level V and your base standing reward is 8%, you will get (8*(5*1.05)) = 10%. This skill affects storyline missions as well.

Skills For Rewards

- **Negotiation**

This increases by +5 the effective quality of all agents.

The 'Connection' skills listed below (not to be confused with the Connection skill listed above!) increase by 10% per level the Loyalty Points rewarded if the particular skill affects the division of your agent. Every division is affected by one of these skills (as the table lists it below). If the skill are trained to level V, +50% LP is to be gained for the missions.

Loyalty Points affecting skills

The connection skills increase the Loyalty Points (LP) you may get after completing a mission. Assuming you have level 5 skill you may get +50% LP for each mission.

Division	Necessary skills
Distribution	Distribution Connections
Mining	Mining Connections
Security	Security Connections

Incursions 101

Many thanks to HardinSalvor and Ammzi for providing this brief guide to incursions. For more details, visit the main website at: **http://incursionguide.wordpress.com/.**

Incursions are generally considered a PvE feature but are also designed to encourage PvP. Incursions differ from previous PvE content in many ways, the most notable being their difficulty and their effects on the local space in which they take place.

An incursion is an invasion by NPC Sansha forces on a constellation. Systems in the constellation are divided into different categories: staging, vanguard, assault and headquarters. The staging system contains scout sites, the other systems contain site types of the same name. Players can gather within these systems and fight against the Sansha forces to drive them away.

When inside an incursion area, a bar will show on the upper left of the screen indicating the strength of the Sansha presence, also known as 'influence'. When the bar is completely blue, the Mothership (final boss) will spawn and you will have a chance to finish the encounter.

Why Incursions?

There are several reasons for you to undock and start getting involved with incursions, the main one being ISK – lots of it! When completing an incursion site you will receive ISK and CONCORD loyalty points. The amount you receive depends on which class of site you completed.

The rewards, assuming you are in high-sec and have the optimum amount of pilots, are as follows:

Vanguard: 10,5 m ISK + 1400 LP (Maximum of 10 pilots in fleet and on-site)

Assault: 18,2 m ISK + 3500 LP (Maximum of 20 pilots in fleet and on-site)

Headquarters: 31,5 m ISK + 7000 LP (Maximum of 40 pilots in fleet and on-site)

Assuming you have the right fleet composition you can complete a vanguard site in about five to 10 minutes, assaults in about 20-30 minutes and headquarters in 35-50 minutes.

There are plenty of other reasons besides the ISK that you should join in on incursions, not least of which is getting solid experience in fleet combat.

- Being together with 40 other pilots struggling to fight off 10 heavily-fitted Sansha battleships and a ton of support ships is a tough nut in itself.
- To win, you will have to learn about:
    - Fleet compositions,
    - Efficient strategies,
    - How logistics works,
    - Target broadcasting and much, much more.
    - Pilots from all over eve (Nullsec, low-sec, wormholes and high-sec) will join together and you can gain contacts and hear tales from all across new eden.
    - And if you're looking for a new corp, it sure beats spamming the recruitment channel.

Joining An Incursion

The first couple of days of incursions proved to be very hard for capsuleers since this is not your normal PvE. Fighting Sansha is as close as you can get to PvP in EVE (they even warp off). Therefore you will mostly find fleets categorized by tanking type (armor or shield) as well as what class of sites are being run.

The fleet compositions for the different types of systems in an incursion are:

Vanguards: 2-3 Logistics, rest DPS consisting of HAC – Tech III – Command ships – BC and possibly a hacker for the Override Transfer Array sites.

Assaults: 5-6 Logistics, rest DPS mixed short-range and longrange (long-range is 120 km +), and preferably scorpions or other jammers to ease up on the DPS.

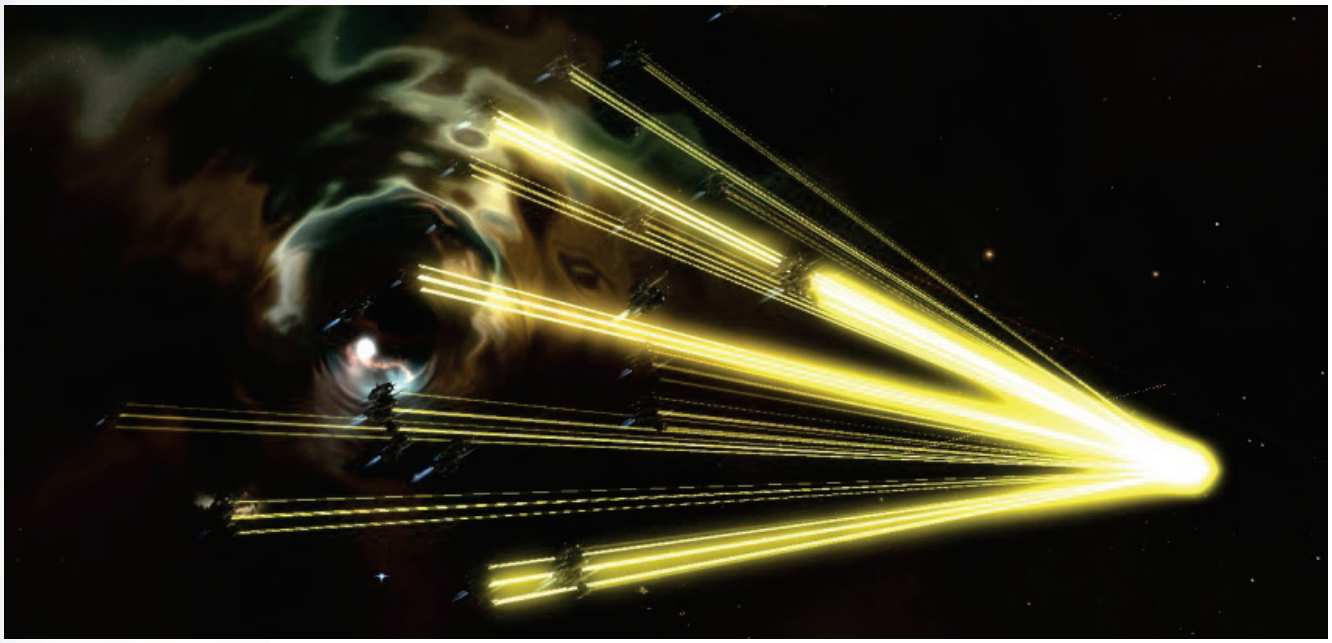
Headquarters: 7-10 Logistics, rest DPS mixed short-range and long-range (long-range is 120 km +), and preferably scorpions or other jammers to ease up on the DPS.

Always remember: if you are shield tanked you will want to join a shield fleet, if you are armor tanked you will want to join an armor fleet.

You'll find fighting the Sansha's solo hard, if not impossible. More than that, you gain no advantages fighting the Sansha's pirates on your own. On the contrary, you risk losing the entire reward, ISK and LPs. Organisation is the key, and organising the right size and type of fleet is optimal.

So, Just Grab My Favourite Fitting For Missions, and…

In very short: Don't!



One thing to make clear, your level 4 mission fit WILL MELT in an incursion. I have looted over 10 different battleships all with level 4 mission fittings. So forget everything about running missions: incursions are completely different.

In an incursion you will want to fit BUFFER + RESIST on your ship. That means NO local rep and NO passive recharge tank!

- For armor that means you must fit a minimum 1 x 1600mm Reinforced Rolled Tungsten Plates and resist, resist, resist.
- For shield this means shield extenders and resist, resist, resist.

The buffer gives the logistics in your fleet time to lock on to you and activate repairs.

Buffer is particularly important in armor fleets because the repair modules of armor logistics will only repair you at the end of a cycle rather than at the start, leading to a delay of several seconds compared to shields.

Once friendly logistics have an eye on you, the effective hitpoints that they repair is dependent on the resists you have. With good resists you are very unlikely to go down. Just remember to hit that little 'Need armor/shield' button in your fleet window promptly as soon as the Sansha forces lock on to you. You can tell when you are locked because yellow or red brackets will appear around the icons of the Sansha units.

Locating An Incursion

Incursions can take place anywhere in known space (read: not in Wormhole space). There are several ways to locate incursions within EVE including the use of your journal or through the in-game map.

Using the Journal

- Open the Journal neo-com
- Select the Incursions tab from the first row of tabs
- Select the locations tab from the second row of tabs

You can now sort the Incursions by the name of the constellation that they take place in, how many jumps away they are, and several other parameters. Using the journal to locate an incursion to participate in provides several advantages over using the map.

System Effects

Once an incursion has started, system-wide effects because all ships to have reduced shields, armor and capacitor. Once enough low-level sites have been defeated, system-wide effects are reduced and harder sites are defeatable.

The system-wide effects are:

- Reduction of all shield/armor resistances
- Reduction of turret, missile, drone and smartbomb damage
- Jamming of cynosural fields throughout the system
- Reduction of 50% on all NPC bounties

Combat Sites And Difficulty

Scout

Name	Forces Required	Military Intelligence	Rewards
Nation Industrial Proxy	3 - 5 pilots	Your primary objective is to clear the local asteroid colony of hostile Sansha forces. This is a target of opportunity, and has minimal impact on the larger anti-Sansha campaign.	3,500,000 ISK × ratio 400 CONCORD LP × ratio
Distress Beacon	3 - 5 pilots	Your primary objective is to assist a civilian Orca-class vessel currently being pinned down by Sansha forces. The Orca will be able to escape as soon as you can secure the area. This is a target of opportunity, and has minimal impact on the larger anti-Sansha campaign.	3,500,000 ISK × ratio 400 CONCORD LP × ratio
Forward Reconnaissance Outpost	3 - 5 pilots	Your primary objective is to destroy any Sansha vessels defending the transmitter arrays. Once the area is secured, surveillance teams can move in to back hack the Sansha information network. This is a target of opportunity, and has minimal impact on the larger anti-Sansha campaign.	3,500,000 ISK × ratio 400 CONCORD LP × ratio
Propaganda Cluster	3 - 5 pilots	Your primary objective is to storm the Nation's media control facility and destroy any defence forces you find there. This is a target of opportunity, and has minimal impact on the larger anti-Sansha campaign.	3,500,000 ISK × ratio 400 CONCORD LP × ratio

Vanguard

Name	Forces Required	Military Intelligence	Rewards
Nation Mining Colony	5 – 10 pilots	Your primary objective is to destroy the Sansha's Nation battle station. Clearing the area of hostile forces should decloak the Nation's ore refinery. Mine the local Lyavite asteroids and transport the ore to the refinery. The chain reaction caused by refining the explosive ore will tear the battle station apart.	15,000,000 ISK × ratio 2,000 CONCORD LP × ratio
Nation Commander Outpost	5 – 10 pilots	Your primary objective is to destroy the Sansha's Nation fleet amassing here, including any commanders present.	15,000,000 ISK × ratio 2,000 CONCORD LP × ratio
Override Transfer Array	5 – 10 pilots	Your objective is to destroy the Sansha's Nation fleet amassing here. They will be making use of logistics arrays, so disabling them may be advisable.	15,000,000 ISK × ratio 2,000 CONCORD LP × ratio

Assault

Name	Forces Required	Military Intelligence	Rewards
Overwhelmed Civilian Facility	10 – 20 pilots	Your objective is to intercept the departing Sansha's Nation fleets and rescue the captured civilians from their smuggler freights. Once you have filled the freighter it will evacuate the remaining civilians and your assignment will be complete.	26,000,000 ISK × ratio 5,000 CONCORD LP × ratio
Nation Consolidation Network	10 – 20 pilots	Your objective is to split your forces, clear a path to the Nation's staging area, and destroy the fleet you find there. Sansha defenders have designed their security to separate capsuleer forces, but once both sides have breached the final area you will be able to reunite.	26,000,000 ISK × ratio 5,000 CONCORD LP × ratio
Nation Commander Stronghold	10 – 20 pilots	Your objective is to locate the Nation commander and assassinate them. Once you have separated the commander from the rest of the Sansha fleet they will scatter and flee.	26,000,000 ISK × ratio 5,000 CONCORD LP × ratio

Headquarters

Name	Forces Required	Military Intelligence	Rewards
True Power Provisional Headquarters	20 – 40 pilots	Your objective is to secure a path to True Power's Mobile HQ and then destroy it. You will need to pass through three layers of security before you will arrive at the station. Sansha commanders will attempt to reinforce the area en-masse if you give them time to, so be sure to bring pilots to breach their defences quickly.	45,000,000 ISK × ratio 10,000 CONCORD LP × ratio
True Creations Research Center	20 – 40 pilots	Your objective is to secure the area around the True Creations Research Center and then destroy the station itself. You will have to commandeer their prototype weapon in order to disable the station's shielding.	45,000,000 ISK × ratio 10,000 CONCORD LP × ratio
Nation Rebirth Facility	20 – 40 pilot	Your objective is to destroy the Sansha fleet guarding the cloning facility. You will not be able to destroy the facility itself, your only objective is to remove the defensive fleet.	45,000,000 ISK × ratio 10,000 CONCORD LP × ratio

Flagship

Name	Forces Required	Military Intelligence	Rewards
The Kundalini Manifest	30 – 50 pilots	Your primary objective is to locate the Sansha's Nation flagship and destroy it. The destruction of this vessel will bring the local incursion to a halt.	90,000,000 ISK × ratio 20,000 CONCORD LP × ratio
Uroborus	30 – 50 pilots	Your primary objective is to locate the Sansha's Nation flagship and destroy it. The destruction of this vessel will bring the local incursion to a halt.	90,000,000 ISK × ratio 20,000 CONCORD LP × ratio

Good To Know – Useful Links

Incursions may happen anywhere, at any time, from null-sec alliance space to high-sec travel routes. The Sansha's Nation is seriously pissed and doesn't care about politics; you would be quite mad too if you were stuck living with giant spikes on your head and shoulders.

A couple of very good and detailed guides can be found at:

http://eve-survival.org/wikka.php?wakka=IncursionsReports

And the source of this article:

http://incursionguide.wordpress.com/

Channels – Mailing Lists

If you are interested in incursions, here is some channels and mailing lists you can join to learn more and find people to fly with.

Channels:

- „BTL Pub" – for shield ships to form in.
- „BTL Armor" – for armor ships to form in.
- The Ditanian Fleet – for armor ships to form in.
- "Incursions" – official CCP incursion channel.

Mailing Lists:

- Phatt Incursions – information and tactics primarily for shield ships. Run by a superb shield fleet commander.
- Incursion Blacklist – a list of known griefers and other people you would be advised to keep out of fleet.

Sansha Ship types

Antem Neo [cruiser]: These ships are long range snipers. They sit up to 150Km away from the fleet and do a moderate amount of DPS. They are cruiser sized and have high resistances, requiring roughly as much damage to kill as a Yulai Crus Cerebi.

Arnon Epithalamus [cruiser]: These ships are electronic warfare cruisers. Their closest equivalent is recon ships. They jam and scram, making them very dangerous to the logistics cap chain. They also put out some DPS.

Auga Hypophysis [cruiser]: They scram and web as well as providing quite a lot of DPS but are fairly easy to kill, making them a good choice of target.

Deltole Tegmentum [battleship]: They fire Banshee Torpedo's, doing an average amount of DPS. They also have medium neutralizers and scrams and target painters. They have an average tank.

Eystur Rhomben [frigate]: These ships are especially good at killing drones. They have an average tank but fly exceedingly fast. They have a high DPS for a frigate.

Intaki Colliculus [battleship]: The ships are at the lower end of the Sansha's ships for DPS and tank, firing cruise missiles. However they provide some logistics support to other Sansha's ships. One thing to note is their small signature radius, which falls roughly between a cruiser and battleship.

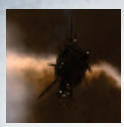
Mara Paleo [cruiser]: These ships fill a logistics role in the Sansha's fleets. They have high resistances and provide a small amount of reps to the enemy ships.

Niarja Myelen [frigate]: These ships are ewar frigates. They jam and neut, making them exceedingly dangerous to Logistics cap chains. Luckily they don't do any DPS and they have virtually no tank.

Ostingele Tectum [battleship]: They put out the most DPS of any Sansha ship. They also have an above average tank, making them difficult to kill.

Outuni Mesen [battleship]: These ships are ewar battleships. They web, scram and neut heavily. They also put out a small amount of DPS and have an average tank. They are highly dangerous to all ships and are often the primary target.

Renyn Meten [frigate]: These ships are at the bottom scale of the Sansha's ships. They provide very little DPS and have a small tank. The only thing of note is that they also web ships.



Romi Thalamus [cruiser]: These ships fill a middle of the road role in Sansha fleets. They provide an average amount of DPS and have an average tank for a cruiser. They are completely unremarkable.

Sansha's Nation Commander [frigate]: These ships are command ships that boosts the enemy fleet as well as scramming. It has a soft tank but puts out a lot of DPS.

Schmaeel Medulla [frigate]: These ships are tacklers. They web and scram whilst doing a small amount of DPS. They only have a small tank but they do go exceedingly fast, meaning most ships will have to web them before being able to hit them.

Tama Cerebellum [frigate]: These ships are stealth bombers. They scram targets and fire torpedoes, making them very dangerous. They have a soft tank but are often the target of enemy remote reps.

Vylade Dien [cruiser]: These ships are command ships. They provide boosts to the entire enemy fleet whilst also having one of the highest resistances and tanks of the Sansha's ships. While the nature of the boost is still unclear, it's thought that they increase Sansha resistances.

Yulai Crus Cerebi [battleship]: These ships are long range snipers. They orbit at up to 120Km away and do an above average amount of DPS. They have a reasonable amount of tank but are otherwise unremarkable.

I've seen a lot of bad fleet commanders flying in incursions. Most people think that just like missions you can read and follow the guides written by myself and fellow FCs and you'll be fine. Unfortunately with Incursions that's simply just not the case.

Incursions have been compared to PVP quite a lot and it's true, they are the closest to PVP you can get whilst still PVE'ing in EVE. Another aspect that's similar to PVP is the way you FC the sites.

Although the guides are a good start there is no one way to FC a single site. There are random triggers in some and it's not going to hurt you too much if you stray a little from the guide in others. They are only guides after all. But some FC's are becoming dependent on these guides and that's dangerous.

Being a good FC isn't about knowing how to run a site when everything is going well. It's about knowing what to do when things go wrong. You need to be able to analyse the situation quickly, keep cool, and most importantly keep your fleet cool.

The first thing that will happen when something goes wrong is everyone will start panicking and talking over coms. As an FC you need to take control, shut everyone up and start calling targets in a cool, efficient manner. If you show confidence in your abilities others will follow your lead.

PLANETVILLE

CHAPTER 5

EVE INDUSTRIAL BLACK BOOK

ISK VOL I

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Collateral Damage

A man, neither too tall nor too lean, sat in his office. He did not pay attention to the warning signs, and instead was reading his book, I.S.K., intently. He would have done better to have read it earlier so that he could have heard the warning signs instead. The signs of catastrophe, the likes of which humankind had never seen before, were unfolding on the distant horizon. The ever darkening skies and the gigantic lightning strikes of immeasurable energy promised nothing good.

He was responsible for the many people working and living on the station. Their job wasn't easy and far from safe. The surface harvesting they were hired for promised significant profit. All the planet-side mining, logistics, and political bureaucracy were considered established thanks to the company's caretaking operations. The company had to manage, simultaneously, the exploration of raw materials, construction and upkeep of the mines, transportation of the raw materials extracted, and the processing of that into finished goods after the extraction process. But there was just one tiny glitch – the processed materials needed to be transported off the planet somehow.

The nondescript man thought back to how the manual specified this was to be achieved, all in precise diagrams and monetary calculations to manage cost. Load the materials into a space container, load the space container onto a launch vehicle, and launch that vehicle into space where the transport ship awaited, scanners ready, to locate the cargo and haul it away.

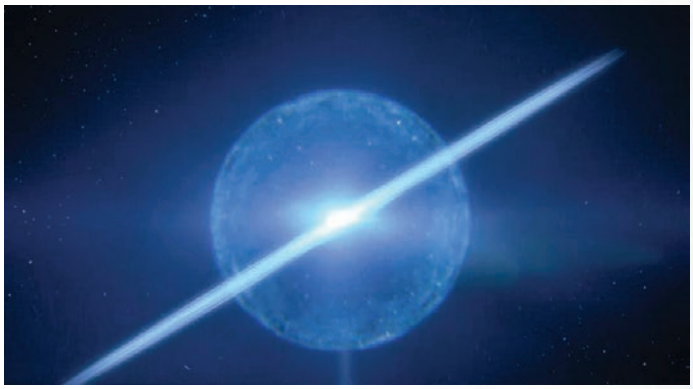
At least that was the theory. Unfortunately, the particular atmosphere of the planet and the binary star at the centre of the solar system made this impossible. Between the irregular solar wind emissions and the unpredictable gravitational waves generated by the two stars, they created such random patterns of atmospheric anarchy, that every take-off or landing which was not perfectly timed and managed down to the nano-second was a failure. Since humans are not prone to repeatable perfection, the consequent cosmic forces tore the launch vehicles to shreds.

What's more, every 1,313th year carried a new destiny and a new beginning for this system. Giant eruptions of gravitational and electromagnetic waves struck out for their journey from the centre of the deadly dance of the suns, slowly and methodically sweeping away everything and everyone who might be in the wrong place at the wrong time. The company employees didn't know, and how could they, when the last little Reaper was disintegrated in the planet's history. This was neither their job, nor were they paid to know it. The company had never taken the time, money or energy to invest in this system's complete and comprehensive analysis. No, it was a typical corporation, greedy and impatient, the scent of profit wafting from the mineral scanning reports. The shareholders demanded profits and profits they shall have.

The extraction was in progress; the acquired profit was to be collected in the usual bank accounts. The important part was done. All that was left was to await the flow of incoming ISK.

The company was more interested in this than in the cost of a few hundred workers' nameless lives on a remote planet. Besides, the profit margin was considerably higher than any compensation that might have to be paid to victims' families for an accident. These amounts were accounted for, documented neatly in their little columns and rows on their spreadsheets. Regardless, the unwritten company policy was that there would be no accidents reported, so it just became extra profit. The lawyers had seen to that in the small print.

The storm strengthened, the omens increasingly screaming: YOU MUST ESCAPE! But there wasn't anybody who could have noticed these signs. All the lemmings headed to the proverbial cliff. If only one sun-survey had been completed, if the commander had been more prepared, if the company hadn't been as greedy, if the peoples' lives had been worth something...



But it was too late, the explosion had begun and it only took eight minutes to reach their particular planet. One gigantic, deadly and overwhelming wave of destructive force was flowing out, on its crest the matter of the stars frothed, a corona for its apocalyptic force.

This time, however, things were slightly different – in just the correctly miniscule amount that would change everything. This time, the eruption caused instability in the gravitational field of one of the suns, which released just enough energy to cause the two stars to shift and then collide, thanks to the twin-suns' incredible amount of gravitational force. The subsequent events can only be imagined as one of the last scenes for everyone there.

The incredible beauty of the supernova outburst produced a massive black hole. Not a sight the unfortunate observers survived to describe. The incredibly powerful gravitational field of the black hole sucked everything into it, everything of substance and mass in the sector. Of course, the impact on the planet wasn't immediate. At first only the gravity changed slightly, a sluggishness was felt as time itself seemed to slow and then stretch out. Suddenly, the upper layers of the planet's atmosphere became prey to the predator.

The workers, busy at their machines, noticed from all of these events a gigantic lightning strike followed by the stretch of their last second of life. It hit them so suddenly, that had they possessed the knowledge to realize what was happening, they had long dissolved into atoms, scattered in space, drifting bodiless towards the event horizon before they could draw the proper conclusion.

The work was dangerous, but at least it was well paid. They believed that this time, this job, they would receive their just pay. They were wrong.

Exploitation Of Planets

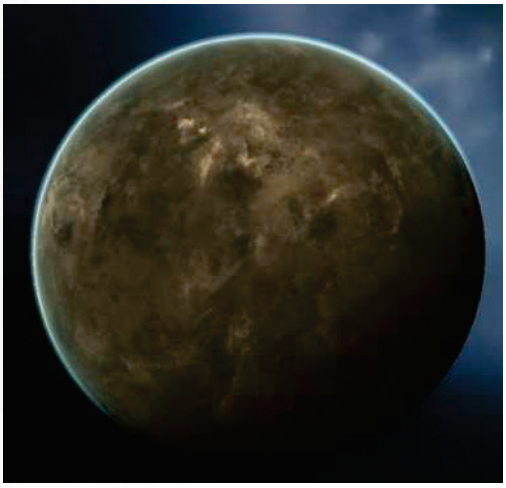
For the creation of a successful mining colony, we must have a clear understanding of the entire process. You can make ever more valuable products by processing lesser tier products into higher tier products like this:

- **Tier 0 (P0)** : Raw Materials (requires Extractor structure)
- **Tier 1 (P1)** : Processed Materials (requires Basic Industrial Facility structure)
- **Tier 2 (P2)** : Refined Commodities (requires Advanced Industrial Facility structure)
- **Tier 3 (P3)** : Specialized Commodities (requires Advanced Industrial Facility structure)
- **Tier 4 (P4)** : Advanced Commodities (requires High Tech Production Plant structure, which can only be built on Barren or Temperate planets).

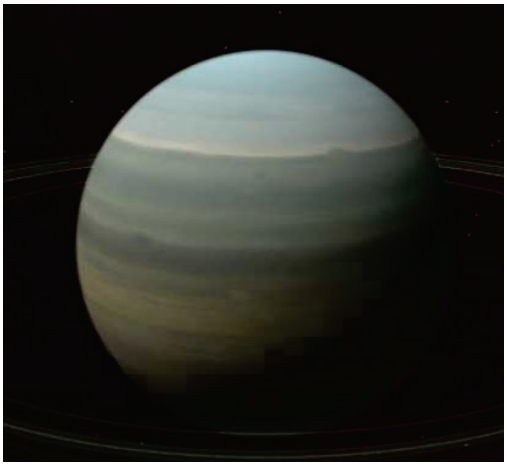
Planet (And Raw Material) Types

Planets come in all sorts of shapes and sizes, and accordingly provide different materials. Each planet provides five resources, but a few unique resources each only exist on a single planet type.

Barren

Planet	Resources
 Barren planets are archetypical 'dead terrestrials' – dry, rocky worlds with a minimal atmosphere and an unremarkable composition. They are commonly etched with flood channels, which are often broad enough to be visible from orbit; most such worlds have accumulated significant quantities of ice over their lifetimes, but cannot retain it on their surface. Generally, surface liquid evaporates rapidly, contributing to the thin atmosphere, but occasionally it will seep back into the ground and refreeze, ready for another breakout in future when the local temperature rises.	**Aquenous Liquids** **Base Metals** **Carbon Compounds** **Micro Organisms** **Noble Metals**

Gas

Planet	Resources
 Gas planets are characterized by a deep, opaque upper atmosphere, usually composed primarily of light elements such as hydrogen or helium. Simple chemicals can add a range of hues and shades in the visual spectrum, and the interaction between upwelling's and rapidly circulating pressure bands result in a huge variety of visible surface structures. A similar level of diversity can be found beneath the cloud-tops: the inner composition of a given gas planet might belong to any one of a dozen broad groups, with no two planets entirely alike in this regard.	**Aquenous Liquids** **Base Metals** **Ionic Solutions** **Noble Gas** **Reactive Gas**

Ice

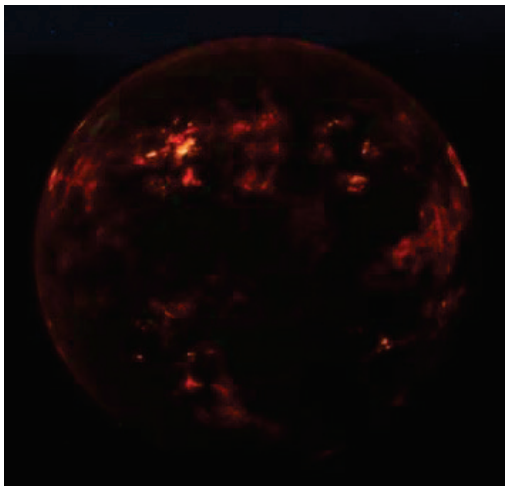
Planet	Resources
	Aquenous Liquids Heavy Metals Micro Organisms Planktic Colonies Noble Gas

The majority of icy planets went through a period of being barren terrestrials, before being surfaced with ice over the course of many millennia.

The exact process for this varies from case to case, but the end result is both common and visually uniform – a bright, reflective planet scored by countless fractures and crevasses.

A few icy planets are hypothesized to have been warmer, liquid bearing planets in the past that have subsequently frozen, as a result of either stellar cooling or failed terraforming projects.

Lava

Planet	Resources
	Base Metals Felsic Magma Heavy Metals Non-CS Crystals Suspended Plasma

So-called 'lava planets' (properly 'magmatic planets') fall into one of three groups:

Solar magmatics, which orbit sufficiently close to their star that the surface never cools enough to solidify;

Gravitational magmatics, which experience gravitational shifts sufficiently strong to regularly and significantly fracture cooling crusts;

Magmatoids, which are, for largely-unexplained reasons, simply incapable of cooling and forming a persistent crust.

All three types generally exhibit the same external phenomena – huge red orange lava fields being a defining feature – but the latter two types are sometimes capable of briefly solidifying for a period measured in years or perhaps decades.

Oceanic

Planet	Resources
	Aquenous Liquids Carbon Compounds Complex Organisms Micro Organisms Planktic Colonies

Oceanic worlds are a class of terrestrial world covered entirely by liquids, usually in the form of mundane water.

While the liquid surface is exceptionally smooth, the ocean floor on most worlds of this type exhibits significant topographic variety.

It is this subsurface irregularity which causes the formation of complex weather systems, which would otherwise revert to more uniform patterns.

Plasma

Planet

The aptly-named 'plasma planets' have captured the imagination of countless artists and inspired innumerable works, yet the physics behind them are surprisingly mundane by cosmological standards.

A rocky terrestrial with the right kind of atmosphere and magnetic field will, when bombarded with solar radiation, generate sprawling plasma storms as specific atmospheric elements are stripped of their electrons.

Over time these storms will generally scorch the surface rock black, adding to the visual impact.

Resources

- Base Metals
- Heavy Metals
- Noble Metals
- Non-CS Crystals
- Suspended Plasma

Storm

Planet

Storm worlds are usually considered terrestrial planets, although to a casual eye they may appear more similar to gas planets, given their opaque, high-pressure atmospheres.

Geomorphically, however, the distinctions are clear: compared to a gas world, the atmosphere of a storm world is usually considerably shallower, and generally composed primarily of more complex chemicals, while the majority of the planet's mass is a rocky terrestrial ball.

Their name is derived from the continent-scale electrical storms that invariably flash through their upper atmospheres.

Resources

- Aqueous Liquids
- Base Metals
- Ionic Solutions
- Noble Gas
- Suspended Plasma

Temperate

Planet

Life-bearing worlds are often referred to as 'temperate', as their mild temperatures are one of their defining features.

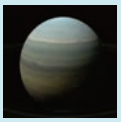
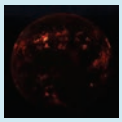
Planets with existing, stable ecosystems are prime targets for colonization efforts as they are generally easier to make fully habitable; as a result, the majority of highly populated worlds are of this type.

Indeed, it is not altogether uncommon for detailed surveys to reveal signs of previous settlements from various stages of New Eden's history.

Resources

- Aqueous Liquids
- Autotrophs
- Carbon Compounds
- Complex Organisms
- Micro Organisms

Planets Summarized

Resources	Planet							
	Barren	 Gas	Ice	 Lava	Oceanic	Plasma	Storm	Temperate
Aquenous Liquids	✓	✓	✓	–	✓	–	✓	✓
Autotrophs	–	–	–	–	–	–	–	✓
Base Metals	✓	✓	–	✓	–	✓	✓	–
Carbon Compounds	✓	–	–	–	✓	–	–	✓
Complex Organisms	–	–	–	–	✓	–	–	✓
Felsic Magma	–	–	–	✓	–	–	–	–
Heavy Metals	–	–	✓	✓	–	✓	–	–
Ionic Solutions	–	✓	–	–	–	–	✓	–
Micro Organisms	✓	–	✓	–	✓	–	–	✓
Noble Gas	–	✓	✓	–	–	–	✓	–
Noble Metals	✓	–	–	–	–	✓	–	–
Non-CS Crystals	–	–	–	✓	–	✓	–	–
Planktic Colonies	–	–	✓	–	✓	–	–	–
Reactive Gas	–	✓	–	–	–	–	–	–
Suspended Plasma	–	–	–	✓	–	✓	✓	–
	Barren	Gas	Ice	Lava	Oceanic	Plasma	Storm	Temperate

The Distribution Of The Planets

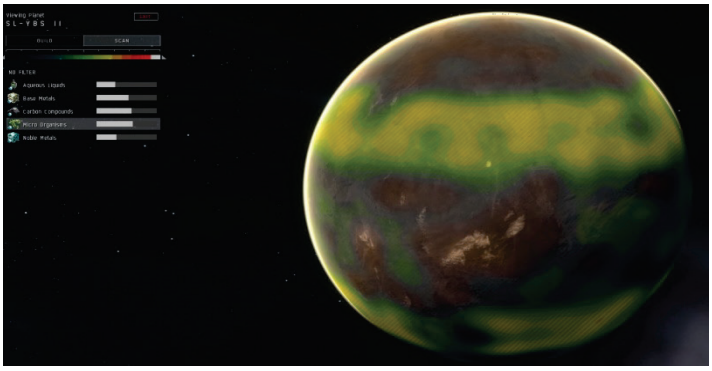
The location of the search is very important (0.0, low-sec, high-sec or Wormhole space), because it drastically affects the results of your findings. The following tables show how many planets of each type can be found in each region (for the exact details you can check: **http://evemaps.dotlan.net/** .)

Extraction Processes

When you have decided what you are going to produce, you've chosen the right type of planet, and you've even located it, then it is time to get started.

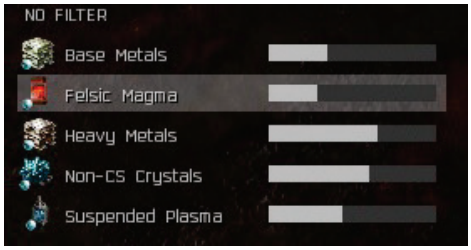
Step One: Planet Scan

Scan the chosen planet for the possible resources. To do this, right click on the planet or click anywhere on space, choose the planet, and then choose 'View in Planetary Mode'.

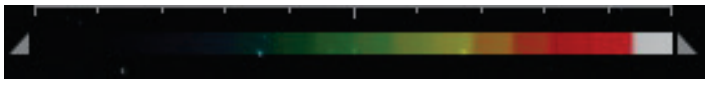


Next choose 'Scan'. The scan view lists the available resources on the planet and shows how rich those deposits are.

The longer the line near the name of the given raw material, the better the resource yield will be.



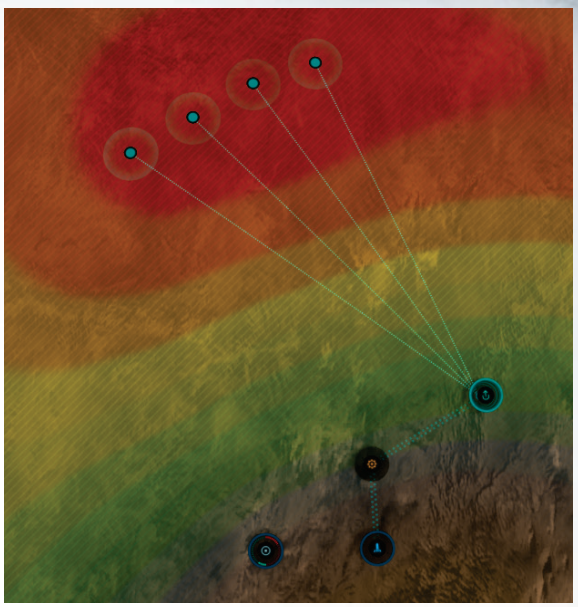
Choose the resource you want to see its concentration and its locations on the planet. You can filter the resource locations by moving the slider towards the right or left side on the rainbow scale.



The scale always shows the same colours ranging from blue, meaning very little resources of the chosen type can be seen, to white, meaning a lot of the resources of the chosen type can be seen.

To find an ideal spot to set up your extractors, click on 'Scan'. Click on a resource in the list. Move the slider on the rainbow scale towards the left until spots of red appear. Keep sliding left until some white begins to appear in the red spots.

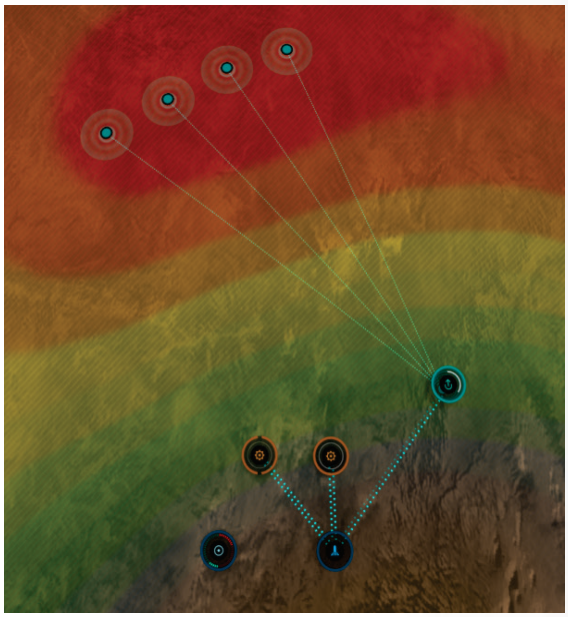
Once you see that, you know that those are the hot spots where your resource extraction will be most productive.



The best method is to locate the highest concentration of your target resource on the planet and ensure that there are no rivals to split the limited resources with. Ideally, look for two spots of high concentration nearby each other and place your processors and Command Center between these spots. Do not forget, if you want to process the extracted materials, you can use the routes as a queue as well. Such as:

Extractor—>Processor—>Launchpad.

Although this method is useful, it has a disadvantage: you have to synchronize the yield of the extractors and the capacity of the processing plants to each other very well, otherwise the unprocessed materials will be lost. So just extract the proper amount, which is necessary for the processing plants, and no more. The advantage is: if you have made the proper calculations about the capacities and the yield, this method is the best saver deal.



There's another solution: the processing has to be centred, so every processed materials we made has to have an own central point. The queue method is, using the extracted materials in a long route.

The base materials getting the queue at the start point, and we can get the specialized material at the end point. In this case, the centre is the Launchpad. An example:

Extractor(s)—> Launchpad—> Basic Processor—>Launchpad—> Advanced Processor—> Launchpad

Use the launchpad as an end point of every step: if you extract or process more amount than the destination plant's processing capacity, the materials won't be lost.

Necessary Skills

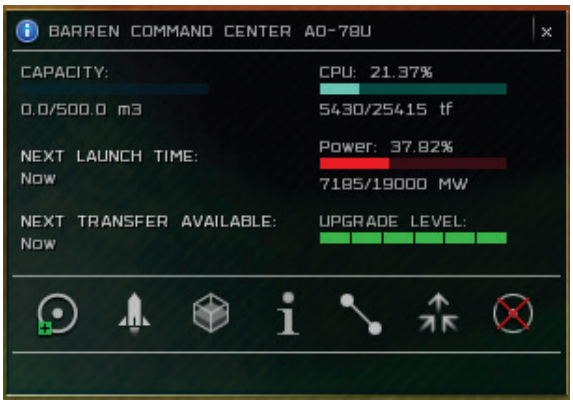
You can begin harvesting planetary resources without any specialized skills, but the possibilities will be highly limited. For example, you won't be able to use efficient equipment.

- **Interplanetary Consolidation:** For each rank in this skill, you may install a Command Center on one additional planet. You may have only one Command Center per planet. Cannot be trained on Trial Accounts.
- **Command Center Upgrades:** Each rank in this skill improves the quality of command facility available to you, in turn allowing for a greater number of extracting and processing facilities on that planet. Cannot be trained on Trial Accounts.

- **Planetology:** This skill increases the resolution of resource data when scanning a planet to allow for more accurate surveying. The increased resolution provides more colours on the rainbow scale, giving you the ability to better interpret data from scans of planets for resource locations.
- **Advanced Planetology:** This skill further increases the resolution of resource data when scanning a planet to allow for very precise surveying.
- **Remote Sensing:** The ability to gather and analyse remote sensing data from satellites in orbit around a planet and to produce properly calibrated surveys. Each rank in this skill allows you increased distance from where you can scan from:
    - **Level I:** allows scans within one light year
    - **Level II:** allows scans within three light years
    - **Level III:** allows scans within five light years
    - **Level IV:** allows scans within seven light years
    - **Level V:** allows scans within nine light years

Step Two: The Command Center

The most important thing in the planetary interactions is the Command Center. You can do nothing on a planet without this (just watch the clouds, volcano, oceans, etc. They're nice, isn't?). Every planet (except the Shattered) has an own type of the Command Center. This means, the Barren Command Center (CC) can be installed only on Barren planets. Although this CC has a storage and launch capacity, you don't need to link it to somewhere.



It can be a standalone building even at the polar cap. Okay, let's assume, the CC is established on the planet, and you have scanned the surface for materials. The next step: planning the colony, because every action can be expensive. Once a building is placed, and you have pushed the 'Submit' button, you can't replace it! By the way, every action (routing, linking, building) has to be confirmed by the 'Submit' button. Every CC has six levels. The difference among them is the amount of the CPU, PG, capacity and necessary skills.

CC Prefix	CPU	PG	Necessary Skill	Upgrade Price	
				From Basic	From Previous Level
Basic	1 675 tf	6 000 MW	–	–	–
Limited	7 057 tf	9 000 MW	Command Center Upgrades I	580 000 ISK	580 000 ISK
Standard	12 136 tf	12 000 MW	Command Center Upgrades II	1 510 000 ISK	930 000 ISK
Improved	17 215 tf	15 000 MW	Command Center Upgrades III	2 710 000 ISK	1 200 000 ISK
Advanced	21 315 tf	17 000 MW	Command Center Upgrades IV	4 210 000 ISK	1 500 000 ISK
Elite	25 415 tf	19 000 MW	Command Center Upgrades V	6 310 000 ISK	2 100 000 ISK

Infrastructures

After successfully placing the CC, you can build the following structures on the planet:

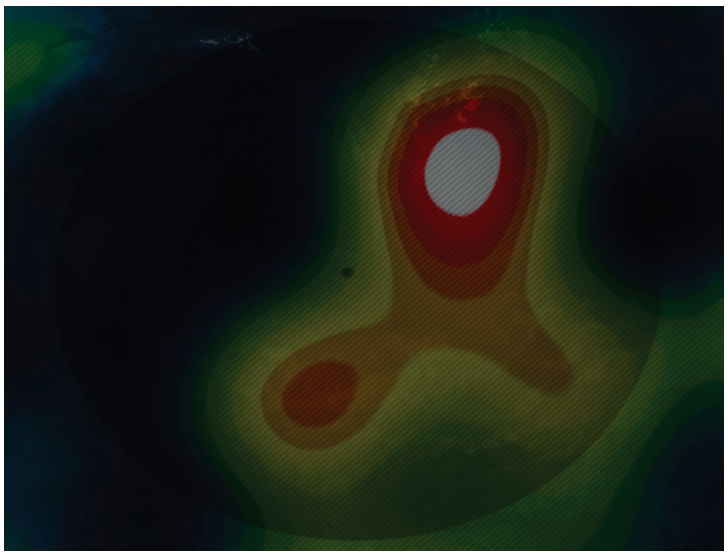
Name	Description
Extractor Control Unit	This building is responsible for the extracting of raw materials. As an ECU, only one type of raw material can be extracted.
Extractor(s)	Not a standalone building, you can switch them on in the ECU. Every Extractor consumes some CPU and PG.
Processors	The facilities responsible for converting and processing the extracted resources into refined products.
Basic Industry Facility	Creates Processed Materials from Raw Materials. Cycle time is 30 minutes.
Advanced Industry Facility	Creates Refined Commodities from Processed Materials. Further refines Refined Commodities into Specialized Commodities. Cycle time is one hour.
High Tech Production Plant	Available only on Barren and Temperate Planets. Cycle time is one hour and creates Advanced Commodities from Specialized Commodities.
Storage Facilities	Stores harvested and refined materials for further use or delivery.
Launchpad	Connects the colony to the Customs Office orbiting in space. If no Customs Office is available, you can launch your commodities into space directly. This is not recommended, as the launched container can be placed anywhere around the planet. Without a Launch Pad, you can neither export nor import the extracted commodities to the Customs Office.
Planetary Links	At first, these do not seem too important, but they are an indispensable part of the process. Without links, the materials are unable to be routed between facilities. A link's length determines how much CPU and PG it requires. With upgrades, the volume and speed of the transfer can be improved (requiring more CPU and PG)
Customs Office	Often referred to as the Space IRS, or an ISK-sink. This is not a structure an individual must build. Instead it is part of a planet's infrastructure; a publicly shared miner station orbiting in space. Have 35 000 m^3 capacity.

The demand in resources of different structures is shown in the table below:

Unit Name	PG	CPU	Cycle Time	Container Capacity	Price
Extractor Control Unit	2600 MW	400 tf	1 hr. – 14 days	–	45 000 isk
Extractor	550 MW	110 tf	1 hr. – 14 days	–	–
Storage Facility	700 MW	500 tf	–	12 000 m^3	250 000 isk
Basic Industry Facility	800 MW	200 tf	1 800 sec	120 m^3	75 000 isk
Advanced Industry Facility	700 MW	500 tf	3 600 sec	Variable	250 000 isk
High Tech Production Plant	400 MW	1 100 tf	3 600 sec	Variable	425 000 isk
Launchpad	700 MW	3 600 tf	–	10 000 m^3	900 000 isk
Link	0.26 MW/km	0.36 tf/km	–	–	Variable

Step Three: Extractor Control Unit- ECU

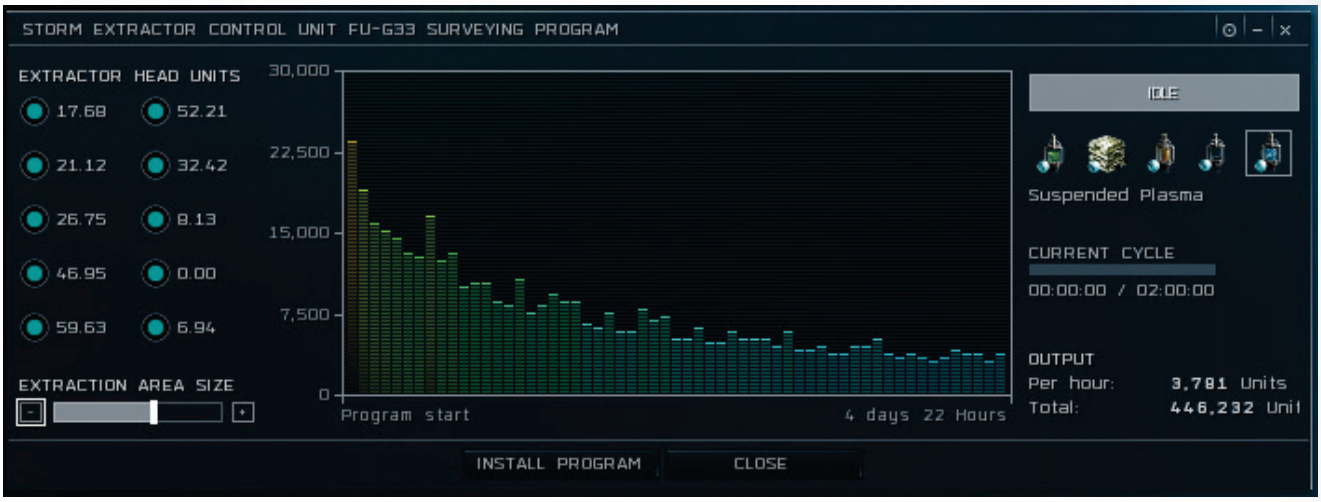
When extracting the materials of the planet, you'll need one or more extractor control units and extractors, as well as links along which the extracted materials can move towards the destination plant. The key to a successful colony is choosing the base area on the surface well.



When you place the ECU, the grey circle shows the area, where the extractors can be placed. To begin with, getting the raw materials is allowed within this circle only.

Once the ECU has been established, you can choose what you want to extract from the planet (the scan will change to this material). Furthermore, you can switch on the Extractor Head Units (the extractors itself) from 1 to 10. Please note: if you don't want to use the CC to store the materials, you won't need to link it with anything. I prefer the Storage Facilities due to their pretty storing capacity. Once the extractors are in place, the only things you need to do is to choose the wanted material and set the size of the extracting area. This will determine the cycle time and the amount of the extracted materials.

The expected yield shows in a diagram. You can see the amount, depending on the cycle time. The cycle time (the area) can be set from 1 hour up to 14 days. You can see the cycle times, the end of all the cycle times, the total amount of the yield in every cycle time and at the end of it. If you place the ECUs too close to each other, the efficiency of the extracting will be decreased. In this case, try to work with smaller areas or replace the extractors to somewhere else.

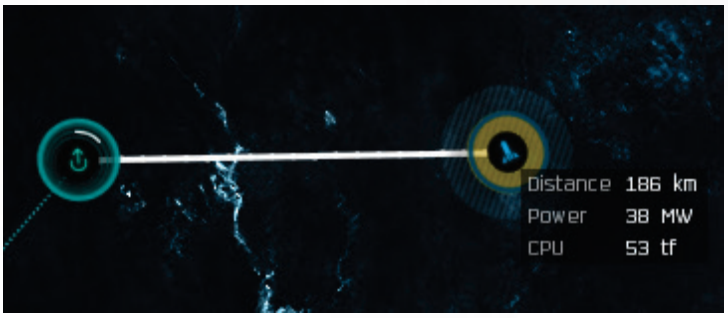


If you have chosen the best extracting setting, do not forget to confirm with the 'Submit' button. But we are not done yet: if we reach the end of the storage capacity of the ECU, every single material above this limit will be lost. So no profit, and the whole process will be stuck.

It is very important to know, that you can't place links and routes between the extractor-extractor, storage-storage, factory-factory. The only way is the Expedited Transfer, and you have to do this manually. If you want to avoid this, use the launchpad or the storage facilities for the in- and output.

Extraction time	Cycle Time
15 min. – 1 day 45 min.	15 min.
1 day 1 hr. – 2 day 1 hr. 30 min.	30 min.
2 days 2 hrs. – 4 days 3 hrs.	1 hr.
4 days 4 hrs. – 8 days 6 hrs.	2 hrs.
8 days 8 hrs. – 14 days	4 hrs.

Step Four: Schematics, Links And Routes



From an extractor, you should link and route your commodities into a storage facility, a launch pad, or the closest processor.

Linking and routing should be done the same way in every case:

- Click on the starting point (in this case the extractor), then choose the Links icon. Then click on the Create Link button. Bring the end of the white line to the desired destination.
- Alternatively, you can right-click on your starting point, choose Create Link, drag the white line to your destination, and left click on the destination to create the link.

In both cases the necessary CPU and PG demand of the given link will be indicated. Don't forget to click submit when done.

As was mentioned before, it is worth establishing extraction and production facilities on a given area. Several extractors can be linked to either a single storage facility or several storage facilities to ensure continuous resource extraction.

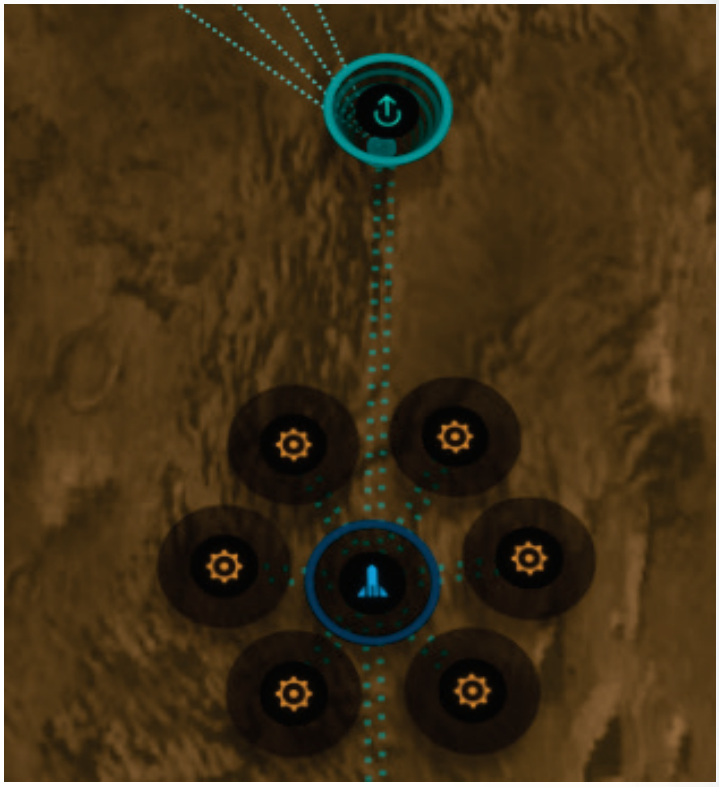
Storage Facilities can be used as operating headquarters as well. In this case, every extractor and production facility is linked to it. The resources are routed from the extractors and depart from here to the production facilities.

If the structures are linked, the necessary operation must be chosen (schematics) on the receiving station (if it is a factory). The goods cannot be transported from the mine/warehouse until linked somewhere. To do this, click on the Schematics icon and choose a schematic from the dropdown menu. Clicking on a schematic will expand it to display what is needed for production input and what the production output will be. It also lists the quantities needed.

Once production has been set up, the last thing to do is to determine final storage and shipping off the planet. Click on the production facility, then click Products, choose the material you want to route to storage, click on the storage facility, and finally click the Create Route button.

For example if you have: Extractors -> Storage Facility -> Production Facility -> Storage Facility -> Production Facility -> Launch Pad system then you can choose to route resources from the mine directly to the launch pad. In this example, the utilization of the link path increases, but the resources only pass through on the linking facilities. This is a great advantage, since we can save on the length of the links. Everything along this route can utilize the same links to move output along.

It was mentioned earlier that the links can be optimized.



Optimizing links increases their capacity, but at the cost of additional resources. Think wisely as to whether this is really needed, because if the utilization is only 40%, the resources of the colony are expended unnecessarily. ☺

When establishing different extracting chains, it is highly advisable to install a storage facility as well. These structures have the necessary capacity for storing materials temporarily, thus ensuring there is no wastage. Speaking of waste, try to use as few links as possible and they should also be short in length.

Link Level	Name	Capacity	Necessary Resources									
			48 km		100 km		198 km		518 km		1020 km	
			CPU	PG	CPU	PG	CPU	PG	CPU	PG	CPU	PG
0	None	1,250 m^3/h	25	18	36	26	55	40	119	88	220	164
I	Local	2,500 m^3/h	41	27	69	45	120	79	289	189	554	362
II	Basic	5,000 m^3/h	61	38	109	67	200	122	498	301	966	583
III	Standard	10,000 m^3/h	84	49	156	90	292	167	738	421	1437	819
IV	Improved	20,000 m^3/h	109	61	207	115	393	216	1003	547	1959	1067
V	Fast	40,000 m^3/h	136	74	263	140	503	266	1290	679	2524	1325
VI	Expendited	80,000 m^3/h	165	86	323	167	620	318	1597	814	3128	1592
VII	Express	160,000 m^3/h	195	100	386	194	744	371	1922	954	3768	1867
VIII	Advanced	320,000 m^3/h	228	113	425	222	875	426	2264	1097	4440	2149
IX	State-of-the-Art	640,000 m^3/h	261	127	522	250	1012	482	2621	1244	5144	2437
X	Experimental	1,280,000 m^3/h	296	141	594	279	1154	539	2993	1393	5876	2731

Step Five: Processors

Once you have started extracting, you must choose whether to export the extracted raw resources off planet, or to process these raw resources into another commodity. If you choose the second option, you will need either basic industry facilities or advanced industry facilities (or both).

Basic Industry Facility – Processed Materials

In basic industry facilities, processed materials can be created from raw materials.

Raw Materials				Processed Materials		
3000 x		Micro Organisms	»	20 x		Bacteria
3000 x		Carbon Compounds	»	20 x		Biofuels
3000 x		Planktic Colonies	»	20 x		Biomass
3000 x		Non-CS Crystals	»	20 x		Chiral Structures
3000 x		Ionic Solutions	»	20 x		Electrolytes
3000 x		Autotrophs	»	20 x		Industrial Fibers
3000 x		Reactive Gas	»	20 x		Oxidizing Compound
3000 x		Noble Gas	»	20 x		Oxygen
3000 x		Suspended Plasma	»	20 x		Plasmoids
3000 x		Noble Metals	»	20 x		Precious Metals
3000 x		Complex Organisms	»	20 x		Proteins
3000 x		Base Metals	»	20 x		Reactive Metals
3000 x		Felsic Magma	»	20 x		Silicon
3000 x		Heavy Metas	»	20 x		Toxic Metals
3000 x		Aqueous Liquids	»	20 x		Water

Advanced Industry Facility – Refined Commodities

Refined commodities can be created from processed materials in advanced industry facilities.

Processed Materials						Refined Commodities	
40 x	Biofuels	+	40 x	Precious Metals	5 x		Biocells
40 x	Reactive Metals	+	40 x	Toxic Metals	5 x		Construction Blocks
40 x	Toxic Metals	+	40 x	Chiral Structures	5 x		Consumer Electornics
40 x	Electrolytes	+	40 x	Water	5 x		Coolant
40 x	Precious Metals	+	40 x	Toxic Metals	5 x		Enriched Uranium
40 x	Bacteria	+	40 x	Proteins	5 x		Fertilizer
40 x	Proteins	+	40 x	Biomass	5 x		Genetically Enhanced Livestock
40 x	Proteins	+	40 x	Biofuels	5 x		Livestock
40 x	Reactive Metals	+	40 x	Precious Metals	5 x		Mechanical Parts
40 x	Industrial Fibers	+	40 x	Silicon	5 x		Microfiber Shielding
40 x	Chiral Structures	+	40 x	Silicon	5 x		Miniature Electronics
40 x	Bacteria	+	40 x	Reactive Metals	5 x		Nanites
40 x	Oxidizing Compound	+	40 x	Oxygen	5 x		Oxydes
40 x	Oxidizing Compound	+	40 x	Industrial Fibers	5 x		Polyaramids
40 x	Biofuels	+	40 x	Industrial Fibers	5 x		Polytextiles
40 x	Plasmoids	+	40 x	Electrolytes	5 x		Rocket Fuel
40 x	Oxidizing Compound	+	40 x	Silicon	5 x		Silicate Glass
40 x	Plasmoids	+	40 x	Water	5 x		Superconductors
40 x	Oxygen	+	40 x	Biomass	5 x		Supertensile Plastics
40 x	Electrolytes	+	40 x	Oxygen	5 x		Synthetic Oil
40 x	Bacteria	+	40 x	Water	5 x		Test Cultures
40 x	Plasmoids	+	40 x	Chiral Structures	5 x		Transmitter
40 x	Bacteria	+	40 x	Biomass	5 x		Viral Agent
40 x	Reactive Metals	+	40 x	Water	5 x		Water-Cooled CPU

Advanced Industry Facility – Specialized Commodities

Specialized commodities can be created from refined commodities in advanced industry facilities.

Refined Commodities										Specialized Commodities
10 x	Nanites	+	10 x	Livestock	+	10 x	Construction Blocks	»	3 x	Biotech Research Reports
10 x	Silicate Glass	+	10 x	Rocket Fuel				»	3 x	Camera Drones
10 x	Oxydes	+	10 x	Coolant				»	3 x	Condensates
10 x	Test Cultures	+	10 x	Synthetic Oil	+	10 x	Fertilizer	»	3 x	Cryoprotectant Solution
10 x	Supertensile Plastics	+	10 x	Microfiber Shielding				»	3 x	Data Chips
10 x	Oxides	+	10 x	Biocells	+	10 x	Superconductors	»	3 x	Gel-Matrix Biopaste
10 x	Water-Cooled CPU	+	10 x	Transmitter				»	3 x	Guidance Systems
10 x	Polytextiles	+	10 x	Viral Agent	+	10 x	Transmitter	»	3 x	Hazmat Detection Systems
10 x	Polyaramids	+	10 x	Genetically Enchanced Livestock				»	3 x	Hermetic Membranes
10 x	Polyaramids	+	10 x	Transmitter				»	3 x	High-Tech Transmitters
10 x	Fertilizer	+	10 x	Polytextiles				»	3 x	Industrial Explosives
10 x	Biocells	+	10 x	Silicate Glass				»	3 x	Neocoms
10 x	Microfiber Shielding	+	10 x	Enriched Uranium				»	3 x	Nuclear Reactors
10 x	Supertensile Plastics	+	10 x	Mechanical Parts	+	10 x	Minature Electronics	»	3 x	Planetary Vehicles
10 x	Mechanical Parts	+	10 x	Consumer Electronics				»	3 x	Robotics
10 x	Construction Blocks	+	10 x	Miniature Electronics				»	3 x	Smartfab Units
10 x	Water-Cooled CPU	+	10 x	Coolant	+	10 x	Consumer Electronics	»	3 x	Supercomputers
10 x	Supertensile Plastics	+	10 x	Test Cultures				»	3 x	Synthetic Synapses
10 x	Biocells	+	10 x	Nanites				»	3 x	Transcranial Microcontrollers
10 x	Synthetic Oil	+	10 x	Superconductors				»	3 x	Ukomi Super Conductors
10 x	Livestock	+	10 x	Viral Agent				»	3 x	Vaccines

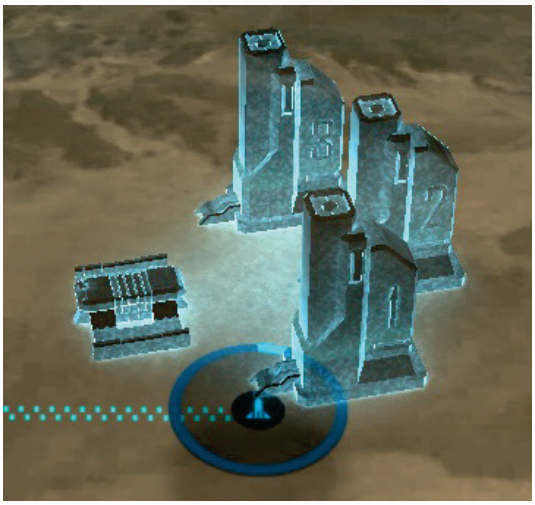
High Tech Production Plant – Advanced Commodities

High-tech production plants can create advanced commodities from specialized commodities and, when necessary, processed materials. These buildings can be built on Barren and Temperate type planets only.

Specialized Commodities								Advanced Commodities
6 x	Neocoms	+ 6 x	Data Chips	+ 6 x	High-Tech Transmitters	» 1 x	Broadcast Node
6 x	Gel-Matrix Biopaste	+ 6 x	Hazmat Detection Systems	+ 6 x	Planetary Vehicles	» 1 x	Integrity Response Drones
6 x	Industrial Explosives	+ 6 x	Ukomi Super Conductors	+ 40 x	Reactive Metals	» 1 x	Nano-Factory
6 x	Condensates	+ 6 x	Robotics	+ 40 x	Bacteria	» 1 x	Organic Mortar Applicators
6 x	Synthetic Synapses	+ 6 x	Guidance Systems	+ 6 x	Transcranial Microcontrollers	» 1 x	Recursive Computing Module
6 x	Camera Drones	+ 6 x	Nuclear Reactors	+ 6 x	Hermetic Membranes	» 1 x	Self-Harmonizing Power Core
40 x	Water	+ 6 x	Smartfab Units	+ 6 x	Vaccines	» 1 x	Sterile Conduits
6 x	Supercomputers	+ 6 x	Biotech Research Reports	+ 6 x	Cryoprotectant Solution	» 1 x	Wetware Mainframe

Step Six: Launchpad

Putting a spaceport on the planet makes exporting items from the planet easier. It is also the only way to import raw materials down to the planet's surface. Its best attribute is the large storage capacity (10 000 m^3), while the least attractive attribute is the high CPU need (3600 tf). The customs office is only available when somebody builds a launch pad on the planet.



You cannot install a launch pad with basic Command Centers, because its CPU need is higher than the CPU the CC can generate.

Step Seven: Customs Office, Import / Export

Basically, it is in every system where at least one launchpad has been set. The owner of these structures are the Interbus. Interbus stations have a tax rate of 17%. This is true until the CO is shot down. And here comes the tax. Player Owned Customs Offices in Hi-Sec have an NPC tax rate of 10% for export, 5% for import. There is a "must have" skill, called as: **Customs Code Expertise**: reduces the NPC tax rate by 10% per level.

The Customs Office

In order to have an own Customs Office the Interbus one has to be removed (unfortunately it is cannot be stolen, aggressione is the only way). Once that is done, we must build our own space dock.

Nothing is necessary but to buy a Customs Office Gantry Blueprint, build it, anchor it, and upgrade it to Customs Office.

There are two ways to get the blueprint:

- for 3000 LP and 10,000,000.00 ISK from faction warfare militia
  - 24th Imperial Crusade (Amarr)
  - State Protectorate (Caldari)
  - Federal Defense Union (Gallente)
  - Tribal Liberation Force (Minmatar)
- investing 6000 LP and 20,000,000.00 ISK, from the CONCORD

The Gantry itself has to be manufactured in station and it can be anchored as corporation. Running it "Station Manager" status is necessary to run it. Only those who have "Config Equipment" can upgrade the Gantry into a Customs Office. When it is ready, the customs office can be given to another corporation with the "Transfer Ownership" option.

The Import / Export Tax

"There is no rose without a thorn, there is no manufacturing without tax...". Every single step we make may affect our wallet if we are too reckless. Since the Import/Export and even the launching may have extremely high price in cases where the infrastructure is not properly organized.

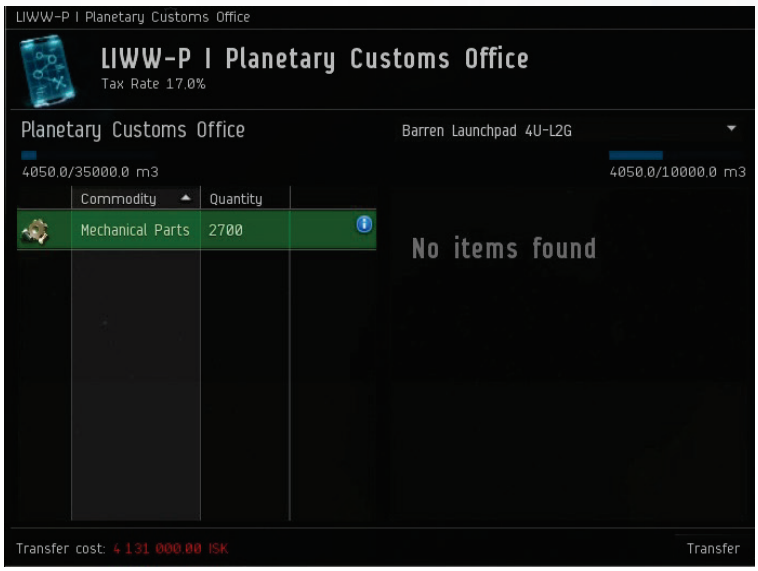
It would much easier if we could manufacture everything in one place and launch the final product into space. But, there is no planet on which all materials can be found. The source of power is limited. Just think about the Command Center and the limited CPU and PG capacity.

So strive for less transport of materials among planets. Basically the CONCORD and Interbus work with fixed prices.

We can be sure if our corporation is not the owner of these structures, we may pay significant tax. In the worst case scenario, we can't use them at all. Since the owner sets the access based on standing, if we have no standing, we will have no access. However, even if we have access, we may pay tax.

Importing

Supposing we run processes on the planet, and not all materials are available for it. We may need the Import function. In case we have launchpad, choose a planet, and in the drop down menu choose the Customs Office. Once we arrived we have access to the storage, for items (maximum 35000 m^3) we want to send to the planet's surface. In order to do this right click and choose "Open Hangar". Then drag and drop the items into the hangar.



When it is done, only one thing remains, the transfer. Using Drag and Drop, and completing the list of materials we need on the planet just click "Transfer" to complete.

The items on the rights side of the window will be sent to the launchpad.

Exporting

When everything is done, and we want to carry the materials to somewhere else, we must export them first. The required materials have to be sent to the Launchpad. We can use it in two ways: the end of processes finish at the Launchpad, or we can transport them from any storage.

The method in the second case is the same as the Import, but we move these items among the storages on the planet and not on the surface and CO.

Choose the start point of transfer, the material, and click on the "Expeditive Transfer", and choose the destination storage. At the end of the process click "Execute Transfer".

The method of Export is the same as the Import, the difference is the materials are sent not to the surface but into the space. Just choose the items, Drag and Drop them, and click "Transfer".

At the end of process all the materials can be found in the CO's hangar.

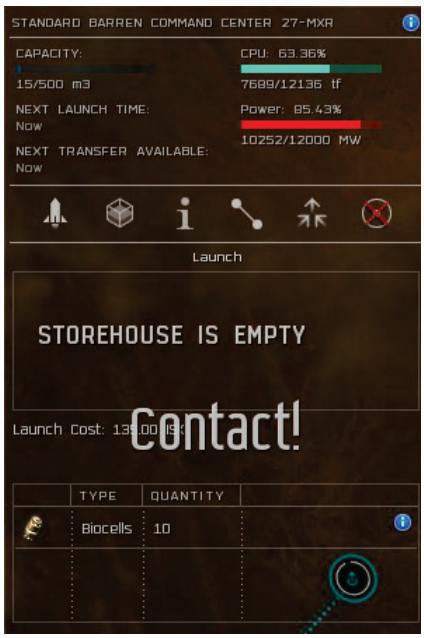
Rocket Launch

When the customs office you need to access is 'bubbled', or a group of pirates is camping it, there is an alternative to getting your commodities off-planet: the launch pad on the Command Center will fire it directly into space. Materials can be exported off-world, only this time our starting point will be the CC, which unfortunately can only handle a limited volume. The launched resources arrive at a random spot somewhere around the planet.

Route the resources you want to export to the CC. You can also use an 'Expedited Transfer' for a one-time move from one spot to the Command Center. Note that the Expedited Transfer option has a cooldown and can only be used every few minutes.

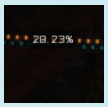
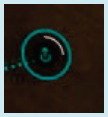
Once your resources are in the CC's storehouse, click on the resource and add it to the payload for launch. When the payload contains whatever you want to export, click on 'Go For Launch'.

If everything works, you'll get a message in your journal on the Planetary Launches tab. This message will tell you where to find the launched container, and how long it will stay there in case you cannot get to it right away. You can bookmark that location or warp there immediately, and all you have to do is collect it. The process is the same as looting a container.



Signs And Abbreviations

The different colours of the icons have important meaning, since looking at them can quickly give you a visual status of whether or not everything is running properly.

Phenomena		Explanation
	The link line is shining yellow	You have forgotten to push the Submit button after building a link
	The line is colourless, doesn't shine	No active Route on the link
	Double lines but one of them is pale	Transportation is only set to go one way on the link
	Double lines, both are shining	Transportation is going both ways
	**Double lines, one of them is orange, value in % is above it**	Showing the Route, with the utilization of the Link in %
	The inner white circle is flashing (on production facilities)	Not enough incoming raw materials for production
	Part of the outer circle (at storage facilities and launch pads) is lighter	This reflects utilization of the storage capacity of the given structure
	Part of the outer circle is lighter (production facilities)	Indicates how much of the required resources are available to start the operation
	**The inner white circle is continuously increasing or decreasing (extractors)**	The mine is extracting, the circle increases or decreases, indicating the actual state of the cycle
	The line is orange, and value in % is on it	If the given % is white, the actual utilization is shown, if it is grey then the value is being calculated, probable utilization of the link is shown. These values can be seen separately or at the same time
	Red and blue lines around the Command Center	Your current colony Powergrid (red) and CPU (blue) usage is shown in accordance with the capacity of your Command Center
	There is no white line at the factory, only a yellow circle on its outline	You have likely forgotten to link it into the network, it has no connections

Competition?! WAR!

Sometimes less is more. A wise man once said, “You can’t always get what you want, but if you try sometimes, you get what you need.” Only one Command Center can be placed on a planet, and the maximum number of planets you can set yourself up on is six.

The problem is that others can do this too. NPC and unclaimed territories can get choked with Command Centers since everyone can put at least one down. If an alliance gets sovereignty in an area, then only its members can install CCs in that area.

Every planet has a finite amount of resources. Every good comes to an end, since these resources can be exhausted. The more it is extracted, the sooner it happens. This is a cause for alarm because regeneration will only take place after the resource has been entirely exhausted, which takes time.

There is a huge difference between high-sec and Nullsec, because in Nullsec more materials can be extracted in one cycle, the planets have more resources and there are likely to be less players setting up shop on each planet. Experience shows that the difference in the extractable materials in one cycle can be five to eight times higher than for a similar planet in high-sec.

When The War Is Good For Business…

If there is value in a thing, chances are someone wants to take that thing from you. It is very important to be alert even when war is not in effect. You could run into an enemy bubble or a gang waiting for you to make a pick-up at a customs office.

If you find yourself in an unpleasant situation, the risk can be minimized by the use of the ‘Rocket Launch’ option on your Command Center. With this method of exporting from planet surface to space, the cargo appears at a random point in space in orbit around the planet. All you have to do is to warp there in a cloaked blockade runner instead of going to the customs office.

Nevertheless, you can also turn it to your benefit, since you too can camp the given system, planet, or customs office, but I wouldn’t want to give too many bad ideas away as this isn’t the Free Super-Pirate Academy.

Market-warriors

The economic war not only rages in space, but is also in one’s wallet in terms of ISK. The inexperienced pilot does not fully comprehend that they are preyed upon by many others. It is imperative to pay attention to not merely selling the raw resources extracted, because you can refine a better, improved, and more valuable commodity which takes less cargo space to haul and is nearly free to produce. It is worth improving the resources to a higher level commodity at that same installation and then exporting it to space.

Why are the volume and quantity of commodities important? The answer is tax.

Taxes

Taxation is dependent on the customs station that the PI goods are being moved through. This was one of the three PI updates from Crucible. If you're in High-Sec, the tax rate is 10%. If you're elsewhere, and the Interbus Customs office hasn't been replaced, the tax rate is 17%. Otherwise, the rate is set by the owner of the Customs Office. The taxable value are the same for all items in the same tier:

	Raw Materials	Processed Materials	Refined Commodities	Special Commodities	Advanced Commodities
Import Tax	2,5 ISK	250 ISK	4 500 ISK	35 000 ISK	675 000 ISK
Export Tax	5 ISK	500 ISK	9 000 ISK	70 000 ISK	1 350 000 ISK
Size Of Materials	0,01 m^3	0,38 m^3	1,5 m^3	6 m^3	100 m^3

The tax price is based on the tax rate of the Customs Office for the taxable value of the materials. I.e. Refined Commodities having a taxable value of 9,000.00 ISK and a Customs Office tax rate of 10% you will pay 900.00 ISK per units. For a tax rate of 17% you will pay 1,530.00 ISK per units. Eliminating a import export stage may be required to remain profitable.

Final notes

The "Planetary Colonies": located under the "business" section of the Neocom. If you only ever run 23 hour cycles, you can get away with losing all the Silos and routing everything trough the Launchpad, as the volume of Raw Materials/hour being produced and needing transport is low. You can make a kind of spider-like main base with long links to the groups of Extractors. Not being able to give the occasional 5 hour run boost when you've forgotten to resurvey is a bit sucky tough.

An empty hotspot is not always best. You will always want to build extractors where you can obtain the most materials. One hotspot could sustain various players and still give more yield than another empty hotspot. There might not be hotspots empty (especially if you're restricting yourself to high-sec).

A Silo has half the storage capacity and uses the same amount of Powergrid as a Launchpad. A Silo does use less CPU than a Launchpad. So you might want to use only Launchpads as buffers for colonies with a lot of Extractors (who don't need a lot of CPU) and Silos and a single Launchpad for colonies with a lot of factories (which use a lot of CPU).

If you have a colony in an 0.0 system and your alliance loses sovereignty the colony will continue to work as normal. It will continue working if another alliance claims sovereignty in the system.

It is impossible for people to destroy other people's colonies (yet). The only way to trouble you would be to camp the Cargo Links of your planets.

MANUFACTURING

CHAPTER 6

EVE INDUSTRIAL BLACK BOOK

ISK VOL I

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Piece Of Technology

A tall, haggard man stood on the catwalk above the huge assembly bay. The size of the bay would have made it possible to assemble six freighters, side-by-side. The engineers, workers and machines worked beneath the dizzying depth in precise harmony.

He stared into the distance, looking for the moment in his memory when he decided to start this grandiose project. Suddenly, a voice pulled him back from the entangled whirl of his thoughts.

“Sir, the hull section is running out of the construction blocks!” The young engineer looked nervous.

“All right, we have all the required blueprints available, start the production of the necessary modules,” he instructed.

The engineer nodded. “Acknowledged sir, I’ll get them into production immediately!”

“One more thing. Use the ores from depot number two.” His voice was calm, flat.

“Yes sir!” The engineer left in hurry, the door which separated the rest of the station from the gigantic hall, opened and closed, perfectly noiselessly, as if it knew that the industrialist leading the operation could, or rather should not be disturbed. Below, in the depths of the manufacturing hangar, the air was glowing. Huge hull pieces were prepared, one after the other. Some components were part of the hull, some were components of the armor cover, while others belonged to the electronics and propulsion systems. Production was ongoing already.

Being obsessed with new technologies, Commander Siretsa exploited all the possibilities that made the fitting and equipment of his ships even more advanced. But this case was different. The components below were not the parts of his own ship, nor even his corporation, but of a full alliance that had placed its confidence in him, entrusted a part of its resources for the project. This was not a unique project, but grandiose. After all, only a few examples of this stupendous technology existed in the whole universe.

He was excited to see it finally taking shape. Months of negotiations, then the assembly of raw materials, and finally the construction of the facility itself had taken their toll. Now, he could tell everyone that his work, the work of the corporation, right down to the last man, would be rewarded handsomely when this ship launched. Nothing is impossible! The buzz from his nanotransponder interrupted his chain of thoughts.

“Commander, the last drive components are ready, we’ve started to transport them into the assembly plant.” It was the familiar sound of the engineer’s voice.

“Thank you. Continue the operation, and prepare my ship to supervise the transport of the components into the space dock.”

“Yes sir, your ship is already prepared; the expected end of the loading is 14:00 hours.”

“I see. Inform the pilots of the freighters: I do not tolerate any kind of delay! Make sure that they are ready for the transport.”

“Yes sir!”

On the way to the hangar, where his majestic Paladin battleship waited for the undocking permissions, a faint smile ran across the commander’s face. They were done with the ‘boring’ part of the job, but the heavy lifting was about to start.

To look at it in the simplest way, it was nothing but children’s building blocks on a gigantic scale. Several hundred billion ISK of building blocks, and when it was ready, it could influence the combat events of entire regions, merely with the fact that it existed.

Boarding his ship, Siretsa checked the holoscreen with satisfaction. The freighters were ready for undocking, waiting in an ordered fashion for their cargo to be taken to their destination. The convoy, a combination of dozens of transport and escort ships, slowly docked into a single Aeon-class supercarrier then jumped to a distant spot in space.

Emerging from the jump portal, a gigantic space dock become visible, surrounded by a shield. Capital class ships were being made here, so the base had very strong, nearly impenetrable shields, with banks of artillery guarding it. There was a protection fleet, too. Dozens of different ship classes: frigates, cruisers, battleships, all with strict orders to protect the facility at all costs.

It took many long hours for the fleet to complete the unloading into the assembly plant. Their job was difficult, since it was necessary to place the immense volume of ship components into the space in such a way that it could be successfully assembled into a working engineering miracle. At the end of the loading, the freighters returned to the Aeon supercarrier. As soon as it was loaded, it disappeared much as it had arrived.

Inside the massive facility, the assembly of the ship began. The commander supervised the work personally, as he could not allow anything to disturb or delay it. Weeks of long and nerve wracking work brought it to fruition.

The last tests were run, the calibration of the drives was tested, the loading platforms were seeded with materials, and the ship took shape. Slowly, methodically, the behemoth grew from girders to one of the most massive ships ever constructed.

Months later, the ship stood ready. One thing was still missing: the captain, the soul of the ship, the lead mind of all the machinery. The management of a ship like this required full immersion. There would be no breaks at a station, or switching ships. The ship claimed a full bondage. It experienced the tight sense of his word, even more, his mind.

His soul would not be set free anymore. His body would melt into the ship, and could be regained only as a result of destruction or abandonment of the vessel.

Two hundred and fifty kilometres from the assembly array, a ship emerged from its cloaking field, and in the next moment a glowing beacon appeared, transferring coordinates into deep space.

Siretsa's mind reared. "Something must have happened. We were a secret! No one knew we were here!" The thoughts flashed through the commander's mind. He had been waiting in the entry lounge, waiting for the new captain to travel to the facility to take command of his ship. Instead, Siretsa stared out into space at the glowing beacon. His heart sank.

"Control tower! What's the IFF of our 'guest'?"

The control tower responded with the familiar voice of Siretsa's chief engineer. "Sir, we can't seem to identify it yet. It does not answer our hails. I think we have to fear the worst, sir. We were betrayed!"

As if on cue, the characteristic funnel of a jump portal appeared and a huge Minmatar fleet entered normal space, beyond a doubt there to destroy or take away the ship waiting under the protection of the station.

They fired immediately, without warning. The shields of the station glowed, swallowing the energy of the attack. Commander Siretsa looked at the station's control system from the wall mounted panel.

He knew that he had to do something, and quickly, as the shield would not be able to stand against this firepower for a long time.

He made a decision. It shouldn't have been his decision, but he took it in a heartbeat. He took the hallway to the personnel elevator, which lead to the hangars. Outside the facility, a gun battery failed, then another, then another. The defending fleet was nearly gone, but the larger units were fighting frantically to save the facility.

Soon, the space dock itself would be under attack. "Everything's lost if I don't do something right now," the commander thought as he entered the pod. "I can't let it happen!

Not without a fight!" Full darkness took over his senses. He did not see, he did not feel. He lost contact with the external world.

The shields surrendered, the last charges circulated before they dwindled into eternal space. The station lost its reinforced protection, and the fleet waiting outside, like a horde of starving wolves, attacked the defenceless base.

A sudden, gravitational shockwave froze the moment with overwhelming strength. All eyes, sensors, and cameras rotated to see what had changed.

The Avatar had awoken!

The signal flashes ignited, the drives came online, the shields emitted a blue glow, embracing its golden body. In the central controller, the brain, Siretsa, swam in the life-giving biomass in a state of unconsciousness, physically broken but mentally in command of the ship. He concentrated with all his fibre on starting the ship's life support and protection systems and to reach the drive control.

He failed. He was not ready for that. He was not ready for any of it. He had not undergone all the requisite training. His nervous system could not handle the load. Instead of the drives, he activated the jump portal generator, filling the space with a huge gravimetric distortion. Just before falling into the portal, he could inflict a last and fatal blow onto his enemies.

He controlled his mind and concentrated. He thought of one thing, the Judgment Device. The emergent destructive energy would sweep away everything; ships, the station, people, machines.

Everything. The moment of truth! He fired, but instead of a flash, wreaking havoc across the entire grid, a single beam of light appeared. Like the Sword of Damocles, it lanced out and ripped the enemy's command ship, a massive supercarrier to shreds. Siretsa allowed himself to black out and the ship to fall into the portal, to disappear.

He had failed.

Manufacturing 101

In the beginning there were asteroids and endless space...

Who has not thought of what the ships, the stations, the modules, or anything else that we use day-to-day comes from? Who makes them? How? What with? Why? Is it worth it? The answer for the last question is definitely yes! We have learned about mining for ore, refining it to minerals and moving it around. It's time to make something useful from it!

You can have huge stock of minerals in your hangar, but it will not be able to fly. You can even have the biggest stock of all the minerals available, but it is worth nothing without someone who can actually make something from it.

The production of different modules and ships is one of the most profitable occupations in the EVE universe. Be warned, though, there are many dangers along the way. For every upside, there are risks.

Before you start, you will need to survey the needs of the market, because in EVE everything is built on the fundamental principle of supply and demand. It is important to produce something that you can sell. You have an opportunity to offer your merchandise in price competition with others, or you can take the end product where there is good demand for it, forcing out a little extra profit.

It is very hard to compete with something that lots of people have been doing for years already; there is a big chance that the 'veterans' have better connections, equipment, BPOs and stocks than you.

Regardless of who has come before, or who is here now, there is a market that needs modules and ships, and you can make it and sell it to them.

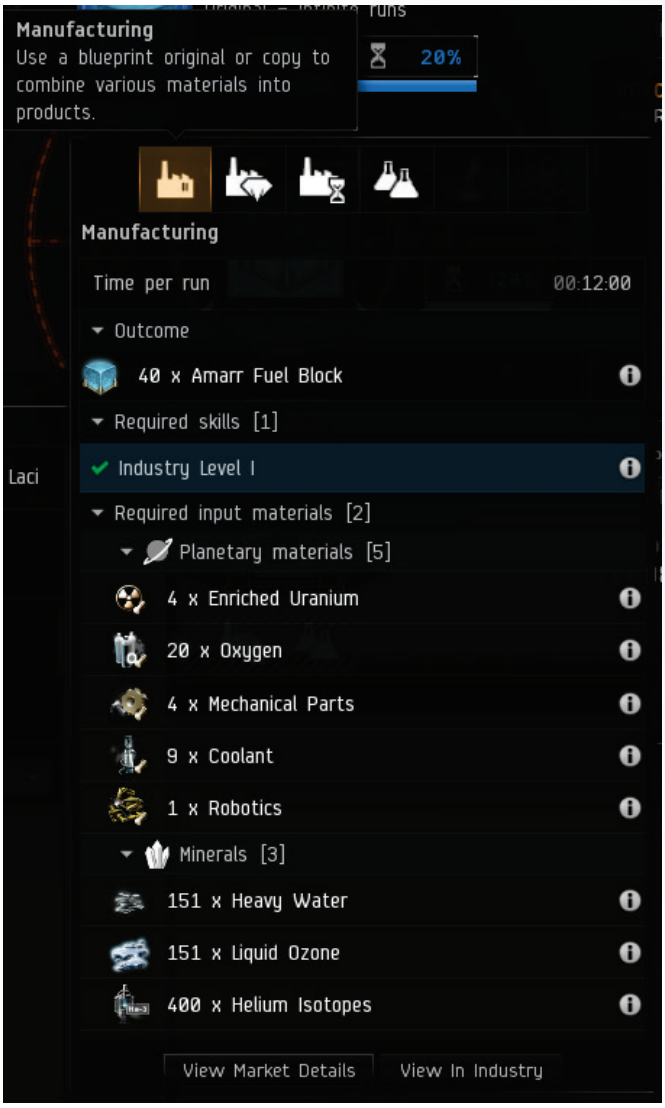
What You May Need for Production:

- **Blueprint:** BPO – Blueprint Original, or BPC – Blueprint Copy, or simply BP – Blueprint (used in the generic, referring to either a BPO or BPC).
- **Raw materials:** the ones listed on the blueprint, as a required material for the production.
- **Requested skills:** also indicated on the blueprint.
- **Factory, with manufacturing service:** Manufacturing service in a station, or an Assembly Array at a POS (Player Owned Structure).

It is important to note that the capital class ships (carriers, the Rorqual and dreadnoughts) can be produced only in low-security stations or POSes, and the super capitals (supercarriers and titans) can be produced only on POSes with the necessary sovereignty.

Ship And Equipment Production

To get a final product from refined materials and a blueprint, we will need to manufacture. There are some prerequisites. Let's start with the skills needed, which are very time-consuming.



Industry: Allows basic operation of factories, 4% reduction in manufacturing time per skill level.

Material Efficiency: Skill at efficiently using factories. 5% reduction per skill level to the material requirements needed for production. (Industry level III required).

Mass Production: Ability to run one additional manufacturing job per level (Industry level III required).

Advanced Mass Production: Ability to run one additional manufacturing job per skill level (Mass Production level V required).

Supply Chain Management: Proficiency at starting manufacturing jobs remotely. Without this skill, one can only start jobs within the solar system where one is located. Each level increases the distance at which research projects can be started. Level 1 allows for jobs at a range within 5 jumps, and each subsequent level adds 5 more jumps to the range, with a maximum of a 25 jump range.

Drug Manufacturing: Needed to manufacture boosters.

The Supply Chain Management, Mass Production and Advanced Mass Production skills are not absolutely necessary to produce things, but essential if you want to work in large quantities.

They are also useful if you want to produce things in remote locations or you want to make more than one thing. The Industry and Material Efficiency skills are essential. You will need them both to level V before you start producing anything.

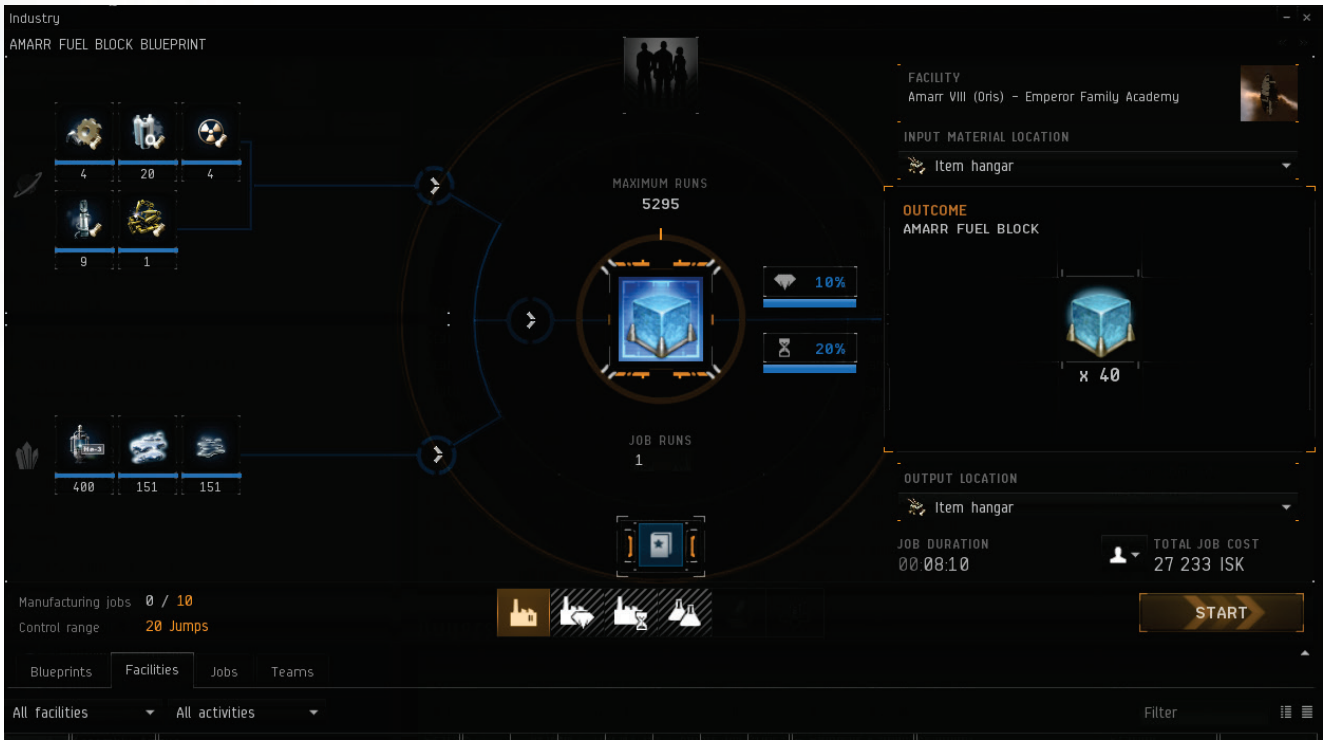
The skills you will need for producing Tech II, Tech III and capital ships are so diverse, it is not practical to list them all here. You will always find the required skills in a given BPC/BPO's info in which we will talk about in later sections

To find the requirements for production, check the BP's 'Show Info' (the little blue 'i' symbol), then find the 'Bill of Materials' tab. These quantities always cover one run of the blueprint. To know how much the result is exactly, check the Attributes tab. You will find the value in the square bracket. Most things come in [1], Booster charges come in [10], Bombs in [20], and Ammunition in [100].

For constructing any Tech I ship, equipment or capital ship component, you will need the raw materials, the proper blueprint and a place to manufacture. We already know the types of the raw materials, and we also discussed the blueprints in the Chapter 7. The only thing left is to create things from them.

First, choose the BP, right-click on it, and choose the option 'Use Blueprint'.

The BP and the required materials have to be in the same place. If they are located in a container, in the station where you want to produce, select 'Container Name'. If they are simply on the same station (Item Hangar), select 'Item Hangar'.



Also set up the quantity you wish to produce. If you change your mind, simply modify the plan. You can even replace or change the blueprint.

Manufacturing at a POS is better, all assembly arrays have a 2% material reduction to manufactured products (except for the Drug laboratory, Subsystem System Array, Rapid Equipment Assembly Array and Supercapital Assembly Array). Assembly Arrays will keep their 25% time reduction.

After the job has been completed, open the Science & Industry window, select the Jobs tab. Then, select your job, press the 'Deliver' button and the products will be delivered to the previously selected location.

Please note that: using the station equipment isn't free! You have to pay for the manufacturing job!

You should calculate the cost of materials in the final price, regardless of if you mined it yourself or not. It is not free. Why? If you sell them, you will get the ISK value of the minerals (so if you use them, it is like you have bought them for the price you would have sold them for). By thinking that way, you can avoid selling items cheaper than the cost of build in materials.

Teams – Unity Is Strength

All jobs now require a workforce. All jobs automatically have regular workforce attached, so no special action will be required to start jobs. A "team" is an expert NPC labor force, that players can choose to hire instead of using the regular, provided workforce. A team consists of specialists that give bonuses to certain jobs.

These specialized teams are not available everywhere at any time. They are hired into a system through an auction. Once in a system, the team is available for anyone doing a job in that system for month, at which time the team retires and goes on a much needed space "vacation".

Team Create

Auction (1 week)

Active (4 weeks)

Retirement

There is a vast variety of specialized teams. Each specialized team affects a particular job activity (like manufacturing or copying) and a limited sub-section of items. For example, a team could affect manufacturing of frigates, but have no effect on manufacturing of cruisers.

By default, a regular workforce is hired and its salary included in the base cost. Players then have the option to hire (at an extra cost) a specialized team, consisting of team members with specialized knowledge and expertise. These teams can give a bonus to the job. The bonus might be reduction in materials needed and/or time to complete the job. This extra bonus comes in addition to the bonus you get from the facility you're using or the research level of your blueprint.

A specialized team resides in a solar system and can be used by anyone doing a job in that system, including in POSes.

- Each specialized team is linked to a specific activity (manufacturing, copying, material research, etc.).
- Each specialized team has a type, indicating what kind of stuff it can affect. There are six types: structure, components, consumables, ship, mobile and equipment. For example, a team that could affect the manufacturing of Rifters, would have the “manufacture” activity and the “ship” type.
- Each team has four members, and each member has a specialty. The specialty can be broad, but with less bonus (for example Ship – Small Class) or narrow and bigger bonus (like Ship – Frigate). Team members cannot have the same specialty.
- Each team member affects either material efficiency (ME) or time efficiency (TE). Members of a team can affect either and don’t all have to affect the same.
- Each team member also has an efficiency level, which dictates how big of a bonus he or she gives. There are five level of efficiency, with each level above 1 being a multiple of the level 1 bonus. The bonus given by level 1 is determined by whether the team member has a broad or narrow focus and whether it affects material efficiency or time efficiency.

The stat bonuses as they stand now are:

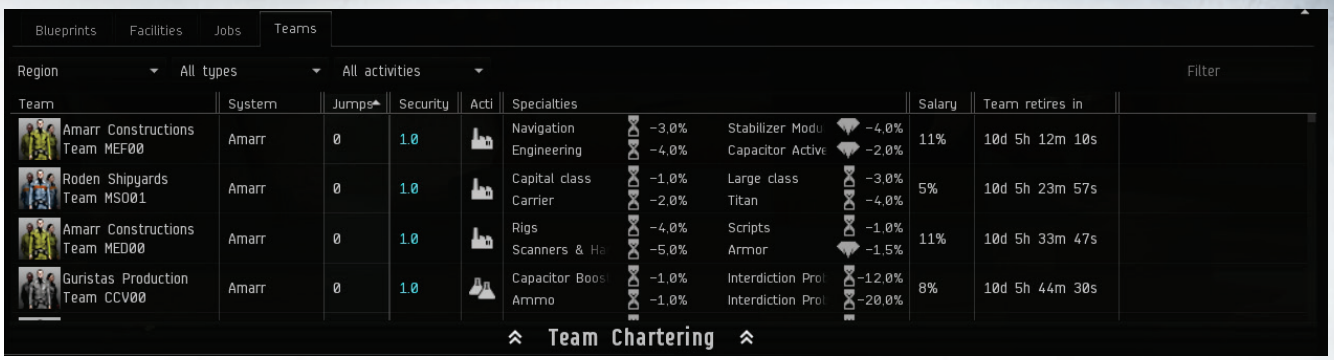
	Material		Time	
	Broad	Narrow	Broad	Narrow
Level 1	-0,5 %	-1%	-1%	-2%
Level 2	-1%	-2%	-2%	-4%
Level 3	-1,5%	-3%	-3%	-6%
Level 4	-2%	-4%	-4%	-8%
Level 5	-2,5%	-5%	-5%	-10%

How much extra cost a specialized team demands depends on the overall efficiency of the team. The extra salary is a percentage that comes on top of the normal salary cost. The percentage can range from +2% to +18%.

In addition to its stats, each team also has a unique name that gives an indication of what it can do and where it originated.

Teams can be viewed in a new tab in the Industry window, called (you guessed it) Teams. This lists all teams, but can be filtered in many ways to allow players to drill down to exactly what they’re looking for.

Selecting a blueprint and job type will automatically filter teams which give a bonus to that particular job, highlighting the particular specializations that apply; these can be filtered down by location



Clicking the "Team Chartering" option at the bottom of the Teams tab switches the tab to Chartering view.

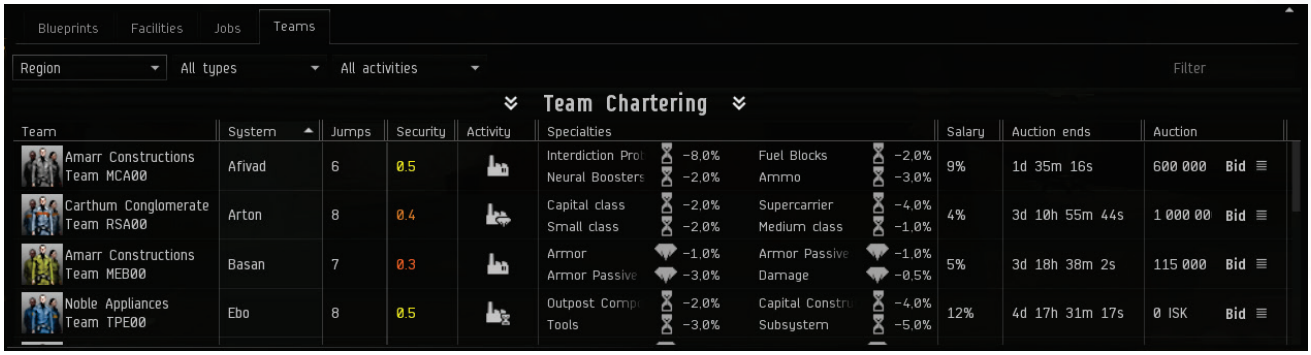
A team is either up for auction (where players vie for where the team will operate) or active in a solar system (the one that won the bid). So if you're looking for a team with particular characteristics, you would start by looking at what teams are active in your vicinity and if there are no good candidates currently active, you can see if any decent team is available for auction.

All auctions last seven days. Bids are placed on a team on behalf of a solar system. This means bids made by multiple players on the same system are pooled together.

When placing a bid, the default location is the same system you're in, but you can edit this to bid on a system remotely. A bid can be entered for any system, including wormhole systems.

Bidding on behalf of a system that is far away requires a minimum initial bid. Teams have a home location when they are created and the minimum is higher the further away the team's home is. This represents a relocation cost and gives a small amount of geographical differentiation without it being too stifling.

Note that while a team is up for auction, it cannot be hired on any other jobs.



When the auction ends, the solar system with the highest pooled bid wins. The team becomes immediately available for hire in the winning system. The team will be active in the system for 28 days (four weeks), at which time it retires (or is institutionalized; Inferno does not treat its users well). Any jobs the team was hired for are completed normally even if the team retires while the job is still ongoing. If no bids were made on the team, the team retires immediately at the conclusion of the auction.

Rigs - Pimp My Ship

In EVE, you can tune your ship by using rigs. Every type of ship (except freighters and shuttles) has slots for rigs, known as Upgrade Hardpoints. There are typically three on Tech I and Tech III ships, and two on Tech II ships. All ships have calibration points, which act as a fitting resource for rigs.

Fitting a rig requires you to have the skill for the rig's category, at level I for Tech I rigs and at level IV for Tech II rigs. You will also need the skill Jury Rigging.

Rigs all come with benefits for the ship, but also disadvantages, which could mean less armor, or higher resource consumption. These negative effects are called Drawbacks and can be reduced with adequate skill; every level reduces the effect of penalty.

For example, using a Trimark Armor Pump with the skill 'Armor Rigging' on level IV, the ship will be 6% slower, instead of the original penalty of 10%.

Another very important fact: the rig will be destroyed if removed or if the ship gets repackaged. Think of rigs as the ship's implants. Of course, with ship destruction, the rigs will be lost. There is no chance that they will appear in the ship's loot.

Salvaging

In order to manufacture rigs, you need to have certain materials that can be obtained through salvaging. You need to use a module called a salvager (either a Salvager I or Salvager II, the Tech II equivalent).

The basic skill requirement is Salvaging at level I. The skill requirements to achieve that are:

- Mechanic level III
- Survey level III
- CPU management level I

For the Tech II version, a level V Salvaging skill is required.

Salvaging Equipment

The salvager module needs a high slot on the ship and can be activated after targeting a wreck. The duration of a cycle is 10 seconds. Once a salvage attempt is successful, the material will automatically be transferred to your cargo hold if you have sufficient space.

The cycle restarts if the attempt is unsuccessful, continuing this procedure until you succeed, someone kills you, or you run out of cap.

Module Name	Meta Group	Meta Level	Activation Cost	Bonus	CPU	PG	Cycle Time	Optimal Range
Salvager I	Tech I	—	20 GJ	**5%**	20 tf	1 MW	10 sec.	**5000 m**
Salvager II	Tech II	5	20 GJ	**7%**	25 tf	1 MW	10 sec.	**6000 m**

Salvage Drone

This light drone of 5m^3 is a very useful companion in our fight against wrecks - no, it does not receive a bonus against Minmatar ships, unfortunately. :)

Although its performance is nothing short of inferior compared to salvager modules (3% base and + 2% per level of Salvage Drone skill), this is compensated by the fact that once you let it loose it will visit each and every blue and white wreck in the vicinity of your ship on its own.

To use this drone, you will have to learn the Salvage Drone Operation skill to least level one (prerequisites are: Drones level 4, Salvaging level 2)

Useful Implants And Rig(s) For Salvaging

Sometimes referred to as Corpse Robbers, Garbagemen, or Wreck Divers. Salvagers clean up the mess left behind in the wake of battle, sifting through the flotsam and jetsam for those diamonds in the rough.

These diamonds can then be used to build rigs to be fit on other ships. Call it an act of recycling or the reprehensible desecration of a pilot's tomb, either way salvaging is a lucrative and thriving industry.

Type	Name	Effect
Implant	Poteque 'Prospector' Salvaging SV-905	A neural Interface upgrade that boosts the pilots exploration skills. 5% increase in chance of salvage retrieval.
Implant	Poteque 'Prospector' Environmental Analysis EY-1005	A neural interface upgrade that boosts the pilot's skill at environmental analysis. 5% reduction in cycle time of salvage, hacking and archaeology modules. +5 Virus Coherence bonus for Data and Relic Analyzers.
Rig	Salvage Tackle I	This ship modification is designed to increase a ship's chance of salvage retrieval at the expense of max velocity. (+10%)
Rig	Salvage Tackle II	This ship modification is designed to increase a ship's chance of salvage retrieval at the expense of max velocity. (+15%)

Wrecks

In order to salvage you need wrecks, which can be found almost anywhere.

Any time a ship has been destroyed a wreck will be left behind.

Wrecks come in different sizes, depending on the type of ship, and have different amounts of materials in them.

The rule of thumb is that the bigger the ship, the more salvageable materials it will yield.

The amount of salvage and which components you receive are calculated based on percentages pre-defined into the wreck.

Materials Gained By Salvaging

You can gain the below materials using the salvaging module. Tech I materials can be salvaged from NPCs or from the wrecks of other player's Tech I ships. Tech II rig materials come from Commander NPC spawns or from the wrecks of other player's Tech II ships.

Salvaged Material Name	Tech lvl
Alloyed Tritanium Bar	T1
Armor Plates	T1
Artificial Neural Network	T2
Broken Drone Transceiver	T1
Burned Logic Circuit	T1
Capacitor Console	T2
Charred Micro Circuit	T1
Conductive Polymer	T1
Conductive Thermoplastic	T2
Contaminated Lorentz Fluid	T1
Contaminated Nanite Compound	T1
Current Pump	T2
Damaged Artificial Neural Network	T1
Defective Current Pump	T1
Drone Transceiver	T2
Enhanced Ward Console	T2
Fried Interface Circuit	T1
Impetus Console	T2
Intact Armor Plates	T2

Salvaged Material Name	Tech lvl
Intact Shield Emitter	T2
Interface Circuit	T2
Logic Circuit	T2
Lorentz Fluid	T2
Malfunctioning Shield Emitter	T1
Melted Capacitor Console	T1
Micro Circuit	T2
Nanite Compound	T2
Power Circuit	T2
Power Conduit	T2
Scorched Telemetry Processor	T1
Single-crystal Superalloy I-beam	T2
Smashed Trigger Unit	T1
Tangled Power Conduit	T1
Telemetry Processor	T2
Thruster Console	T1
Trigger Unit	T2
Tripped Power Circuit	T1
Ward Console	T1

Salvager Ships

The most popular 'garbage collector' ships are destroyers. Because of the high number of turret slots, they are suitable for 'raking' the wrecks (pulling them to the ship with a tractor beam), and still have enough slots left for salvager modules, providing continuous gathering. Another excellent ship is the Gallente Exequror cruiser.

With cargo expanders and salvager rigs, the ship has a cargo capacity near 2000m^3 and can run two tractor beams and two salvagers.

Of course, the number of turret slots is not everything; you will need a suitable cargo hold for the loot. Lastly, increase manoeuvrability with an afterburner or microwarpdrive.

Currently three ship classes get a bonus to use tractor beams: marauders, the Orca and the Rorqual. These ships have big cargo bays, but are billion ISK ships. They are MUCH slower than a destroyer or cruiser, and if the wreck is out of reach from the tractor beam it is necessary to get closer, which could mean a loss of time for such a large ship.

You cannot always use a MWD in Deadspace missions. Many prefer using an afterburner instead, as it will always work. Useful helpers in our quest for rig components are the Salvage Drones. With these little critters we are able to automate the process of salvaging (in the case of the white and blue wrecks).

Unfortunately their effectiveness is not something to be proud of: 3% base +2% per level of Salvage Drone skill

The Noctis

A dedicated salvaging ship, the Noctis, has been added to EVE. No longer will you have to use ships less suited for this line of work.

The Noctis is a salvager's wet dream and comes with some specialized bonuses, a large cargo hold and eight high slots for salvagers and tractor beams.

The ship can target (with proper skills) up to 10 different things and with 3 x Tech II Cargohold Expander the cargohold size is 3026 m^3, so you can use a GSC too (and get +900 m^3).

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- Slot layout – 8 high, 2 mid, 3 low
- Powergrid – 250 MW
- CPU – 300
- Base speed – 155 m/s
- Cargo capacity – 1,460 m3
- Rig slots/Calibration – 3/400
- Shield/Armor/Hull hit points – 1700 hp/2200 hp/3200 hp
- ORE Industrial skill bonus: 5% bonus to Tractor Beam and Salvager cycle time and 60% bonus to Tractor Beam range and velocity per level

Ore Industrial Skill Level	Cycle Time	Tractor Beam I		Tractor Beam II	
		Optimal Range	Speed	Optimal Range	Speed
Base Value	5s	20,000 m	500 m/s	24,000 m	600 m/s
Level 1	4,75s	32,000 m	800 m/s	38,400 m	960 m/s
Level 2	4,5s	44,000 m	1100 m/s	52,800 m	1320 m/s
Level 3	4,25s	56,000 m	1400 m/s	67,200 m	1680 m/s
Level 4	4s	68,000 m	1700 m/s	81,600 m	2040 m/s
Level 5	3,75s	80,000 m	2000 m/s	96,000 m	2400 m/s

Rigs

Rigs are the implants of ships, and all ships (except freighters and shuttles) have rig slots (like the implant slots of the character). All ships have a calibration point capacity, and all rigs have a calibration point requirement. We can check the ship's info to see how many rig slots it has, its calibration point and what size of rig could fit in it.

They are made in a similar manner to other equipment: i.e. a blueprint is needed. The only difference is that these modules are made of salvaged materials obtained from salvaging.

Rigs are categorized according their size and their area of application. The amount of materials to produce the rigs depends on their size, but their effect is the same. As you can see, it is much cheaper to produce a small rig.

You will need five times more material for every size increment, so if you need three pieces of something for a small rig, you will need 15 pieces for the medium size, 75 pieces for the large version and 375 pieces to produce the capital version. Their sizes are: 5 m^3 10 m^3 20 m^3 and 40 m^3.

Small Rigs: Used for tuning small ships, like frigates, destroyers and their Tech II versions.

Medium Rigs: Used on medium ships, like cruisers, industrial ships and battlecruisers.

Large Rigs: For the battleship class: Battleships, Marauders.

Capital Rigs: Accessories for the big ones, Capitals

You will need the skill for the particular group for fitting them. You will also require Jury Rigging level III and Mechanic level III. The CPU management and Energy Grid Tech II rigs require Jury Rigging level IV.

Armor Rigs	Drawbacks
Affecting the armor of the ship and the success of salvaging	-10% max velocity
Drone Rigs	
Affecting the drones of the ship	-10% ship's CPU
Electronics Superiority Rigs	
Affecting the electronic subsystems of the ship	-10% shield
Energy Weapon Rigs	
Affecting the energy turrets of the ship	+10% PG requirements for energy weapons
Missile Launcher Rigs	
Affecting the ship's missile launchers	+10% CPU requirements for missile weapons
Shield Rigs	
Affecting the shields of the ship	+10% signature radius
Astronautic Rigs	
Affecting the ship's manoeuvring capability and the cargo capacity	-10% armor (Hyperspatial Velocity Optimizers and Warp Core Optimizers have CPU amount penalty!)
Electronics Rigs	
Affecting the ship's electronic systems	No negative effect
Energy Grid Rigs	
Affecting the ship's energy systems	No negative effect
Higgs Anchor rigs	
Causing the fitted ship to increase in mass and agility, greatly reducing maximum velocity.	-10% Warp Speed (reduced by the Astronautics Rigging skill)
Hybrid Weapon Rigs	
Affecting the Hybrid weapons of the ship	+10% PG requirements for hybrid weapons
Projectile Weapon Rigs	
Affecting the Projectile weapons of the ship	+10% PG requirements for projectile weapons

Combat Boosters

One of the interesting things in EVE is the combat booster, which can be made from the gases mined from gas clouds. The boosters are categorized into four groups according to their strength:

Synth Boosters

Legal, can be transported in high-sec, has no side effects. The provided boost is 3%. Required skills: Biology level I and Science level I.

Standard Boosters

Illegal in high-sec, 20% chance of side effect. Side effects are 20% of whatever they affect. The provided boost is 20%. Required skills: Biology level I and Science level I.

Improved Boosters

Illegal in high-sec, 30% chance of side effect. Side effects are 25% of whatever they affect. The provided boost is 25%. Required skills: Biology level II and Science level I.

Strong Boosters

Illegal in high-sec, 40% chance of side effect. Side effects are 30% of whatever they affect. The provided boost is 30%. Required skills: Biology level III and Science level I.

Each character has three booster slots and you can equip one booster in each slot. Important note: If you already have a booster active in a certain slot, any attempt to consume another booster of the same slot-type will fail. It is not possible to cancel or abort the booster prematurely once it is consumed.

They only way to get rid of the booster effects is to wait until the end of the duration of the booster. To use a booster, you right-click the booster icon and select consume. When this is done, the Character Sheet icon in the NeoCom will blink.

The currently active boosters can be seen in the Augmentations tab. A list of the active effects of the booster, the negative side effects and a countdown of the duration left is shown for each booster there.

Transporting And Selling Boosters

Transporting boosters in high-sec is illegal. If customs or military NPCs scan your cargo, you will be fined for millions and also lose standings with the current faction. However, using them and trading on the market is legal. Creating contracts are also a possibility, but you cannot place sell orders.

Required Skills

To swallow a booster, you need the Biology skill. The side effect chance can be reduced with the Neurotoxin Recovery skill and the severity of the side effects can be reduced with the Neurotoxin Control skill.

Biology: 20% bonus to attribute booster duration per skill level.

Neurotoxin Control: Reduces the severity of the side effects by 5% per skill level.

Neurotoxin Recovery: Reduces the chance of side effects of combat boosters by 5% per skill level.

Booster Types

Boosters become more expensive and more difficult to produce as they go up in strength (i.e. they require more manufacturing steps).

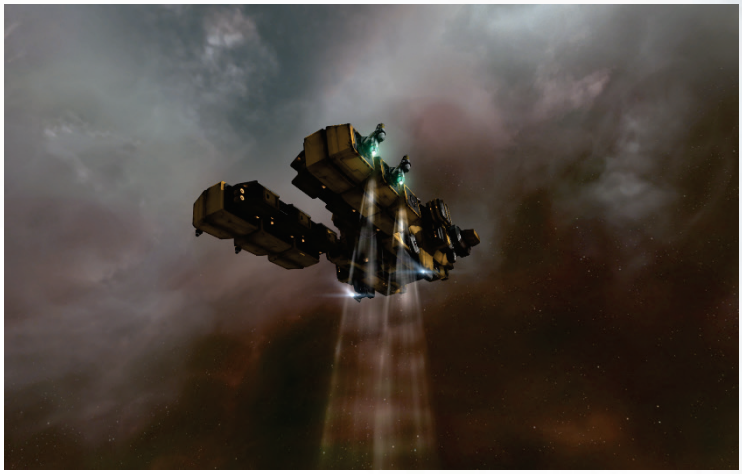
Booster Name	Strength		
	Standard	Improved	Strong
Exile Booster	Pure Standard Exile	Pure Standard Exile + Pure Standard Drop	Pure Improved Exile + Pure Standard Sooth Sayer
Drop Booster	Pure Standard Drop	Pure Standard Exile + Pure Standard Drop	Pure Improved Drop + Pure Standard X-Instinct
X-Instict Booster	Pure Standard X-Instinct	Pure Standard X-Instinct + Pure Standard Sooth Sayer	Pure Improved X-Instinct + Pure Standard Exile
Sooth Sayer Booster	Pure Standard Sooth Sayer	Pure Standard X-Instinct + Pure Standard Sooth Sayer	Pure Improved X-Instinct + Pure Standard Drop
Blue Pill Booster	Pure Standard Blue Pill	Pure Standard Blue Pill + Pure Standard Crash	Pure Improved Blue Pill + Pure Standard Mindflood
Crash Booster	Pure Standard Crash	Pure Standard Blue Pill + Pure Standard Crash	Pure Improved Crash + Pure Standard Frentix
Frentix Booster	Pure Standard Frentix	Pure Standard Frentix + Pure Standard Mindflood	Pure Improved Frentix + Pure Standard Blue Pill
Mindflood Booster	Pure Standard Mindflood	Pure Standard Frentix + Pure Standard Mindflood	Pure Improved Mindflood + Pure Standard Crash

Booster	Slot #	Type	Effect	Side Effect Chance	Side Effect
Exile Booster	1	Synth	+3% Armor Repair	-	-
		Standard	+20% Armor Repair	20 %	-20 % Armor Hitpoint -20 % Turret Tracking +20 % Missile Explosion -20 % Capacitor Capacity
		Improved	+25% Armor Repair	30 %	-25 % Armor Hitpoint -25 % Turret Tracking +25 % Missile Explosion -25 % Capacitor Capacity
		Strong	+30% Armor Repair	40 %	-30 % Armor Hitpoint -30 % Turret Tracking +30 % Missile Explosion -30 % Capacitor Capacity
Crash Booster	3	Synth	+3% Explosion Radius	-	-
		Standard	+20% Explosion Radius	20 %	-20 % Shield Boost -20 % Armor Hitpoint -20 % Missile Velocity -20 % Velocity
		Improved	+25% Explosion Radius	30 %	-25 % Shield Boost -25 % Armor Hitpoint -25 % Missile Velocity -25 % Velocity
		Strong	+30% Explosion Radius	40 %	-30 % Shield Boost -30 % Armor Hitpoint -30 % Missile Velocity -30 % Velocity
Frentix Booster	2	Synth	+3% Optimal Range	-	-
		Standard	+10% Optimal Range	20 %	-20 % Shield Boost -20 % Armor Hitpoint -20 % Turret Tracking -20 % Velocity
		Improved	+15% Optimal Range	30 %	-25 % Shield Boost -25 % Armor Hitpoint -25 % Turret Tracking -25 % Velocity
		Strong	+20% Optimal Range	40 %	-30 % Shield Boost -30 % Armor Hitpoint -30 % Turret Tracking -30 % Velocity
Blue Pill Booster	1	Synth	+3% Shield Boost	-	-
		Standard	+20% Shield Boost	20 %	-20 % Shield Capacity -20 % Turret Optimal Range -20 % Explosion Velocity -20 % Capacitor Capacity
		Improved	+25% Shield Boost	30 %	-25 % Shield Capacity -25 % Turret Optimal Range -25 % Explosion Velocity -25 % Capacitor Capacity
		Strong	+30% Shield Boost	40 %	-30 % Shield Capacity -30 % Turret Optimal Range -30 % Explosion Velocity -30 % Capacitor Capacity

Booster	Slot #	Type	Effect	Side Effect Chance	Side Effect
Sooth Sayer Booster	2	Synth	+3% Falloff	-	-
		Standard	+10% Falloff	20 %	-20 % Shield Boost -20 % Armor Repair Amount -20 % Turret Optimal Range -20 % Velocity
		Improved	+15% Falloff	30 %	-25 % Shield Boost -25 % Armor Repair Amount -25 % Turret Optimal Range -25 % Velocity
		Strong	+20% Falloff	40 %	-30 % Shield Boost -30 % Armor Repair Amount -30 % Turret Optimal Range -30 % Velocity
Drop Booster	2	Synth	+3% Tracking Speed	-	-
		Standard	+25% Tracking Speed	20 %	-20 % Armor Repair Amount -20 % Shield Capacity -20 % Turret Falloff -20 % Velocity
		Improved	+31.25% Tracking Speed	30 %	-25 % Armor Repair Amount -25 % Shield Capacity -25 % Turret Falloff -25 % Velocity
		Strong	+37.5% Tracking Speed	40 %	-30 % Armor Repair Amount -30 % Shield Capacity -30 % Turret Falloff -30 % Velocity
Mindflood Booster	1	Synth	+3% Capacitor	-	-
		Standard	+10% Capacitor -20% Shield Boost	20 %	-20 % Armor Repair Amount +20 % Missile Explosion -20 % Turret Optimal Range
		Improved	+15% Capacitor -25% Shield Boost	30 %	-25 % Armor Repair Amount +25 % Missile Explosion -25 % Turret Optimal Range
		Strong	+20% Capacitor -30% Shield Boost	40 %	-30 % Armor Repair Amount +30 % Missile Explosion -30 % Turret Optimal Range
X-Instict Booster	1	Synth	-2.25% Signature Radius	-	-
		Standard	-7.5% Signature Radius	20 %	-20 % Shield Capacity -20 % Armor Hitpoint -20 % Turret Falloff -20 % Missile Velocity
		Improved	-11.25% Signature Radius	30 %	-25 % Shield Capacity -25 % Armor Hitpoint -25 % Turret Falloff -25 % Missile Velocity
		Strong	-15 % Signature Radius	40 %	-30 % Shield Capacity -30 % Armor Hitpoint -30 % Turret Falloff -30 % Missile Velocity

Gas Cloud Harvesting

When you initially enter a gas cloud, your first course of action should always be to look around. When you reach the edge of a constellation that contains gas clouds, a pop-up message appears to inform you about it. To actually get to the clouds, you need to scan for them with probes (see Chapter 10 for Exploration advice). It is not an easy task, because the signals are relatively rare and weak in strength. With a bit of luck, you will find a cloud signal. Sometimes it is an empty place and only the cloud waits there, other times you will have to kill some enemy spaceships. If you are extremely lucky, you'll find a whole complex with pirates producing drugs. Here you will not find a gas cloud, but a lot of 'booster reaction' BPCs and several booster BPCs. These complexes contain multiple pockets, and you will have to fight through them if you want all the loot. These sites require the Hacking skill, and only pilots having the skill can enter the pocket. The rewards are huge: lots of blueprints and some expensive skillbooks (Neurotoxin Control, Neurotoxin Recovery). Cleaning out pirate complexes gives you a head start for manufacturing.

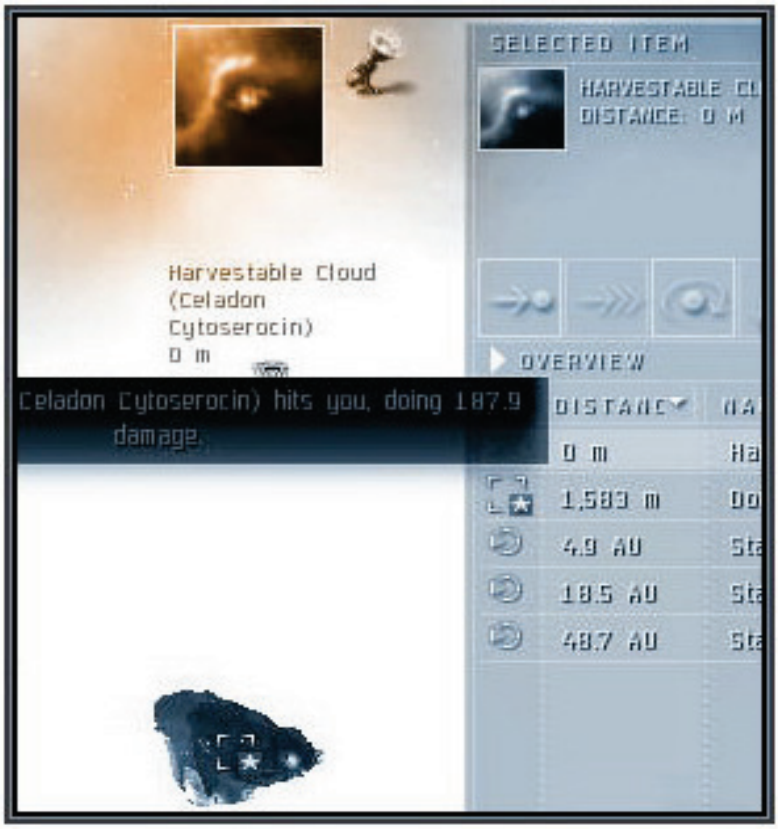


But let's go back to harvesting clouds. Harvesting requires a gas cloud harvester module. The necessary skills for that can be purchased at several pirate stations, costs around 21.6M ISK. You will also need Mining IV. The number of modules you can fit depends on your Gas Cloud Harvesting skill, for example level V means five modules. It is recommended that you learn up to level V, as it makes it easier to harvest using more modules. In a lot of cases, the clouds are located 50-70 km away from the warp-in point, so use a ship fitted with afterburners and expanded cargo holds.

The gas cloud explodes randomly (sometimes every 10-20 seconds, sometimes after minutes). Without resists, the damage you have to handle is around 1000 hitpoints, so using a ship below battlecruiser size is not recommended. In my opinion the best ship for gas harvesting is the Hurricane. You can expand the cargo hold up to 2000 m^3, it can easily tank the explosions, it can reach the cloud fast, and it has six turret slots for fitting the harvester modules. The Drake, by contrast, cannot fit harvester modules as it has no turret slots (only launcher slots). The range of the explosions is limited, so sitting outside of the explosion range but inside the range of your harvesters will reduce the damage greatly.

Gas Reactions

When you are done with the gas harvesting, you will need to transport the material to a POS equipped with the required reactor arrays.



You will need at least a medium POS to produce standard boosters, or a large one if you are thinking about the improved ones. To start the production, you will need several POS modules.

Apart from the reactor, you will also need two input silos as the end result will be split into two parts. Unlike moon harvesting, these silos require a manual upload and you must have the right type of silo.

Medium Biochemical Reactor Array

An instrument for various different substances to mix, and where biochemical processes take place that turn a simple element into a complex chemical; used for creating standard pure boosters

Fitting	CPU: 750 TF	Powergrid: 250.000 MW
Skill Prerequisites	Anchoring lvl II	
Volume	4000 m^3	

Biochemical Reactor Array

Reacting Complex Biochemicals, half speed; used for creating improved and strong boosters

Fitting	CPU: 1250 TF	Powergrid: 250.000 MW
Skill Prerequisites	Anchoring lvl II	
Volume	4000 m^3	

Biochemical Silo

Storing Gas Cloud products		
Fitting	CPU: 250 TF	Powergrid: 250.000 MW
Capacity	20 000 m^3	
Skill Prerequisites	Anchoring lvl I	
Volume	4000 m^3	

You will also need two General Storages, and a Hazardous Biochemical silo.

General Storage

Stores or provides general commodities		
Fitting	CPU: 250 TF	Powergrid: 50.000 MW
Capacity	20 000 m^3	
Skill Prerequisites	Anchoring lvl I	
Volume	4000 m^3	

Hazardous Chemical Silo

Stores the end result; pure boosters		
Fitting	250 TF	Powergrid: 50.000 MW
Capacity	20 000 m^3	
Skill Prerequisites	Anchoring lvl I	
Volume	4000 m^3	

An example of a standard booster reaction:

- First you need to install a reactor and then place the reaction blueprint inside.
- Then install a General Storage unit, shown above, where you will store the water (you will have to select the water type in the silo).
- Install a Biochemical Silo for the gas cloud.
- After this, you will need another General Storage for the precipitated water (95 units of water from the 100 falls back as result after the reaction).
- At the end, a Hazardous Silo module for the end result of the reaction. That is the Standard Pure booster.

When you are done, and all silos are calibrated to the correct type, turn the reactor online so you can link the modules. The result (a pure booster) is only the medium state. For the final booster, you will need the blueprint, some Megacyte, and if you are not producing on an outpost, a Drug Lab. The Drug Manufacturing skill is also required to level I (level III in case of the Improved version) for the production. The Improved version production is nearly the same as the standard ones, but instead of water, you will need other materials, including the pure booster created previously.

Drug Lab

Pure booster + blueprint + other components = booster		
Fitting	250 TF	Powergrid: 50.000 MW
Capacity	100 000 m^3	
Skill Prerequisites	Anchoring lvl I	
Volume	1250 m^3	

What an Average Reaction Looks Like:

Standard: 20 Cytoserocin + 100 Water + reaction BPC --> Pure Standard Booster + 95 Water

Improved: 15 Pure Standard Booster + 15 pure other Standard Booster + 100 [Spirits or oxygen] --> 12 Pure Improved Booster + 95 [Spirits or oxygen]

The problem with improved boosters is that you will need another type of pure booster to manufacture it, so you either have to produce that as well or buy it.

Gas Cloud Types

Gas Cloud Name	Drug Name	Effect	Slot
Amber Cytoserocin	Blue Pill Booster	Shield Boost	Slot 1
Azure Cytoserocin	Sooth Sayer Booster	Falloff	Slot 2
Celadon Cytoserocin	Exile Booster	Armor Repair	Slot 1
Golden Cytoserocin	Crash Booster	Explosion Radius	Slot 3
Lime Cytoserocin	Frentix Booster	Optimal	Slot 2
Malachite Cytoserocin	Mindflood Booster	Capacitor	Slot 1
Vernillion Cytoserocin	X-Instinct Booster	Signature Radius	Slot 1
Viridian Cytoserocin	Drop Booster	Tracking Speed	Slot 2

There are some Mykoserocin gas clouds too, which are only suitable for producing synth boosters (blueprints can be purchased from an LP store), and their effect is merely a fraction of the regular boosters.

Gas Cloud:	Region	Systems	Booster Type
Celadon Cytoserocin	Fountain	3WE-KY 4-EP12 9-VO0Q A8-XBW IR-WT1 XF-TQL YZS5-4	Exile Booster
Golden Cytoserocin	Tenal	1QH-0K I1-BE8 W8O-19 ZH3-BS ZJ-QOO ZXA-V6	Crash Booster
Lime Cytoserocin	Catch	3GD6-8 3-OKDA 4M-HGL AX-DOT GE-8JV MY-W1V YHN-3K	Frentix Booster
Amber Cytoserocin	Vale Of The Silent	8-TFDX B-E3KQ BR-6XP G5ED-Y O-LR1H UL-4ZW Y5J-EU	Blue Pill Booster
Azure Cytoserocin	Wicked Creek	07-SLO DUO-51 GPD5-0 GRHS-B J-RXYN Z-A8FS	Sooth Sayer Booster
Viridian Cytoserocin	Cloud Ring	00TY-J 5S-KNL 6RCQ-V PPG-XC QA1-BT XG-D1L	Drop Booster
Malachite Cytoserocin	Delve	1-2J4P 9GNS-2 C3N-3S CX8-6K LWX-93 M0O-JG YAW-7M	Mindflood Booster
Vermillion Cytoserocin	Feythabolis	3L-Y9M BJD4-E BLC-X0 DUU1-K K-X5AX O9V-R7 TSG-NO	X-Instict Booster

The "Capital" Business

As the start of this section mentioned, manufacturing capital ships is a lot like playing with building bricks, but in gigantic sizes and costing astronomical sums. There are two kinds of capital ships: the so-called high-sec capitals, and the regular capitals. All ships that can be manufactured in high-sec stations are called highsec capitals (I.e., freighters, jump freighters and Orcas). Capitals that can only be manufactured in low-sec or 0.0 space are dreadnaughts, carriers and Rorquals. The capitals that can only be manufactured in 0.0 with the required sovereignty are the supercarriers and the titan. All capital ships are now allowed to use stargates in Low Security (LS) and Null Security (NS) space but are not allowed to enter High Security (HS).

In the simplest terms, you need the raw materials and a blueprint to create a capital ship. The raw materials need to be built into component capital parts, and each of those builds requires its own BP. You can purchase BPCs for this, but it quickly becomes expensive. Many consider it better to purchase the requisite BPOs and research them to improve ME and PE and save time and materials. To build a freighter, for example, you will need about five billion ISK worth of BPOs. In case of an Orca, this amount kicks up to around nine billion ISK.

The exception to this is the Tech II capital: the Jump Freighters. You will need the original Tech I version of the freighter (the actual ship), which is produced in the traditional way, and other manufacturing elements, like the seven racial Tech II components and a couple of additional items, including the jump drive. It is a much more difficult prospect to create.

	Capital Ship Part Name	Needed For
	Capital Propulsion Engine	Everything
	Capital Sensor Cluster	
	Capital Armor Plates	Everything
	Capital Capacitor Battery	
	Capital Power Generator	
	Capital Shield Emitter	
	Capital Jump Drive	
	Capital Cargo Bay	Only Freighters
	Capital Drone Bay	Only for Carriers and Supercarriers
	Capital Computer System	
	Capital Construction Parts	Everything
	Capital Clone Vat Bay	
	Capital Ship Maintenance Bay	
	Capital Corporate Hangar Bay	
	Capital Turret Hardpoint	
	Capital Siege Array	Only Dreads
	Capital Jump Bridge Array	Only Titans
	Capital Doomsday Weapon Mount	Only Titans
	Capital Launcher Hardpoint	Only the Nagflar and Caldari Dread & Titan

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R&D . . .

CHAPTER 7

EVE INDUSTRIAL BLACK BOOK

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The Big Plan

Even a tall lean man could sit in the chair that Mr Knox wanted to make himself comfortable in. But to no avail.

The night was terribly long – if we can consider the artificial cycles to be night and day to begin with. He was exhausted but knew that he doesn't have the luxury to rest. "I'll sleep when I am buried!" he used to say. And he smiled every time this verse came up in his mind because he couldn't even recall his last visit to a solid-surfaced planet. Especially in the know part of the Universe.

He opened a can of Quafe and got himself and his eyes lost in the vast cold emptiness of space. For there was no man to disturb him.

In his surrounding there was no one whom he could talk to. None to share his thoughts with. None to discuss his plans.

Five years is a really long time. Especially when the enemy is this unknown race.

He got up with a half-empty can then went to the door. The electronic gears around him were silently doing their appropriate job: scanners ran over his body, confirming his identity. Then the force fields disengaged and the door opened.

The small dark room that awaited him has been his home for the last four years eleven months; the room was empty except for a bed and the person with whom he began his journey.

He took a beep gulp of Quafe and then went on to check the instrumentation in silence. Everything was nominal - as always. The dark shadows and the dimly illuminated surroundings resembled the broken bridge of a village in a child tale.

Something was missing…

That special something that would give him the absolution, that special little something that made them do this trip in the first place. Unfortunately on the very first mission they had to learn the hard way: the blueprint that they uncovered with the sacrifice of so many lives had not enough data for enough copies. They discovered this "*little inconvenience*" too late.

For they already engaged the integration process and once engaged it cannot – must not be stopped for it would lead to complete and immediate loss of consciousness. To add insult to injury they came here through the use of a mystical wormhole and therefore were as far from the conscious-saving grid as they could possibly be.

One last blueprint would have been enough for salvation. He relinquished his hopes to obtain an original (not to mention it would have been technologically impossible). He just wanted to get out.

He stepped right next to the body gently stroking the curves on that face. Tiny wrinkles ran through his body as the hologram projector tried to cope with the situation.

He knew his chance was grim at best. Knew that his people would not survive the wrath of the sleepers.

Knew that he needed someone to help him, to reincarnate him. Enable him to return back from the virtual world into the real world. Time was running out. Machines cannot keep him alive indefinitely.

And if this body of his dies, he too will become a “sleeper”. And he didn’t want that.

That was not the plan…

Even though he was dead tired he knew he could not allow himself a rest. He went back to his desk, leaned over the blueprints and ran his eyes through the inventory. Maybe he might be able to reduce the waste during the production. Or he might be able to accelerate the process of neural implantation.

Who knows? Man proposes, God disposes… like the sleepers …

With all of us.

The Blueprint

Many people forget that this one is the most important part of production. Without it nothing would exist. Every ship, every module needs this "*little inconvenience*". There are two types of blueprints: the original blueprints (abbreviation **BPO**, standing for **BluePrint-Original**) and copies of the originals (abbreviation **BPC**, standing for **BluePrint-Copy**). The main difference between the two can be found in this sheet:

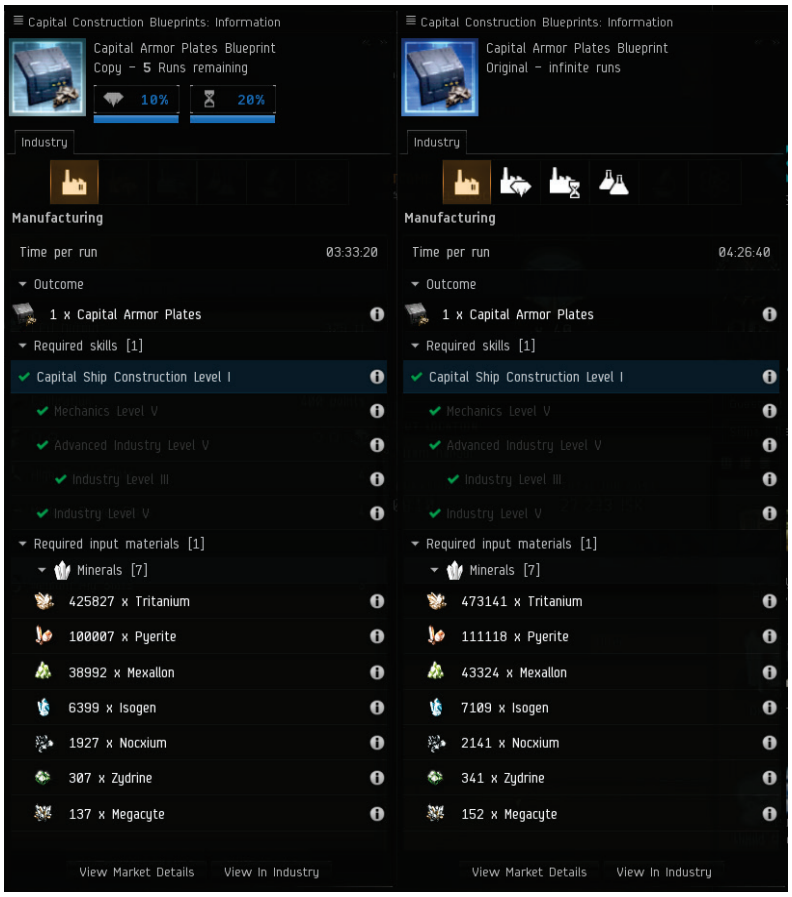
Attribute	BPO	BPC
Can Be Copied?	Yes	No
Researchable?	Yes	No
Maximum Runs?	Unlimited	Fixed Amount
Can be used for Invention?	No	Yes

The question arises: what is the **BPC** for? Why do we need it unless someone wants to do Inventions? The answer is simple: a copy of a blueprint is cheaper by many orders of magnitude than that of the original blueprint.

So if we have a researched BPO in our possession we can make copies of that and sell those instead.

Not to mention that if we need to "get things done quickly" with big quantity (for example a capital class module) than it BPCs can come really handy because every production run needs a blueprint. Hence if we have more blueprints we can initiate more production runs to manufacture at the same time!

Just imagine the cost in time and in money if we were to obtain original blueprints; research them to adequate quality; and then run just a couple of jobs with them. It is more efficient to simply acquire copies to do the job faster and cheaper.



When buying a blueprint on the market via contracts, it is recommended that you always check the top of the blueprint for the line 'Original – Infinite Runs'.

Some may try to scam you by linking a BPO-like item that is not actually a BPO. If you do not find these two important lines, it is not what they say it is.

It's a scam if they are charging you the BPO price for a BPC!

Blueprint Originals (BPO)

In this section we will look at all the features of a Blueprint Original and its many uses. Let's break down the information displayed when you inspect a BPO:

Blueprint Original (BPO): This shows that the blueprint is an original, meaning it can be researched or copied (and have infinite runs remaining).

Outcome Y x Z : This indicates what item will be produced. The number shows the quantity of the product you receive when the manufacturing job has finished.

ME: Material Efficiency: This value indicates how efficient this blueprint is in terms of materials required. The default value is zero. The higher the Material Efficiency value, the lower the waste. Each Material Efficiency level (ME) reduces blueprint required materials by 1%. It is no possible to research beyond ME 10 on any blueprint.

TE: Time Efficiency: This value determines how long one run of this blueprint will take. The default value is 0. Each Time Efficiency level (TE) reduces blueprint manufacturing time by 2%. This means that the default speed of production is about 20% slower than the perfect production time, just like in ME. Research is the key. With research, you can improve the default TE and ME attributes of the BPO.

Runs Remaining / Infinite Runs: This value shows how many runs you can produce from the current blueprint. This value is infinite when manufacturing from a BPO. On a blueprint copy (BPC) this value can be no higher than the maximum runs allowed. If you produce from a BPC, it is highly recommended to check how many runs remain before you begin the production. You can set the maximum number of runs when you copy the BPO. That number cannot be higher than the value of the Production Limit, of course.

Max runs per copy (Copy tab): This value shows the maximum runs a BPC can make.

Blueprint Copies (BPC)

Almost the same as a BPO, except that on the top of a BPCs 'Show Info' screen you will see 'Copy', the Licensed Production Runs Remaining value decreases with each production run. Note that BPCs cannot be researched any further. They can, however, be used for invention, but we will get to that later.

Researching And Copying Skills

It is recommended that you learn the following skills to level V if you plan to research BPOs, except for Advanced Laboratory Operation, which is fine at level IV. The increased speed in the skill's description means it will shorten the time needed to perform research or invention. It is important to note that the maximum time of a research job is 30 days, except when one cycle of research takes longer than 30 days. In that case the maximum research is only one ME or one TE.

Laboratory Operation: Allows basic operation of research facilities, which can be for ME, TE, Copy or Invention. It gives you one additional research slot with each level trained (required skill: Science level III).

Advanced Laboratory Operation: It gives you one additional research slot with each level trained (required skills: Science level III, Laboratory Operation level V). The skills stack together with the default research slot, so the maximum you can have is 11 research slots when both skills are at level V.

Metallurgy: Advanced knowledge of mineral composition. 5% Bonus to material efficiency research speed per skill level. (required skill: Science level IV).

Science: Basic understanding of scientific principles. It gives you a +5% bonus to blueprint copy job speed per skill level.

Research: Skill for researching more efficient production methods. 5% bonus to blueprint manufacturing time research per skill level. (required skill: Science level III).

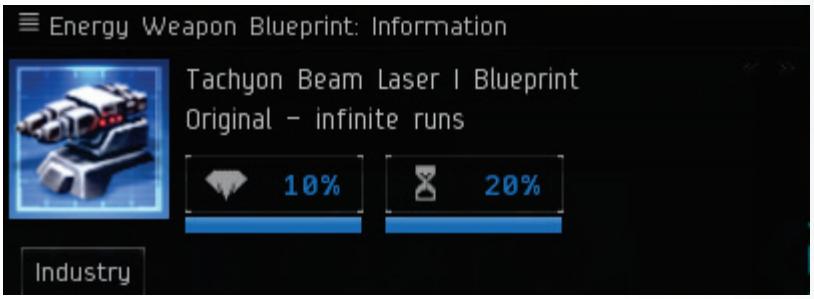
Scientific Networking: Skill at running research operations remotely. Without this skill, one can only start jobs within the solar system where one is located. Each level increases the distance at which research projects can be started. Level 1 allows for jobs at a range within 5 jumps, and each subsequent level adds 5 more jumps to the range, with a maximum of a 25 jump range.

Useful Implants

Name	Effect	Slot
Zainou 'Beancounter' Industry BX-8 series	A neural Interface upgrade that boosts the pilots manufacturing skills. 1-4% reduction in manufacturing time.	**8**
Zainou 'Beancounter' Reprocessing RX-8 series	A neural Interface upgrade that boosts the pilots manufacturing skills. 1-4% reduction in refinery waste.	**8**
Zainou 'Beancounter' Research RR-6 series	A neural Interface upgrade that boosts the pilots research skills. 1-5% bonus to blueprint manufacturing time research.	**6**
Zainou 'Beancounter' Metallurgy MY-7 series	A neural Interface upgrade that boosts the pilots research skills. 1-5% bonus to material efficiency research speed	**7**
Zainou 'Beancounter' Science SC-8 series	A neural Interface upgrade that boosts the pilots research skills. 1-5% bonus to blueprint copying speed.	**8**

The Perfect BPO

A BPO is 'perfect' when the ME and TE is maxed out (ME 10 and / or TE 20 on any blueprint). In some cases (mostly capital ships and freighters) it is almost impossible to reach that level, but it is always worth researching towards.



As you can see the ME 10 seems very good in most cases, but in other cases it may not be worth the research effort. For example, the 1% wastage in 100 pieces of ore is 0, but in the case of one million pieces, the wastage is still 2000 in materials.

Grab a calculator and check the numbers to see if it is worth another month of research time for the bit of improvement you'll see from that.

Of course, there is the case when the extra research time does not matter because the BPO isn't used that much.

It is still better to research the BPO than to just let it lie around collecting dust.

Invention - Tech2 (T2)

What is invention? It is a method for creating a Tech II BPC from a Tech I BPC. After the Trinity patch, the invention process got significantly easier. With the end of the Tech II BPO lottery from the early days of EVE Online, the only way to make Tech II BPCs is through invention.

Unfortunately inventors will be at a disadvantage against Tech II BPO owners, who got their BPOs back when the lottery was functioning.

Important!: all the materials, except interfaces and the bpcs, will be consumed in the process of invention, even if the invention fails! (The Invention removes one run from the input multi-run blueprint copy instead of consuming it entirely).

First, invention requires a BPC (using a BPO is a no-go). You can create a BPC by copying a BPO, or you can buy a BPC via contract from other players.

Second, invention requires race-specific datacores. It is optional to use a decryptor to improve the chance of success and alter the result BPC's stats.The datacores and decryptors can be found in Exploration Sites, or sometimes players sell them. These are just the materials that you need. You will also need certain skills.

Required Skills

For successful invention you need various skills in the science category, all at least at level IV. First you need a race specific Encryption Methods skill. Which skill you need depends on which item you are attempting invention on.

For example, doing invention on a Gallente ship requires the Gallente faction skill listed below.

These skills are: Amarr Encryption Methods, Caldari Encryption Methods, Minmatar Encryption Methods, Gallente Encryption Methods, Sleeper Encryption Methods (Reverse Engineering).

The prerequisites for all of these are the following:

- Power Grid management level II
- CPU management level II
- Electronic Upgrades level III
- Science level III
- Hacking level II

The faction Encryption Methods skills are only one of the skills for invention, but it is good to have these learned to V in order to improve the chance of successful invention.

Encryption Methods skill books cannot be bought from NPCs, so you need to either buy these from other players or you can find them in Exploration sites. Depending on the type of item you wish to invent, you will need other scientific skills. Typical skills include:

- Race Specific Starship Engineering
- Electromagnetic Physics
- Electronic Engineering
- Graviton Physics
- High Energy Physics,
- Hydromagnetic Physics,
- Laser Physics,
- Mechanical Engineering,
- Molecular Engineering,
- Nanite Engineering,
- Nuclear Physics,
- Plasma Physics,
- Quantum Physics,
- Rocket Science

The base item you are doing invention on will determine which specific skills you need. For a successful invention job, it is very important to have the required skills learned to as high a level as possible.

Note that it is possible to start an invention job with the required skill injected, but not yet learned to level I. The job will automatically fail on completion, wasting all the materials and time.

The Datacore-related skills are the skills you need in order to get Datacores from Research and Development (R&D) Agents.

For an example, if you want Datacore – Amarrian Starship Engineering you have to have the Amarrian Starship Engineering skill. The number indicates how many you need of the particular datacore.

Datacores

You can setup research projects with R&D agents to get Datacores if you possess the required skill and standing. After choosing the research field, you can check the Research Points (RPs) you are generating from that project in your Journal in the NeoCom. By completing a mission (limited to once per day), you can double the RP output for that day. The amount of RP you get depends on the agent's level, quality, and the level of your relevant Datacore skill.

The exchange rate is **100 RPs + 10 000 ISK per 1 Datacore.**

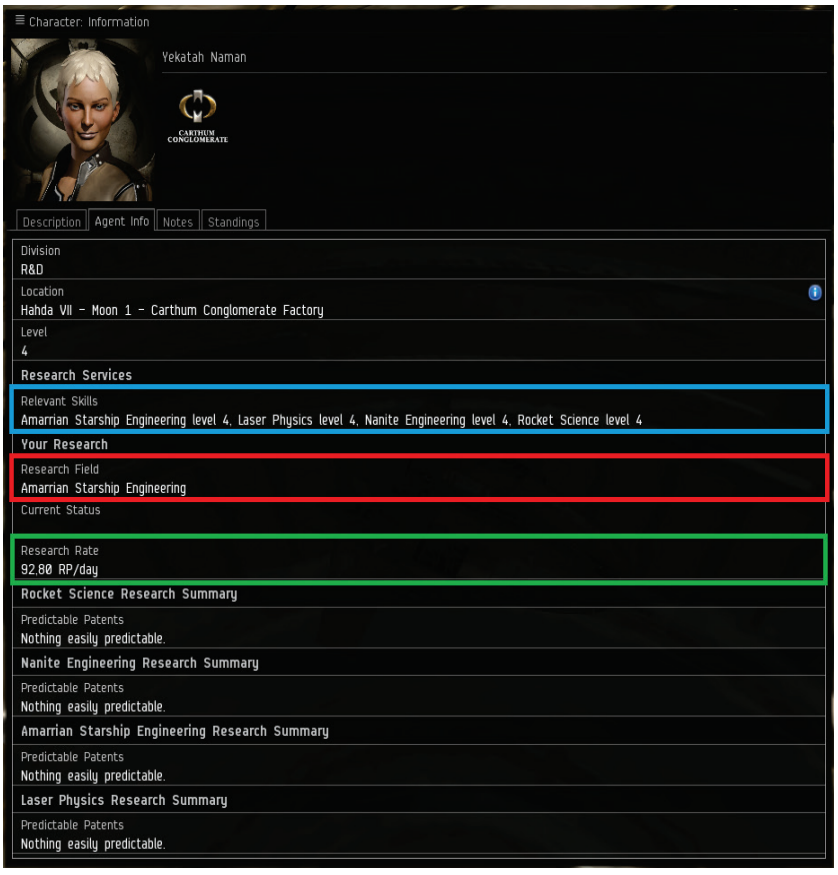
The formula to calculate the exact amount of RP you can get is:

- **((1+(agent EQ/100))*((your skill level+agent level)^2))**

In the formula above:

- **Agent EQ:** the agent's Effective Quality, base quality (20) + your Negotiation skill level *5
- **Your skill level:** the level of the relevant Datacore skill.
- **Agent level:** the level of the chosen agent.

On the chosen agent's info page you can see which research fields he operates in and which skills are required. One agent can operate in one field at a time, so you can produce one type of Datacore per agent research job.



In most cases the goal of the daily mission for a level 4 agent is either to fetch 8100 units of tritanium or to deliver of one 0.1 m^3 item in a few jumps range.

Many people tend to forget that after completing sixteen of any one type of mission, including R&D missions, you will get a Storyline Mission. Storyline missions give you a great boost in standing towards the faction it is run for.

With six R&D agents researching for you, you can have one Storyline mission every three days.

Do not forget that the invention job consumes all materials used in the job even if the invention job fails!

Our current experience shows that the BPC's ME and TE attributes do not affect the chance of success in any way. Neither does your standing with the NPC corporation that owns the station you are running the job in.

The job's outcome is determined when you start it and the person who clicks the finish button has no influence over it, so it does not matter if you or your corp buddy delivers the job.

If you do not use a decryptor, then it will not matter if the BPC has max runs or not, because the Invention now removes one run from the input blueprint copy instead of consuming it entirely.

In short, the decryptor is not essential for invention, but if you use it, it changes the attributes of the Tech II BPC and might also alter the chance of success.

Decryptors

The invented Tech II BPC will have 0 or positive ME and TE values. Successful invention always outputs a maximum-run copy as a baseline, which is then modified by decryptors; max runs have been adjusted to be 1 for T2 ships and Rigs and 10 for all other T2 products

	AMARR	CALDARI	GALLENTE	MINMATAR	Run Modifier	Chance Multiplier	ME Modifier	TE Modifier
	Process Decryptor				**±0**	**+10 %**	**+3**	**+6**
	Accelerant Decryptor				**+1**	**+20 %**	**+2**	**+10**
	Symmetry Decryptor				**+2**	**±0 %**	**+1**	**+8**
	Parity Decryptor				**+3**	**+50 %**	**+1**	**-2**
	Attainment Decryptor				**+4**	**+80 %**	**-1**	**+4**
	Optimized Attainment Decryptor				**+2**	**+90 %**	**+1**	**-2**
	Augmentation Decryptor				**+9**	**-40 %**	**-2**	**+2**
	Optimized Augmentation Decryptor				**+7**	**-10 %**	**+2**	**±0**

As mentioned before, on one hand the success of invention depends on Skills: Encryption Method and the skills needed to get the Datacores.

On the other hand, the chance of success can be further improved by a decryptor.

Finally, there is a default chance of success that depends on what you are attempting to invent.

The Chance Of Success

The default chances are:

- All modules, rigs, ammo and all intact Ancient Relics chance is 34%.
- All Frigates, Destroyers and all malfunctioning Ancient Relics chance is 30%
- Cruisers, Battlecruisers, Mining Barges, Industrials chance is 26%.
- All Battleships and all wrecked Ancient Relics chance is 22%
- (jump) Freighters chance is 18%

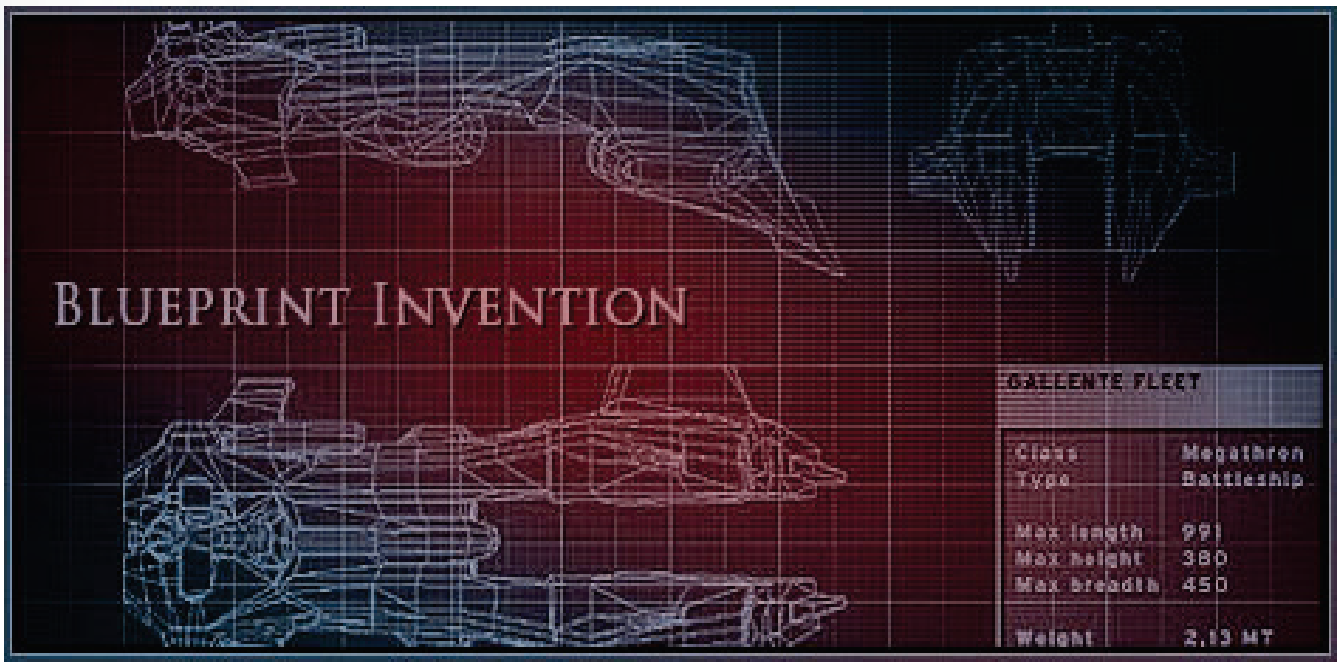
The exact formula is:

Chance of the invention / reverse engineering = Base Item chance * (1 + (Science Skill 1 + Science Skill 2)/30 + (Racial Encryption Method)/40)

For example let's take a gun turret: the default chance is 34%. If the Encryption and the two Science skills are at level 1, and we do not use a decryptor, then we have 37,12% chance of success.

- If the corresponding Encryption skill is at level V then we have 40,52%
- If we further add one of the science skills at level V, then it is 45,05%
- If the other science skill is at level V as well, then it is 49,58%
- If we add a +1 run, 1,2x chance improver decryptor, then it is 59,5%, and the result BPC will have +2 ME and +10 TE

As you can see, the bonuses stack together.



Skill Level	Decryptor Modifier							
Base Chance: 34%	**All modules, rigs, ammo and all intact Ancient Relics**							
	0,6	0,9	1	1,1	1,2	1,5	1,8	1,9
Encryption Skill lvl								
1. Science Skill lvl 4	27,88%	41,82%	46,47%	51,11%	55,76%	69,70%	83,64%	88,29%
2. Science Skill lvl								
Encryption Skill lvl								
1. Science Skill lvl 5	29,75%	44,63%	49,58%	54,54%	59,50%	74,38%	89,25%	94,21%
2. Science Skill lvl								
Base Chance: 30%	**All Frigates, Destroyers and all malfunctioning Ancient Relics**							
	0,6	0,9	1	1,1	1,2	1,5	1,8	1,9
Encryption Skill lvl								
1. Science Skill lvl 4	24,60%	36,90%	41,00%	45,10%	49,20%	61,50%	73,80%	77,90%
2. Science Skill lvl								
Encryption Skill lvl								
1. Science Skill lvl 5	26,25%	39,38%	43,75%	48,13%	52,50%	65,63%	78,75%	83,13%
2. Science Skill lvl								
Base Chance: 26%	**Cruisers, Battlecruisers, Mining Barges, Industrials**							
	0,6	0,9	1	1,1	1,2	1,5	1,8	1,9
Encryption Skill lvl								
1. Science Skill lvl 4	21,32%	31,98%	35,53%	39,09%	42,64%	53,30%	63,96%	67,51%
2. Science Skill lvl								
Encryption Skill lvl								
1. Science Skill lvl 5	22,75%	34,13%	37,92%	41,71%	45,50%	56,88%	68,25%	72,04%
2. Science Skill lvl								
Base Chance: 22%	**All Battleships and all wrecked Ancient Relics**							
	0,6	0,9	1	1,1	1,2	1,5	1,8	1,9
Encryption Skill lvl								
1. Science Skill lvl 4	18,04%	27,06%	30,07%	33,07%	36,08%	45,10%	54,12%	57,13%
2. Science Skill lvl								
Encryption Skill lvl								
1. Science Skill lvl 5	19,25%	28,88%	32,08%	35,29%	38,50%	48,13%	57,75%	60,96%
2. Science Skill lvl								
Base Chance: 18%	**Freighters**							
	0,6	0,9	1	1,1	1,2	1,5	1,8	1,9
Encryption Skill lvl								
1. Science Skill lvl 4	14,76%	22,14%	24,60%	27,06%	29,52%	36,90%	44,28%	46,74%
2. Science Skill lvl								
Encryption Skill lvl								
1. Science Skill lvl 5	15,75%	23,63%	26,25%	28,88%	31,50%	39,38%	47,25%	49,88%
2. Science Skill lvl								

Invention Jobs

One way to run an invention job is to use a slot on a Mobile Lab anchored at your own POS. You do not even need to be at the POS if you have the skills to start the invention job remotely.

If your Mobile Lab is online at your POS, you can start an invention job at any time, but the materials (Datacores, BPC, Decryptors) that are needed for the job must be put manually in the Mobile Lab beforehand.

Once everything is in place, you can start the job from afar with the Scientific Networking skill (Laboratory Operation level IV is a prerequisite). Depending on the networking skill's level, you can start invention jobs in the same system as the POS, at 5, 10, or 20 jumps away, and at level V from 25 jumps from the POS. If you are going to use a Mobile Lab, it is recommended you get to know the different versions well.

A few things that's good to know:

- Mobile Lab jobs can be started ONLY from the corp hangar. Attempting to run the job from your personal hangar will result in a message: Cannot establish contact with the Science & Industry facility. If it is in a different system you might have to travel closer.
- If you leave the corp while you have an active job, your former corp's members are able to take your job's result and the interface.
- If the corp office closes while the job is running, then all the materials are lost.
- If the POS is destroyed while the job is running, it will drop the materials.
- You cannot use another corp's lab.

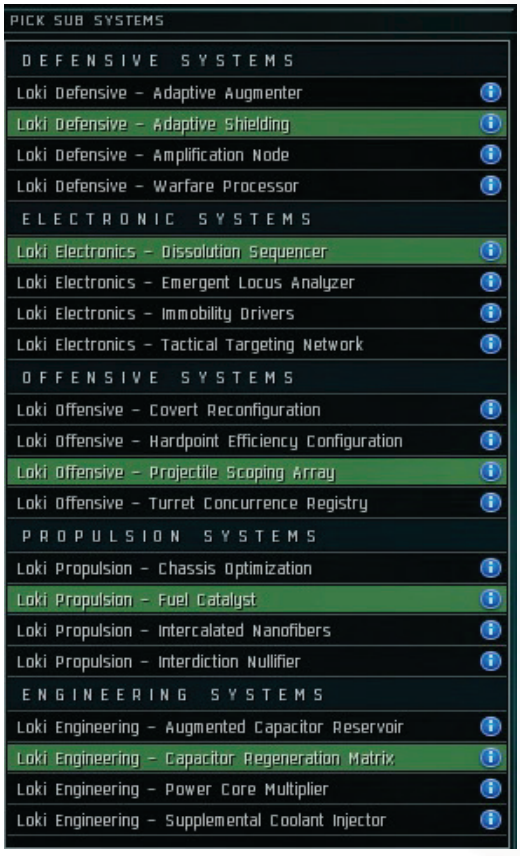
Reverse Engineering - Tech3 (T3)

Strategic Cruisers can be very tempting to manufacture, but to make one it is not as simple as hopping into a Wormhole and killing a few Sleepers. It is way more complicated than that. In fact, building one entirely on your own is nearly impossible. Production of a Tech III ship requires twice the effort, if not more, than the production of a Tech II ship. It takes a lot of components, multiple hard-to-get blueprints and a skilled character. See the chance of success, here.

Production of the hull of a Tech III ship and its subsystems involves multiple stages. Each step differs from the previous one. Ordered by the complexity of the stages, following is an explanation of production of the finished ship down to its core elements:

The Components Of A Complete Tech III Ship

First you need a race specific hull and five different subsystems that give different abilities to the ship.



The five subsystems are: Defensive Subsystem, Offensive Subsystem, Engineering Subsystem, Electronic Subsystem, and Propulsion Subsystem.

Note, that if you wish to change one of the subsystems, you can do it without repackaging the ship, so the other rigs will remain intact.

Tech III Hull And Subsystem Blueprints

Production of the Tech III hull and subsystem blueprints is an art. These blueprints need lots of materials and even more skills just by themselves. The first thing to do is called Reverse Engineering. This is basically a special invention, where you "invent" Tech III subsystems from ancient relics.

The only difference is that you cannot buy the components (from NPCs): Ancient Relics, race specific Hybrid Decryptors, components for the production of Hybrid R.A.M., and Tech III Datacores. You need to get them from Wormhole Complexes. Add to that the fact that the hybrid interface is damaged in the process.

Reverse engineering is technically a research job that you can do in an Experimental Laboratory POS module or on a Caldari Research outpost. Reverse engineering cannot be done at an NPC stations!

Production Of The Ship's Hull And Subsystems

For the production of these you need two things: a hull or subsystem blueprint (produced with Reverse Engineering, we will get back to this later) and hybrid components. Subsystem and Tech III hull pieces can be produced in a Subsystem Assembly Array POS module (anchorable in High-Sec), or on an outpost. NPC stations are not capable of this type of production.

The Classes Of Fullerite Gases

At the moment, there are four different classes of fullerite gases which are categorized by their rarity. The rarer the gas, the harder it is to get. Usually there are several gas clouds at one spot which each yield different types of gases.

Fullerite Gases				
Type	**Size**	**I.**	**II:**	**III:**
A	1 m^3	C-50	C-60	C-70
B	2 m^3	C-28	C-72	C-84
C	5 m^3	C-32	C-320	-
D	10 m^3	C-540	-	-

You can harvest them like common gases, but the clouds, found by exploring Gas sites, may be defended by Sleepers.

Usually you can find the following defenders in these clouds: (C = Cruiser, F = Frigate)

Name Of The Site	Possible Sleeper Spawn	Possible Gas Cloud #1	Harvestable Amount (may vary)	Possible Gas Cloud #2	Harvestable Amount (may vary)
Token Perimeter Reservoir	1C 2F	C-60	3,000 m^3	C-70	1,500 m^3
Barren Perimeter Reservoir	5F	C-50	3,000 m^3	C-60	1,500 m^3
Sizable Perimeter Reservoir	1F?	C-50	1,500 m^3	C-84	12,000 m^3
Minor Perimeter Reservoir	2C	C-70	3,000 m^3	C-72	6,000 m^3
Vast Frontier Reservoir	?	C-32	50,000 m^3	C-28	4,000 m^3
Ordinary Perimeter Reservoir	5 sentry	C-72	12,000 m^3	C-84	6,000 m^3
Vital Core Reservoir	2BS 2F	C-320	500 m^3	C-540	6,000 m^3
Bountiful Frontier Reservoir	2C 3F	C-32	5,000 m^3	C-28	10,000 m^3
Instrumental Core Reservoir	2BS	C-320	6,000 m^3	C-540	500 m^3

Venture Is Back!

We can be sure: these gas clouds won't damage our ship: so, we need no special and Battle(hardened)cruiser for the job. Since the Venture have only two turret slots, you can think: "It's worser than the…" And you are wrong! Since this little yello' have 100% yield bonus on his gas-turrets and have 5% cycle time decrease factor by ship skill level! So 2 turrets x 2 yield bonus and a 0,75x cycle time bonus means cca: 6-7 turrets' yield on a normal battlecruiser! And the cherry on the top: this little Bee(ast) have 5000m^3 ore/gas hold too!

Since this is a "glass ship", never ever go to harvest a Drug-gas field with it. Please note: the sleepers can erase it from the WH with a single shot, so, be aware, when the sleepers are incoming, just turn around (ehm… don't forget to passive align ;-)) and warp away!

Hybrid Polymer Reactions

The production of Hybrid Polymers is done with the following: basic minerals (such as zydrine, megacyte, etc.), Fullerite gases (harvested in wormhole space), a 'reaction' POS set up in Low-Sec or 0.0, and a polymer reaction blueprint (purchased on the market).

Reaction	Materials Needed					End Product
	Mineral		Fullerite Gases			Hybrid Polymer
C3-FTM Acid Reaction	80 x Megacyte		100 x Fullerite C-84	100 x Fullerite C-540		100 x C3-FTM Acid
Carbon-86 Epoxy Resin Reaction	30 x Zydrine		100 x Fullerite C-32	100 x Fullerite C-320		160 x Carbon-86 Epoxy Resin
Fullerene Intercalated Graphite Reaction	600 x Mexallon		100 x Fullerite C-60	100 x Fullerite C-70		120 x Fullerene Intercalated Graphite
Fulleroferrocene Reaction	1000 x Tritanium		200 x Fullerite C-50	100 x Fullerite C-60		1000 x Fulleroferrocene
Graphene Nanoribbons Reaction	400 x Nocxium		100 x Fullerite C-28	100 x Fullerite C-32		120 x Graphene Nanoribbons
Lanthanum Metallofullerene Reaction	200 x Nocxium		100 x Fullerite C-70	100 x Fullerite C-84		120 x Lanthanum Metallofullerene
Methanofullerene Reaction	300 x Isogen		100 x Fullerite C-70	100 x Fullerite C-72		160 x Methanofullerene
PPD Fullerene Fibers Reaction	800 x Pyerite		300 x Fullerite C-50	100 x Fullerite C-60		250 x PPD Fullerene Fibers
Scandium Metallofullerene Reaction	25 x Zydrine		100 x Fullerite C-72	100 x Fullerite C-28		160 x Scandium Metallofullerene

Hybrid Components

For the production of hybrid components you need hybrid polymers and a hybrid component BPO which you can purchase on the market. Production can be set up at a POS or at a station (including NPC stations). You can produce the following hybrid components (the output component matches the name of the blueprint):

Blueprint Name / Hybrid Component	
	Electromechanical Interface Nexus Blueprint
	Emergent Neurovisual Interface Blueprint
	Fullerene Intercalated Sheets Blueprint
	Fulleroferrocene Power Conduits Blueprint
	Metallofullerene Plating Blueprint
	Nanowire Composites Blueprint
	Neurovisual Output Analyzer Blueprint
	Optimized Nano-Engines Blueprint
	Reconfigured Subspace Calibrator Blueprint
	Reinforced Metallofullerene Alloys Blueprint
	Warfare Computation Core Blueprint

Ancient Salvage Materials

	Cartesian Temporal Coordinator
	Central System Controller
	Defensive Control Node
	Electromechanical Hull Sheeting
	Emergent Combat Analyzer
	Emergent Combat Intelligence
	Fused Nanomechanical Engines
	Heuristic Selfassemblers
	Jump Drive Control Nexus
	Melted Nanoribbons
	Modified Fluid Router
	Neurovisual Input Matrix
	Powdered C-540 Graphite
	Resonance Calibration Matrix
	Thermoelectric Catalysts

A Tech III Strategic Cruiser – Step by Step

On the following page you can see the process of producing a Tech III ship. The whole process may include different industrial-based corporations, but some stages can be done by smaller teams, and some even alone.

Hybrid Polymer Reaction				
From What		**How**		**End Product**
From	**Found In**	**POS Module Name**	**Where**	
Hybrid Polymer Reaction BPO	Empire / Market	Normal+2x Biochemical Silo ⩔ Polymer Reaction Array ⩔ Polymer Silo	0.0 and / or Lowsec (0.3 or below)	Hybrid Polymer
Regular Minerals	Empire / Market			
2x Gases / Polymers	WH Gas Site			

Hybrid Component Manufacturing				
From	**Found In**	**Manufacturing In**	**Where**	**End Product**
Hybrid Polymer	Manufacturing / Market	Station – Assembly Line	Highsec Lowsec 0.0	Hybrid Component
Hybrid Component Blueprint	Empire / Market	POS – Component Assembly Array	Lowsec (0.3 or below) 0.0	
Sleeper NPC Salvage Materials	WH Plex / Anomaly			

Subsystem / Hull BPC				
From	**Found In**	**Manufacturing In**	**Where**	**End Product**
Ancient Relics	WH Relic Site	Station / POS Experimental Laboratory	Highsec Lowsec 0.0	T3 Subsystem / Hull BPC
T3 Subsystem Spec. Datacore	WH Data Site			
R.A.M. – Hybrid Components	WH Data Site			
Regular Datacores	R&D Agents / Market			

Subsystem / Hull Manufacturing			
From	**Manufacturing In**	**Where**	**End Product**
Hybrid Component	Station – Assembly Line POS – Subsystem Assembly Array	High Sec Low Sec 0.0	T3 Subsystem / Hull
Subsystem / Hull BPC			

Assemble The Tech III Strategic Cruiser			
From	**Manufacturing In**	**Where**	**End Product**
T3 Hull	Assemble Ship	High Sec Low Sec 0.0	T3 Strategic Cruiser
Subsystems (One of Each Type)			

Reverse Engineering Skills

For the invention of the Tech III subsystems BPC you need the Sleeper Encryption Methods skill. In addition, you need a varying set of skills for each subsystem. Let's take Propulsion Subsystem as an example.

Production of the Propulsion Subsystem BPC (Thruster Sections ancient relic) requires:

- Sleeper Encryption Methods learned to level I
- Propulsion Subsystem Technology learned to level I
- Graviton Physics learned to level IV
- Propulsion Subsystems Engineering learned to level III (for the required Datacore I)
- Rocket Science learned to level III (for the required Datacore II)

The other subsystems require similar skills. It is recommended to take a look at the relics for which special skills you will need. Generally speaking, the Datacore I skill will be the engineering skill of the relevant subsystem, and the Datacore II skill will be a Science skill.

The R.A.M. always needs Hybrid Technology skills. The first skill required for any Tech III invention is always Sleeper Encryption Methods.

The second skill required is the current subsystem's technology (e.g. Defensive Subsystem Technology skill). The third skill required is always a skill in the science category.

Skill Name	Pre-Req. Skills
Sleeper Encryption Methods	Science 5, Metallurgy 4, Research 4
Offensive Subsystem Technology	Research 5, Science 5, Power Grid management 5, High Energy Physics 4
Propulsion Subsystem Technology	Research 5, Science 5, Power Grid management 5, Graviton Physics 4
Electronic Subsystem Technology	Research 5, Science 5, CPU management 5, Electronic Power Grid management 4
Engineering Subsystem Technology	Research 5, Science 5, Power Grid management 5, High Energy Physics 4
Defensive Subsystem Technology	Science 5, Nanite Power Grid management 4, CPU management 5

Subsystem Production Skills

The Starship Engineering skill required is specific to the Faction you are working with. For example, here are the requirements for a Loki Propulsion Chassis Optimization Subsystem:

- Minmatar Starship Engineering IV
- Jury Rigging V
- Cruiser Construction IV

Hybrid Components Production Skills

The required skills vary for each component. For the production of the subsystem mentioned above you need the following:

- Electromagn. Physics II
- High Energy Physics II

Hull Production Skills

These vary depending on the race:

- Industry level V
- Race Specific Starship Engineering level V
- Cruiser Construction level V
- Mechanical Engeenering level IV

An Example: Loki

Let's build a Loki (a Minmatar Tech III strategic cruiser) by way of example of the above:

Production time: approximately a day and a half

Required Skills:

- **Industry V** (Rank x1)
- **Minmatar Starship Engineering V** (Rank x5)
- **Cruiser Construction V** (Rank x5)
- **Mechanical Engineering IV** (Rank x5)

Materials for one Loki (hull!):

- 1 x **Loki Blueprint**
- 6 x different **Hybrid Component Blueprints** (NPC market)
- 8 x different **Hybrid Polymer Reactions** (BP from wormholes)
- 9 x different **Sleeper gases**
- A couple of different **minerals**
- **Starship R.A.M.**

Defensive Subsystems

	Cargo	Shield						Armor					Slots			Sig	PG	CPU
		HP						HP										
	m³		%				sec.		%							m	MW	tf
Legion Defensive - Adaptive Augmenter	300	2200	0	87.5	70	20	1620	3300	50	80	62.5	35	1	0	1	154	0	0
	4% bonus to all armor resistances per level 10% bonus to Remote Armor Repairer effectiveness per level																	
Legion Defensive - Augmented Plating	340	2500	0	87.5	70	20	1620	3750	50	80	62.5	35	0	0	2	147	0	0
	10% bonus to armor hitpoints per level.																	
Legion Defensive - Nanobot Injector	300	2400	0	87.5	70	20	1620	3600	50	80	62.5	35	0	0	2	140	0	0
	10% bonus to armor repairer effectiveness per level																	
Legion Defensive - Warfare Processor	300	2200	0	87.5	70	20	1620	3300	50	80	62.5	35	1	0	1	140	0	0
	5% bonus to effectiveness of Armored Warfare Links per subsystem skill level Role Bonus: Can fit Warfare Links																	
Loki Defensive - Adaptive Augmenter	270	2200	75	50	40	60	1620	3300	90	10	25	67.5	0	1	1	130	150	0
	4% bonus to all armor resistances per level.																	
Loki Defensive - Adaptive Shielding	280	3100	75	50	40	60	1620	2050	90	10	25	67.5	1	1	0	143	0	50
	4% bonus to all shield resistances per level 10% bonus to shield transporter effectiveness per level																	
Loki Defensive - Amplification Node	300	2500	75	50	40	60	1620	1650	90	10	25	67.5	0	1	1	130	0	0
	5% reduction in signature radius per level.																	
Loki Defensive - Warfare Processor	200	3100	75	50	40	60	1620	2050	90	10	25	67.5	1	1	0	130	0	0
	5% bonus to effectiveness of Skirmish Warfare Links per subsystem skill level Role Bonus: Can fit Warfare Links																	
Proteus Defensive - Adaptive Augmenter	320	2100	0	50	85	60	1620	3200	50	10	83.75	67.5	1	0	1	176	0	0
	4% bonus to all armor resistances per level. 10% bonus to Remote Armor Repairer effectiveness per level																	
Proteus Defensive - Augmented Plating	280	2400	0	50	85	60	1620	3650	50	10	83.75	67.5	0	0	2	168	0	0
	10% bonus to armor hitpoints per level.																	
Proteus Defensive - Nanobot Injector	300	2300	0	50	85	60	1620	3500	50	10	83.75	67.5	0	0	2	160	0	0
	10% bonus to armor repairer effectiveness per level																	
Proteus Defensive - Warfare Processor	220	2100	0	50	85	60	1620	3200	50	10	83.75	67.5	1	0	1	160	0	0
	5% bonus to effectiveness of Information Warfare Links per subsystem skill level Role Bonus: Can fit Warfare Links																	
Tengu Defensive - Adaptive Shielding	420	3250	0	50	70	80	2160	2150	50	10	62.5	86.25	1	1	0	165	0	0
	4% bonus to all shield resistances per level 10% bonus to shield transporter effectiveness per level																	
Tengu Defensive - Amplification Node	440	3550	0	50	70	80	1620	2350	50	10	62.5	86.25	0	2	0	150	0	0
	10% bonus to shield booster effectiveness per level																	
Tengu Defensive - Supplemental Screening	410	3750	0	50	70	80	2430	2500	50	10	62.5	86.25	0	2	0	157	0	0
	10% bonus to shield hitpoints per level.																	
Tengu Defensive - Warfare Processor	290	3250	0	50	70	80	1620	2150	50	10	62.5	86.25	1	1	0	150	0	0
	5% bonus to effectiveness of Siege Warfare Links per subsystem skill level Role Bonus: Can fit Warfare Links																	

Electronic Subsystems

	Targeting	CPU	Scan	Sensor Strength				Slots		
	km	tf	mm	LADAR	Magneto.	RADAR	Gravim.			
				points						
Legion Electronics - Dissolution Sequencer	65	380	260	0	0	17	0	0	4	0
	15% bonus to ship sensor strength 5% bonus to max targeting range per level.									
Legion Electronics - Emergent Locus Analyzer	55	380	280	0	0	17	0	1	3	0
	10% increase to scan strength of probes per level. 20% bonus to range and velocity of tractor beams per level. Role Bonus: -99% reduced CPU need for Scan Probe Launchers. +10 Virus Strength to Relic and Data Analyzers.									
Legion Electronics - Energy Parasitic Complex	55	375	280	0	0	13	0	1	3	0
	10% bonus to energy vampire and energy neutralizer transfer amount per level									
Legion Electronics - Tactical Targeting Network	60	400	255	0	0	15	0	0	4	0
	15% bonus to scan resolution per level									
Loki Electronics - Dissolution Sequencer	60	335	275	17	0	0	0	0	3	1
	15% bonus to ship sensor strength 5% bonus to max targeting range per level.									
Loki Electronics - Emergent Locus Analyzer	50	335	300	17	0	0	0	0	4	0
	10% increase to scan strength of probes per level. 20% bonus to range and velocity of tractor beams per level. Role Bonus: -99% reduced CPU need for Scan Probe Launchers. +10 Virus Strength to Relic and Data Analyzers.									
Loki Electronics - Immobility Drivers	50	320	300	13	0	0	0	0	3	1
	30% bonus to stasis webifier range per level									
Loki Electronics - Tactical Targeting Network	55	355	260	15	0	0	0	0	4	0
	15% bonus to scan resolution per level									
Proteus Electronics - Cpu Efficiency Gate	65	360	225	0	17	0	0	0	3	1
	5% bonus to CPU per level									
Proteus Electronics - Dissolution Sequencer	70	410	245	0	19	0	0	0	3	1
	15% bonus to ship sensor strength 5% bonus to max targeting range per level.									
Proteus Electronics - Emergent Locus Analyzer	60	410	270	0	19	0	0	0	3	1
	10% increase to scan strength of probes per level. 20% bonus to range and velocity of tractor beams per level. Role Bonus: -99% reduced CPU need for Scan Probe Launchers. +10 Virus Strength to Relic and Data Analyzers.									
Proteus Electronics - Friction Extension Processor	60	375	270	0	15	0	0	0	3	1
	10% bonus to warp disruptor and warp scrambler range per level.									
Tengu Electronics - CPU Efficiency Gate	65	420	210	0	0	0	18	0	3	1
	5% bonus to CPU per level.									
Tengu Electronics - Dissolution Sequencer	75	475	235	0	0	0	20	0	3	1
	15% bonus to ship sensor strength 5% bonus to targeting range per level.									
Tengu Electronics - Emergent Locus Analyzer	65	475	250	0	0	0	20	0	4	0
	10% increase to scan strength of probes per level. 20% bonus to range and velocity of tractor beams per level. Role Bonus: -99% reduced CPU need for Scan Probe Launchers. +10 Virus Strength to Relic and Data Analyzers.									
Tengu Electronics - Obfuscation Manifold	70	460	250	0	0	0	16	0	4	0
	12.5% bonus to ECM target jammer optimal range per level.									

Engineering Subsystems

	Powergrid	Max. Capacitor	Cap. Recharge Time	Slots			Hardpoints		Drones	
	MW	GJ	sec.						m^3	Mbit/sec
Legion Engineering - Augmented Capacitor Reservoir	1125	2225	415 sec.	1	0	2	0	1	0	0
	5% bonus to capacitor capacity per level.									
Legion Engineering - Capacitor Regeneration Matrix	1290	2225	415 sec.	0	0	3	0	0	0	0
	5% bonus to capacitor recharge time per level.									
Legion Engineering - Power Core Multiplier	1200	1575	415 sec.	1	0	2	0	1	0	0
	5% bonus to power output per level.									
Legion Engineering - Supplemental Coolant Injector	1290	1575	415 sec.	0	0	3	0	0	0	0
	5% Reduction in the amount of heat damage absorbed by modules per level.									
Loki Engineering - Augmented Capacitor Reservoir	950	1225	415 sec.	1	0	2	1	1	0	0
	5% bonus to capacitor capacity per level.									
Loki Engineering - Capacitor Regeneration Matrix	750	2100	415 sec.	0	1	2	0	0	0	0
	5% bonus to capacitor recharge time per level.									
Loki Engineering - Power Core Multiplier	1050	1225	415 sec.	1	0	2	1	1	0	0
	5% bonus to power output per level.									
Loki Engineering - Supplemental Coolant Injector	950	1225	415 sec.	0	1	2	0	0	0	0
	5% Reduction in the amount of heat damage absorbed by modules per level.									
Proteus Engineering - Augmented Capacitor Reservoir	1095	1400	415 sec.	1	0	2	0	0	100	25
	5% bonus to drone MWD speed per level 7.5% bonus to drone hitpoints per level									
Proteus Engineering - Capacitor Regeneration Matrix	1050	1850	415 sec.	0	1	2	0	0	0	0
	5% Reduction to capacitor recharge time per level.									
Proteus Engineering - Power Core Multiplier	1165	1400	415 sec.	1	0	2	0	1	0	0
	5% bonus to power output per level.									
Proteus Engineering - Supplemental Coolant Injector	1095	1400	415 sec.	0	1	2	0	0	0	0
	5% Reduction in the amount of heat damage absorbed by modules per level.									
Tengu Engineering - Augmented Capacitor Reservoir	600	1225	415 sec.	1	0	2	1	0	0	0
	5% bonus to capacitor capacity per level.									
Tengu Engineering - Capacitor Regeneration Matrix	825	2100	415 sec.	0	0	3	0	0	0	0
	5% bonus to capacitor recharge time per level.									
Tengu Engineering - Power Core Multiplier	555	1225	415 sec.	1	0	2	0	1	0	0
	5% bonus to power output per level.									
Tengu Engineering - Supplemental Coolant Injector	825	1225	415 sec.	0	0	3	0	0	0	0
	5% Reduction in the amount of heat damage absorbed by modules per level.									

Offensive Subsystems

	Drones		Slots			Hardpoints		CPU	PG	Max Capacitor
	m³	Mbit/sec						tf	MW	GJ
Legion Offensive - Assault Optimization	0	0	5	0	1	5	0	40	0	0
	5% bonus to heavy assault missile damage per level 5% bonus to missile launcher rate of fire per level									
Legion Offensive - Covert Reconfiguration	0	0	5	1	0	0	4	0	0	0
	10% bonus to medium energy turret capacitor use per level Role Bonus: 100% reduction in Cloaking Device CPU use Notes: Can fit covert ops cloaks and covert cynosural field generators. Cloak reactivation delay reduced to 5 seconds.									
Legion Offensive - Drone Synthesis Projector	200	50	5	1	0	0	3	0	0	0
	10% bonus to medium energy turret capacitor use per level 10% bonus to drone damage per level 7.5% bonus to drone hitpoints per level									
Legion Offensive - Liquid Crystal Magnifiers	0	0	5	0	1	0	5	0	0	0
	10% bonus to medium energy turret capacitor use per level 10% bonus to medium energy turret damage per level 10% bonus to medium energy turret optimal range per level									
Loki Offensive - Covert Reconfiguration	0	0	5	0	1	0	4	0	0	0
	5% bonus to medium projectile turret rate of fire per level Role Bonus: 100% reduction in Cloaking Device CPU use Notes: Can fit covert ops cloaks and covert cynosural field generators. Cloak reactivation delay reduced to 5 seconds.									
Loki Offensive - Hardpoint Efficiency Configuration	80	40	5	0	1	3	3	50	0	0
	7.5% bonus to medium projectile turret rate of fire per level 7.5% bonus to missile launcher rate of fire per level									
Loki Offensive - Projectile Scoping Array	50	25	5	0	1	0	5	0	0	0
	7.5% bonus to medium projectile turret rate of fire per level 10% bonus to medium projectile falloff per level.									
Loki Offensive - Turret Concurrence Registry	0	0	5	0	1	0	5	0	0	0
	10% bonus to medium projectile turret damage per level 10% bonus to medium projectile turret optimal range per level 7.5% bonus to medium projectile turret tracking per level									
Proteus Offensive - Covert Reconfiguration	0	0	5	0	1	0	4	0	0	0
	5% bonus to medium hybrid turret damage per level Role Bonus: 100% reduction in Cloaking Device CPU use Notes: Can fit covert ops cloaks and covert cynosural field generators. Cloak reactivation delay reduced to 5 seconds.									
Proteus Offensive - Dissonic Encoding Platform	0	0	5	0	1	0	5	0	0	0
	10% bonus to medium hybrid turret damage per level 10% bonus to medium hybrid turret falloff per level 7.5% bonus to medium hybrid turret tracking per level									
Proteus Offensive - Drone Synthesis Projector	125	75	5	0	1	0	3	0	0	0
	5% bonus to medium hybrid turret damage per level 10% bonus to drone damage per level 7.5% bonus to drone hitpoints per level									
Proteus Offensive - Hybrid Propulsion Armature	75	50	5	0	1	0	5	0	0	0
	10% bonus to medium hybrid turret damage per level 10% bonus to medium hybrid turret falloff per level									
Tengu Offensive - Accelerated Ejection Bay	0	0	5	1	0	5	0	33	0	0
	5% bonus to Kinetic Missile Damage per level 7.5% bonus to Heavy, Heavy Assault and Rapid Light missile launcher rate of fire per level 10% bonus to Heavy Missile and Heavy Assault missile velocity per level									
Tengu Offensive - Covert Reconfiguration	0	0	5	1	0	4	0	0	0	0
	5% bonus to missile launcher rate of fire per level Role Bonus: 100% reduction in Cloaking Device CPU use Notes: Can fit covert ops cloaks and covert cynosural field generators. Cloak reactivation delay reduced to 5 seconds.									
Tengu Offensive - Magnetic Infusion Basin	0	0	5	1	0	0	5	0	365	450
	5% bonus to medium hybrid turret damage per level 20% bonus to medium hybrid turret optimal range per level									
Tengu Offensive - Rifling Launcher Pattern	50	25	5	1	0	5	0	33	0	0
	10% bonus to ECM target jammer strength per level 5% bonus to Heavy Assault Launcher, Heavy Missile Launcher and Rapid Light Missile Launcher Rate of Fire per level									

Propulsion Subsystems

	Max. speed	Inertia Modifier	Slots	
	m/sec			
Legion Propulsion - Chassis Optimization	170	0.619	1	0
	5% bonus to max velocity per level.			
Legion Propulsion - Fuel Catalyst	170	0.507	1	0
	10% bonus to afterburner speed per level.			
Legion Propulsion - Interdiction Nullifier	165	0.732	0	0
	5% increased agility per level Role Bonus: Immunity to non-targeted interdiction			
Legion Propulsion - Wake Limiter	165	0.563	1	0
	5% reduction in microwarpdrive signature radius penalty per level.			
Loki Propulsion - Chassis Optimization	180	0.612	1	0
	5% bonus to max velocity per level.			
Loki Propulsion - Fuel Catalyst	180	0.5	1	0
	10% bonus to afterburner speed per level.			
Loki Propulsion - Intercalated Nanofibers	175	0.556	1	0
	5% increased agility per level.			
Loki Propulsion - Interdiction Nullifier	165	0.723	0	0
	5% increased agility per level Role Bonus: Immunity to non-targeted interdiction			
Proteus Propulsion - Gravitational Capacitor	160	0.527	0	1
	15% bonus to warp speed per level 15% reduction in capacitor need when initiating warp per level			
Proteus Propulsion - Interdiction Nullifier	140	0.762	0	0
	5% increased agility per level Role Bonus: Immunity to non-targeted interdiction			
Proteus Propulsion - Localized Injectors	180	0.586	1	0
	15% reduction in afterburner and microwarpdrive capacitor consumption per level			
Proteus Propulsion - Wake Limiter	140	0.586	1	0
	5% reduction in microwarpdrive signature radius penalty per level.			
Tengu Propulsion - Fuel Catalyst	160	0.387	1	0
	10% bonus to afterburner speed per level.			
Tengu Propulsion - Gravitational Capacitor	175	0.387	1	0
	15% bonus to warp speed per level 15% reduction in capacitor need when initiating warp per level			
Tengu Propulsion - Intercalated Nanofibers	165	0.43	1	0
	5% increased agility per level.			
Tengu Propulsion - Interdiction Nullifier	155	0.559	0	0
	5% increased agility per level Role Bonus: Immunity to non-targeted interdiction			

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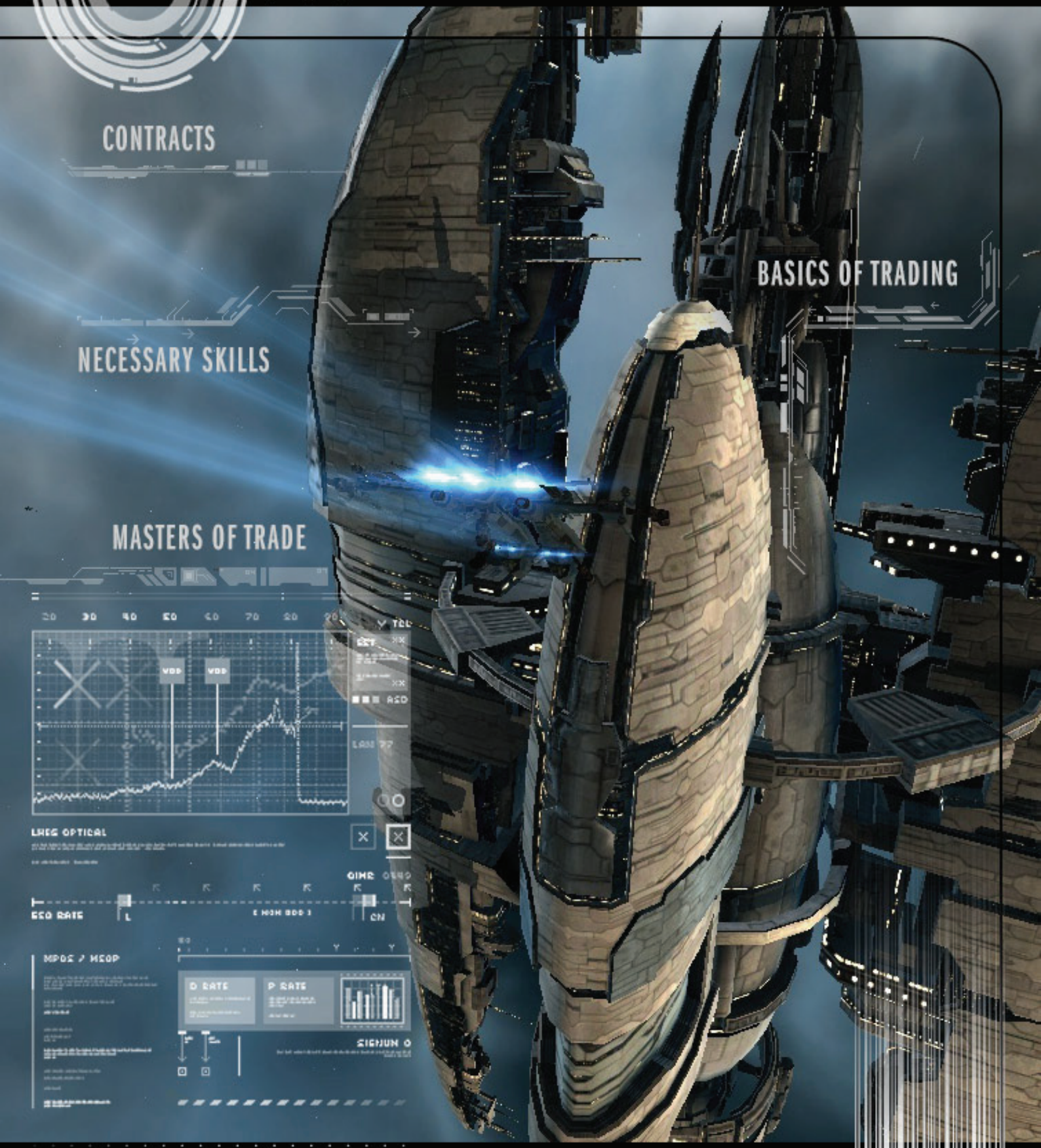
TRADING

CHAPTER 8



EVE

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Trading 101

Introduction

Trading is probably the most lucrative and dangerous activity in EVE. It is possible to earn millions of ISK, but you can lose it in an instant. However, there are ways to offset the risks. You need to know the fundamental principles or certain failure awaits you. Learn the basics of those fundamental principles here, so you can be a (more) successful trader in the world of EVE.

The Economy

Most players have some idea of how to earn ISK. Only a few, however, fully understand the basic concepts behind really making money. The general idea is to buy low and sell high. This part is simple. Anyone can load up a hauling ship, make a couple of jumps, and call themselves a trader. While most pilots see this as a success, there are some points which differentiate a trader from a successful trader.

Time Is Money

Trading takes time. The amount of time you spend on trading directly affects how much you earn at the end of the day. For example, a trade run that takes an hour to fly 20 jumps to make you six million ISK is not as profitable as a repeatable run that requires three jumps, five minutes and with each trip giving you two million ISK. Obvious, isn't it? You would be surprised. Most pilots would take the long run and the big income in one run, and avoid the shorter ones. The point is that you can make more money if you just do the math.

As a rule, you should always do what earns you the most. For example: you regularly run level three missions in a battlecruiser, but you would like to build yourself a battleship which allows you to do level four missions. You get the necessary BPC and then begin to mine because the ore is free this way, right? Wrong! If you have to mine for a week to earn 100 million ISK, you might easily earn, in that same amount of time, 150 million doing missions instead.

Running the missions allows you to buy the ship one week earlier (or the necessary minerals to build it at least) and you will still have some money left over. Therefore you are actually losing money doing the mining.

Size Matters

Size, in regards to the physical volumes of the goods you trade with, is also important. On first inspection, some items seem very profitable, but if you look more carefully you will notice that this is not always the case.

Different products have different sizes, and if you know these, you can decide if it is worth hauling them or not. In a way, you are renting the cargo hold of your ship, so minimize that expense as much as possible.

Take Construction Blocks as an example. This is a typical rookie-trap. You might see a 'buy order' for 700 ISK per unit nearby, and you buy them for 600 ISK at your station. Is it a good deal? No! Every block takes 1.5 m^3 in volume, so that cuts down the amount that you can carry in a trip.

Remember, you are renting your cargo hold, so this 'lucrative' block has only 25 ISK per unit of cargo space instead of 100 ISK/space. Conversely, Antibiotics have a volume of 0.5 m^3, and you get only 18-36 ISK per unit. For each m^3, you can carry two units of Antibiotics, which results in a net profit of 36-72 ISK for every m^3 of your cargo. This is much better than the blocks. The point is to know the goods.

Know The Region

Knowledge is power. Knowledge about the current goods and the supply and demand of them in a given area can make you rich. Take the time to learn your neighbourhood. Look at the market history in that area on items of interest. Learn the buy and sell prices and the order amounts. Take notes about the prices and the demand and supply volumes.

Note that there is a trap here. A lot of times you may find a product that buys low and sells high and is nearby. It may seems a great business. But if the buyer only needs 176 pieces, while the supplier has 157,000 units for sale (or the other way around) then it will not be worth the effort. The point is that you must do your homework.

Marketplaces

Everybody needs a place where they can trade. But sometimes the 'regular' trade channels and trade hubs are infected by scammers. The solution is to use 'secure' trade channels for your business. Why are these channels and mailing lists useful?

Simply that they are moderated, used by experienced EVE players who are willing to help you, and using these channels can help you to understand how ISK is made on a large scale. Some handy links follow:

- **The 'Legit Trading' Channel:** wiki.eveonline.com/en/wiki/Legit_Trading
- **The 'Bulk Trade' Mailing List:** wiki.eveonline.com/en/wiki/Bulk_Trade_(Mailing_list)
- **The 'Character Market' Channel:** wiki.eveonline.com/en/wiki/Character_Market(chat_channel)

Basic Trading

Skills

You will need a wide variety of skills to be a successful trader. It is not as complicated as being a fighter or a miner, but the time you need to invest in training is still significant. Starting out, access to the higher level skills will be very limited (as opposed to other professions in EVE), but later on you can gain them easily with just a little effort. With a bit of forethought, you can create a character that has the basic skills. This gives you the opportunity to grow quickly. These skills are as follows:

- **Frigate**: A prerequisite for using bigger ships, and this applies especially to the industrial ships.
- **Navigation**: A prerequisite for higher level skills, and also for speed and agility which is important when flying large, bulky hauling ships.
- **Mechanic**: Needed for fitting modules and cargo hold expanders.
- **Trade**: A prerequisite for most of the higher level trade skills, and also for the ability to put up more buy and sell orders.
- **Industrial**: This race-specific Spaceship Command skill is required in order to fly industrial ships. For example, in order to fly the Iteron class ships, you need the Gallente Industrial skill.

Note: these are fundamental abilities only; they are necessary starting skills to further your development.

Equipment

In the beginning, you will be limited to using the most basic equipment because of your lack of both skills and cash. A fast frigate, some cargo expanders, and an afterburner or microwarpdrive will suit you very well. Don't worry as this will change quickly. As cash flows in, you can develop your skills, upgrade your ships to gain more cargo space, and deal in more expensive products. Every trader has their own preference as to what equipment to utilize, so experiment and find what is most profitable for you.

The most important, in my opinion, are modules that increase your velocity and increase cargo capacity. Choose an industrial ship and buy it! The Bestower or the lower-class Iterons are good choices, depending on your starting skills. The Iteron Mark V is the ideal transport as it has an enormous cargo hold.

Be prepared to learn Gallente Industrial level V in order to fly it though. Sometimes an industrial ship or a frigate is not the best choice. Many successful merchants are flying different cruisers, destroyers or interceptors. All of these ships have their advantages, but most beginner traders do not have either the skills or money to buy them. The point is that as you advance in trading and grow in skills, you should fly different ships depending on the cargo and destination.

Money

This is the biggest obstacle: it takes money to make money, but how can you make money when you start out with no money? Well, trading is not an option. You can either mine, run agent missions or, if you are particularly brave, try pirating. I recommend doing missions. In a fast ship, you can make several million in just a couple of days, even with the most basic agents.

If mining is more your style, then invest in mining lasers and use them. No matter what, you will need a few million ISK to be viable as a trader. It can be done with less money, but it takes time to build up more. If you have made friends, ask them to invest some money in your venture. Make sure you pay them back though, on time and without complications, or you may not be friends in the future!

The Market

The market is where you will buy and sell most of your items. Whatever you cannot trade on the market will be sold or auctioned off through the use of contracts.

These are some of the things that cannot be sold on the market:

- Blueprint copies
- Blueprint originals when they are researched or were used for production

The golden rule: If you see a buy or sell order for an item while browsing the market, and you have checked to 'show only available items in the region', that means you can buy or sell that item right now. Items that are not listed may or may not have any demand in that region of space.

The market screen allows you to sort commodities by the number of jumps, the volume available, cost per unit, and location according to the limitation of region, solar system or station. Be aware of this. Make sure when you buy (or sell) something, you have not bought region-wide if you did not intend to.

The market tool offers the often disregarded, but extremely useful history tab; it provides information about the price and the volume of an item over varying amounts of time. Use it! This history will let you know if the price you are paying (or selling for) is in line with current trends and, just as importantly, how much of the item is moving. Use it to determine the state of the market, how many competitors you have, or if you are the only one who is selling that particular product.

"Profit is its own reward."

So, you have a few skills, have missioned or mined your way to your first couple of million, and you have a fast frigate or fat industrial ship - hopefully one of each. Already you have decided to set up somewhere and have found, using your noodle and a bit of common sense, a few low-cost trade runs.

Now you're thinking, 'I'll just buy X amount of items, load them up and head over', yes? Well, yes and no. There are some things you must ask yourself first.

Is your cargo full? If not, you should look again and see if there's another, closer, station that requires anything else you can bring en route to your final objective. This must be balanced with the time it takes you both to deliver (and pickup) this 'filler' load. It could be that if directly en route, dropping off a few holoreels will net you a few hundred thousand and add five minutes to your journey, the aggravation may well be worthwhile.

Is there a return trip load? In the late 20th century, fossil-fuelled delivery vehicles called 18 wheelers would often carry cargo to one destination only to find nothing to carry on the return trip, costing them both money and time. These were called 'Deadheads'. Avoid this at all costs. Sometimes you can't, but you should try.

Are you using the right equipment? If you have found a run that has somewhat high priced items, it may be better to run that fast frig twice, rather than the big slow indy once. Remember the return trip though. Time is money.

Finally, before you undock, check your route. Am I travelling through low-security systems? In the beginning avoid them. Business may be lucrative in low-sec and Nullsec, but you are not the only person who travels there. Many pirates also know how to use the trade system to get rich – by blowing up traders! Bear this information in mind, and if you have to pass through these zones then create some bookmarks that allow you to immediately warp upon undocking. Use the map and check how many pods and ships have been destroyed recently. If such things happened, then do not go there. Take it as a warning.

It is important to keep in mind that the supply and demand change with every transaction. When selling something to an NPC (Non-player character), the price will usually drop upon order completion. The more you buy from an NPC, the more the price will increase. So, the temptation is strong to transport and sell, transport and sell over and over again.

However, if you keep an eye on these fluctuations and changes, you may prevent some losses. It may be better to buy once, then transport in several trips, to ensure a lower price.

Sometimes the price or quantity changes after completing the first transaction. So if you've transported a double quantity of goods, be careful that you do not start to lose money or cannot sell all that you've hauled. This is not always the case, but be aware of what, how much, and where you are selling and also who else might be doing the same thing.

Advanced Commerce

This is just the beginning. Heed my words and you will become rich - there are ways and means of amassing fortunes even small corporations can only dream about. Trading in NPC trade goods can be lucrative, but buying and selling modules, minerals, and illegal items can quickly launch you into the big league, especially if you can do it remotely.

But to do that you need to look beyond the Market Screen - advanced trading is just as much about whom you know as what you know. But before that you need to train and train hard. Get your industrial skill maxed, then trade, then buy up marketing, Broker Relations and Accounting and make a start on those - not forgetting those learning skills if you have the inclination and plan to be a part of EVE for a while to come.

Skills

By now you can figure which skill categories are most important for you. In navigation anything that increases afterburner and microwarpdrive (MWD) efficiency is important. Skills for different hauling ships are essential. Hull modification improvements like the Hull Upgrades skill are necessary for better cargo hold extenders. Your future training plan should be working towards larger transport ships like freighters and more flexible transport ships like blockade runners.

So, what comes next? Focus on raising your trade skills to make them more effective. You have no doubt noticed that you have to pay an enormous broker fee and sales tax for every sale. These taxes are decreasing your profit with each transaction. To help with this, train Trade to level IV (if not level V). That will allow you to learn Marketing, Broker Relations, and Accounting. Broker Relations and Accounting skills will decrease the fees and taxes you pay per transaction by 5% to 10% per skill level.

Why should you learn these skills when they only save you 1,5% in fees? Well, looking at it more closely, 1,5% saved on a buy order and 1,5% saved on a sell order adds up to 3%, and that does matter when the profit-margin you are trying to squeeze out is just 5%. For example, when your monthly turnover is 10 billion ISK, then 3% of that is equal to 300 million ISK. It really adds up when you get into larger trade amounts.

Equipment

Always work on improving your equipment. Buy better cargo hold expanders as soon as you can afford them. It does not matter if you get them one by one, but you have to be able to carry more in one trip. Remember, you rent your cargo hold from yourself, so the more space you have, the less runs it takes to deliver your goods. Buy as many Giant Secure Containers as you can fit in your cargo hold. These containers are the poor man's cargo hold expander if you can buy them cheap. The thing about this container is that its capacity is larger than its volume (3900 m3 instead of 3000 m^3).

The Giant Secure Container can contain 30% more goods; any other container types can hold just 20% more. Every bit of cargo space counts. Another advantage is that should you be attacked and lose your ship, your cargo is worth far more than your pod and implants, so keep your cool and anchor the containers to preserve your investment. Assuming you password protected them prior to embarking on your trade route, anchored containers cannot be taken, and password protected containers cannot be opened unless you know the password. This may not always work if the containers are too near to each other, but anything saved cuts your losses.

Please note that you cannot pack all objects into these containers. Check before you plan a trip. Examples include 'live goods' like passengers or livestock.

Named expanders are expensive, so if you are going to use Giant Containers, only buy expanders that fit the containers. All other space may be wasted if an additional expensive expander doesn't allow for an additional Giant Container.

Marketing Skill

The Marketing skill enables you to sell items remotely, even if you are not in the specified station or solar system. If your skills are of a high enough level, then you can gain some profit without leaving the station. However, have no illusions that you can make a living by never leaving your station. Skills like Marketing make trade more convenient, but they are not a substitute for physically moving goods to the right spots.

Commerce Strategies

Here we explore a series of different trading strategies that should see you really getting to grips with the intricacies and nuances of EVE's ever-fluctuating marketplace.

First Strategy

Let's suppose that you have set up business trading antibiotics and you need 100,000 units. In order to collect that quantity you had to fly to 17 different solar systems. Do you spend your whole day collecting it and delivering it to the sale destination? You could do that, but there is the chance that someone else will fill the order long before you are done collecting, or at least that someone partially fills the order and now the buy price has decreased.

What should you do now? Accumulate the product, but do not sell it yet. Stage the antibiotics to be in sale range and wait for the price to go back up. Continue to check the market daily. When the price is good, sell the antibiotics remotely with the help of the Marketing skill.

Second Strategy

The second strategy involves expanding your operations a bit. Hire others to transport the goods for you via courier contracts. You will lose a small portion of your profit by paying others to do the work for you, but you can save a lot of time by not doing all the footwork yourself. The point is that other people will transport the goods from one place to the other, and when they arrive, you just need to sell them.

This strategy requires one to have a financial cushion, because there is additional waiting time required. Time waiting for the contracts to be picked-up, time waiting for the contracts to be fulfilled, and time waiting for the right sell price. But this is a good opportunity for those who want to spend their time on other things and who have the ISK for long-term sales strategies.

Mineral Market

Minerals are the backbone of manufacturing corporations. Entire books could be written about the mineral trade. Some of the regions are Nocxium poor, where others are Isogen poor. Do some research about the demand and prices. Find tools or ways to keep yourself up-to-date. The prices of the minerals also fluctuate. If you can sell it today for 100 ISK, you may not be able to sell it tomorrow for even 80. Mineral trading is complicated and takes lots of time, and may have a high cost to invest in inventory, but it can also have a high profit, especially if a war breaks out.

Module Trading

I do not suggest module trading for beginners. The first reason for this is that it takes a lot of investment ISK. Some modules cost tens or hundreds of millions. Secondly, you should be very familiar with the regional markets. Module trading requires the ability for fast decisions based on market evaluation, and the ability to deliver your product fast and safe.

It is difficult to lose a lot of ISK on a daily basis unless you are caught by pirates while hauling your expensive cargo. However, your ISK can be tied up for a long time in inventory. The real catch is knowing what items have a rare drop rate, because a rare item may become common after an expansion.

Black Market

Illegal items. Contraband. You can deal in these products, but you are risking your standing and your wallet if caught. Be prepared to do a lot of research up-front before trading in this class of product.

Note that items listed in the Market's 'Trade Goods' category will have a Legality tab on their Show Info window that provides information on standing loss with particular factions if they catch you with this product in your cargo hold.

Useful Tips

- Never fly with an empty cargo hold.
- Research and calculate your cost versus profit.
- Improve your skills: better ships, better fittings, bigger profit.
- Always check your flight path. Do not fly through a solar System where ships or pods were destroyed in the last hour. Never accept a fleet invite from those whom you do not trust or do not know (it's probably a trap).
- Use containers to expand your cargo hold capacity.
- Do not ask other traders for their routes. Miners keep rich asteroid fields to themselves, just as the merchants keep their routes secret. You are competition to them.

Notes From Ivanson

Ivanson: A Caldari fortune hunter, a sort of Freelancer, Trader, Constructor. "I love when you have the chance for creation and construction. Although I don't like the destruction, they can't live without each other. I like to trade, finding out the other merchant's thoughts, discovering and making the best with the hidden chances for making money."

Courier Contracts

Courier contracts can be costly since part of your profit goes to pay for someone else to haul for you. Even if you decide to offer the contract, there is a chance that no one will take it. The couriers may choose more profitable contracts over yours. Unfortunately, this is impossible to find out ahead of time due to the changing prices. So other products and contracts have an effect on your costs regarding the transport of your goods by couriers.

For example, you put up a courier contract for 120,000 m^3 of Silicate Glass. You run the risk that your courier only delivers half the order and you still end up having to transport the surplus.

Secondly, make sure that your timeframes are not set too long. Two weeks for a contract to be accepted and fulfilled might be too long since the market will have changed many times in that period, and your profit opportunity could have disappeared by then.

Tools Of The Trade

There is an easier way to earn fast cash by going for small amounts rather than the big haul. There is only one problem with this option; there can be a lot of competition. There are probably between 4,000 and 7,000 trial accounts active at any one time. All of these rookies need to fit themselves with basic items, and they are all in relatively concentrated areas.

For example, missile launchers, afterburners, and small turrets are likely to be in demand in these starter areas. Watch out, though, as overproduction can be a problem. You might try to offer your items two or three jumps away from the starter areas either at a lower or a slightly higher price as players may either go a few jumps for a cheaper product or may pay more to avoid high traffic areas.

Put up buy orders for commodities that the agents give to the players. If you collect the proper amount of products, sell them when the buy price goes back up, or if it is possible, reprocess them when mineral buy prices are higher than the product itself can bring in.

Refining and Reprocessing skills are really useful for a trader. Check the items that you have to see how many minerals you may get from them. Do not reprocess them, just check what you would get if you did reprocess them. Multiply the mineral prices by the reprocess results to see how much the module is worth in terms of minerals. Check the market after that for how much can you sell or buy the item for.

There are two possible cases: if they buy the module for more, then fulfil the buy order. If not, then reprocess it and sell the minerals. If you see sell orders for the module that are cheaper than what you can sell the reprocessed minerals for then buy the modules and reprocess those as well.

(Named modules are not designed for reprocessing. They contain only half the amount of minerals that the standard Tech I versions have.)

It is useful if you complete missions to accumulate loot and salvage to sell. Every four hours you can decline missions without any negative effect on your standing. Find a widely distributed corporation that has several stations, and improve your standing.

This will give you spots across the universe where your sales tax is decreased. You might gain enough standing to eliminate your refining and reprocessing fees also.

Try to eliminate the possibility of your buy orders being fulfilled in low-sec systems, otherwise you may never be able to collect those items. If you are manufacturing ships or modules near the border of high-sec, then plan to put those items up for sale in the gateway systems just before low-sec.

Many people go to low-sec to mine because these systems are rich in Zydrine. So not only is low-sec not protected by CONCORD, but the miners there make it a great place for pirates to hang out. If you can supply Ospreys, Mining Barges, weapons and ammunition or mining lasers, then players will buy it from you without having to travel long distances to get it.

The Working Capital

Never run out of ISK in your wallet. Try to keep 10% of your assets in cash. You will see the advantage if you find a battleship selling for 30% less than normal. If you have the ISK on hand, you can snatch up the deal and sell it later for a profit.

Finding Who Trade With

NPC corporations have offices all over the EVE universe. They buy and sell the same products no matter what their location. In the market tool, it is easy to see who is selling what and for what quantities and the prices they are selling it for. Using Show Info, you can see what products an NPC corporation deals in. Use this information to profit.

It is an often asked how to tell if a product is sold by either a real player or by an NPC. One way is that orders by NPCs are always for 365 days, but a player's offer has a three month limit. In the case of NPC transactions, the quantity doesn't change. If you see an offer for 1000 pieces and you buy 500 pieces, the offer will re-list at 1000 units again even if the price fluctuates.

Finding Routes

You have found a station (A) that is selling a product in high quantity, and station (B) that has a buy order for that product.

What is the next step? Try to find something that B sells that A wants to buy. If there isn't anything, then try to find a third party (C) to buy something from B. The point is that your cargo hold should not be empty because you will lose money when it is. Always look for something to take from where you are to the next profit point.

Keep in mind that for long hauls you may not want to take a freighter since its warp speed is low and is very slow to align for warp. It can take a long time just to travel across a single system, let alone several jumps.

Finding The Biggest Profit

Arm yourself with knowledge and cunning. You've got your list of companies and what products they deal in. You've checked the product details and know how much cargo space they take up.

You've calculated the quantities that you can carry in the optimal ship to carry shipments in, and your ship is fitted and ready to go. Remember that not every product can go into a Giant Secure Container. Put those products and those corporations at the bottom of your list to deal with later. Prioritize your profitability.

When making a sales run, always check if there is anything you can sell at another destination close by or on your return route. Even if it partially fills your cargo hold, always think ahead and always look to your wallet. Remember that two consecutive sales to an NPC buyer will likely decrease the buy price dramatically.

It will be best to stockpile the goods and wait till the buy price rises again.

If you are en route to deliver goods for a buy order and the price drops by the time you reach your destination, it is likely that someone filled the order before you got there. Whether or not they filled the order with one unit or with the entire quantity asked for, the buy price is no longer profitable for you. Wait a few days and when the price is back up, fill the order then.

Keeping this in mind, you can do this to your competitors as well. If you aren't prepared to fill the entire order, you can always ruin another's chance at profit by just selling one unit for the buy order to drive the price up until you can return for the profits yourself.

Trading Skills

This section explains some of the more advanced trading skills since many people wonder how they help. Keep in mind that distance modifier skills always only ever extend to the borders of the region you are in. If you are docked one jump away from another region, you're buying and selling power will still remain in your current region.

Your route is always calculated based on your autopilot settings. So if you have it set to 'use only safest route', you will never deal in low-sec, as it will never take you there.

Trade, Retail, Wholesale, Tycoon

Training these skills increases the number of active sell and buy orders you can have on the market. In the order listed, each level of these skills raises this number as follows: +4 per level of Trade, +8 per level of Retail, +16 per level of Wholesale, and +32 per level of Tycoon.

Marketing

This skill allows you to set up sell orders remotely. For example, at level III you are able to create sell orders for goods that are in other stations up to 10 jumps away from where you are currently at. Without this skill, we are only able to put up sell orders for items at the station you are currently docked at. On the Orders tab of the Wallet tool, you can check your range in the right bottom corner.

This skill often allows you to trade out in Nullsec where there are stations you probably do not have the right to dock at, but that have product you'd like to buy and sell. Jump into a covert ops ship, find a distant region with an NPC station, dock there, and you can start to trade in that region. Yes, you will not be able to go to the product and pick up your purchases, but you can in turn sell them without ever having to physically be near the product.

The disadvantage of relying on this skill is that you may not remotely split up stacked goods. If you have a stack of five ships, you must create a sell order for all five ships. The way around this is to create a contract for the particular item, in this example one ship.

Contracts allow you to split the items. Then cancel the contract, refresh your assets, and the stack is now split. Note that your assets will only refresh every five minutes. Also, when you purchase remotely and you have a repackaged item of the same product, the new purchase will stack with the existing product automatically.

Daytrading

You can modify buy and sell orders remotely with this skill. Without it, you must go to the station the order originates from. This is useful when someone has outbid you, or when you want to increase or decrease how much you want to buy. The distance your trade skills allow for is the Modification range value on the Orders tab of the Wallet tool.

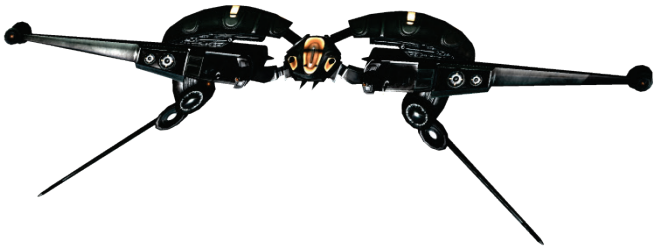
Procurement

This skill allows you to place remote buy orders. Note that this is not the same as directly buying a remote item. Without the Visibility skill, the buy order is limited to the station you create it to be at. Without Procurement, you can place buy orders only at the station you are currently docked in. Your current maximum distance next is displayed by the Bid Range on the Orders tab of the Wallet window.

If you dock at a station, then you can make buy orders for any kind of goods, and at any range. If you are 10 jumps away from the destination where you want to place a buy order, you are going to need the Procurement skill trained to level III to do that, and they have to be selling that particular item there.

If you want to create a remote buy order and the product is currently not sold at that location then do the following: open the Market tool, go to the Search tab, type the name of the item, and then click the Place Buy Order button that is in the lower right side of the tool. A window will pop up where you can choose the station you want to create the buy order at. Click on the station you want and fill in the rest of the buy order information. The only catch with this is that if you want to set up that remote buy order to have a range of effect other than just the station you are creating the buy order to be at you will need the skill in the next section.

Visibility



This skill increases the range your remote buy orders are effective to from their origin station. There are a few false 'legends' surrounding this skill. One says that it affects all your sell orders. This is incorrect. In fact it only extends the range of your remote buy orders. The other false fact is that it affects the visibility of your orders Again, untrue. If you make any offer on the market, it will always be visible in the entire region.

So, then what does this skill do exactly? Do you remember the last time you created a buy order? You were docked at the station you created the buy order at and set it for any buy range you wanted. However, when you are not at that station and want to place a buy order remotely, unless you have Visibility trained, the range may only be the station you are placing the buy order in. For each level learned, your remote buy order can increase its coverage further and further away from your desired station.

You can see your current remote bid range on the Order tab of your wallet. Do not confuse it with Bid range. Bid range means how far away you can make a remote buy order (this is increased by training Procurement). The maximum range of that order is set by the Visibility skill.

So then, what is the point of training Visibility to level V? Since the broker's fee is dependent on your standings, you can minimize this cost by taking advantage of your standing.

Only place your buy orders at stations you have good standing with, and give your buy order the best range possible so that others are likely to fill your order first.

The other important reason is for trading in Nullsec. In case you have something you want to buy or sell at a station where you cannot dock, then you can access the goods remotely and still give your buy order the maximum range possible.

Accounting

This skill decreases the sales tax you pay on a market transaction. Every time you sell something you must pay 1,5% tax on the full sale price to the SCC. Each level of Accounting decreases your tax by 0.15 percentage point per level. That means at level I you only pay 1.35%, level II it's 1.2% and so on.

The actual rate is visible at the bottom of your wallet tool's Order tab window, next to transaction tax.

Broker relations

Every time you place an order (both buy and sell orders), you have to pay a broker fee of 1% of the order's total value. You can decrease this fee by 5% for each level of Broker Relations trained. The broker's fee differs from the sales tax because:

- You pay a fee to your broker every time you place an order. If you cancel the order, you will get no refund, but you pay tax only if the order is fulfilled.
- If you are trading a product, you pay the fees twice, once when you place the buy order, and once when you make the sell order.
- You are not going to pay any fee or tax if you are buying directly (without placing an order).

The formula behind the science:

BrokerFee % = (1.000 % – 0.050 % × BrokerRelationsSkillLevel) / e ^ (0.1000 × FactionStanding + 0.04000 × CorporationStanding)

Let's look at two examples. First, you buy something at a station for 10,000 ISK. You immediately place a sell order for that item for 20,000 ISK. Since you bought directly, or used 'buy now', you did not pay any broker fees. However, you will pay broker fees on your sell order of 200 ISK minus the bonus of the Broker Relations skill.

When someone buys this item, you will have 19,800 ISK (without the skill) and a real profit of 9,600 ISK because you also pay tax on the sale as well.

Second example: You place a buy order for 10,000 ISK. You must have 10,100 ISK, because there is a 100 ISK broker's fee if you have no skills trained to lower this. When someone fulfils the buy order you turn around and place a sell order for 20,000 ISK. The broker's fee has to be paid again, which is 200 ISK without skills trained.

When it is sold you are going to pay the tax of 200 ISK without the Accounting skill. The net profit is 9,500 ISK. Important: the minimum of every broker fee is 100 ISK. That means if you make a 1,200 ISK offer for something, the broker fees will be 100 ISK, not 12 ISK. Note: When the proper skills are trained to level five, the broker's fee is 0.75%, but you will always pay at least a minimum of 100 ISK.

You can decrease your broker's fees without training social skills at NPC stations if you have good standing towards the owner of the station. The exact formula is not known, but based on player experience, it has been seen where a corporation standing of 10.0 can decrease the fee by 0.25%, while a faction standing of 10.0 means 0.5% less. The absolute minimum of broker fee has been seen is 0.1875%.

Margin Trading

This skill is often disregarded, although it is actually quite useful. If you make a buy order, your money goes into escrow as a reserve payment as if you have already purchased the item. Margin Trading helps you to decrease the amount of deposit, so more liquid capital remains in your wallet.

For example, I make a buy order for 100 ISK worth of product. I do not have the Margin Trading skill, so how much do I pay? For those who said 100 ISK, go mining instead. Those who said 101 ISK, you can stay and learn a little. For those who said 100 ISK + the broker's fee... well, you are going to be my competitors. In case you trained the Margin Trading skill to level I (that means 25% less) because:

- You pay the broker's fee based on the entire 100 ISK buy order
- You make a 75 ISK deposit
- When the product order is filled, you pay the remaining 25 ISK.

Each skill level decreases the previous level by 25%, so without the skill learned at all your deposit is 100% of the order. At level I it's 75%, level II it's 56.25% (not 50%) and so on.

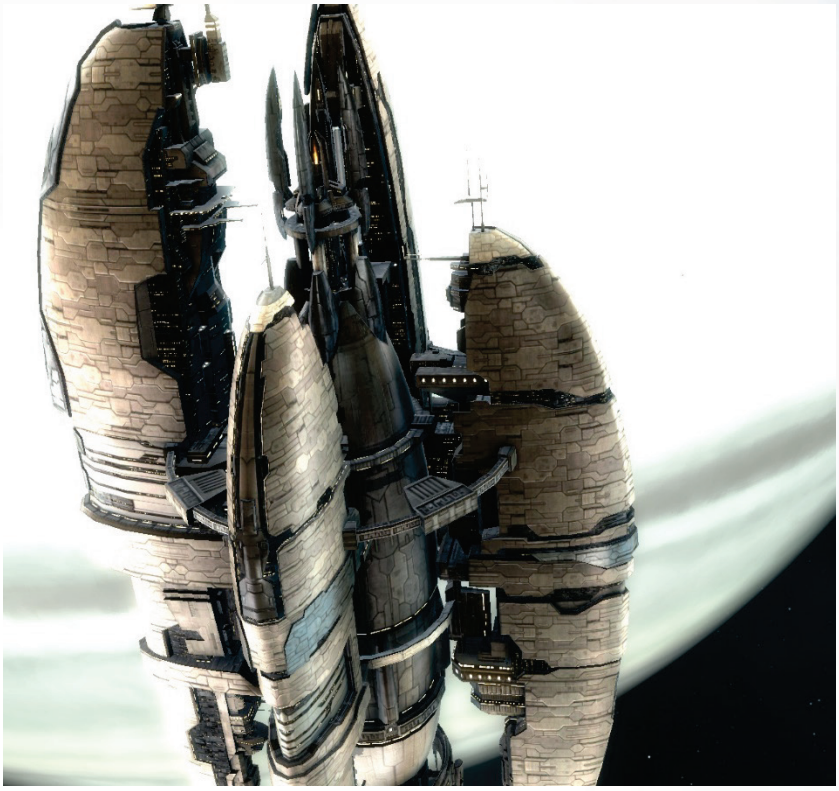
If you do not have enough money in your wallet to cover the entire order, but you have enough to cover it with Margin Trading trained, then you can put up your order. However, when the order is fulfilled by someone, you must have the remaining amount of money in your wallet otherwise your order will be cancelled, and you lose the broker's fee. You cannot see this percentage in the orders window. You can see how much money you have in deposit (Total in Escrow), and how much you have to pay when the orders are complete (Additional ISK to cover).

Note: never partially fill an NPC buy order! For example, there is an NPC buy order at a station for 100,000 units of goods at 20 ISK per unit. You arrive with 20,000 units of that good in your cargo. Do not sell it! Go back, bring more, and when all your stock is there, then sell it. It is more likely that the price will go down after the sale instead of up.

Let's suppose that you do the exact opposite. They would like to buy 100,000 units and you sell the first 20,000 units you bring to the station right away. You will see a new order for 100,000 units of goods at the price of 15 ISK per unit, instead of an order for 80,000 units at 20 ISK.

Station Trading

Station trading is for players, who have lot of patience, to check the market and adjust the prices. Generally it means that you are treading only in that specific station. You do not leave it. Depending how often you can/want to change the price, choose your location for the station trade. Busy systems like Jita, Rens, Amarr, require more attention. In smaller hubs it's enough to check the price daily, or even twice a week. I would recommend having an alt for this purpose. Just log in when you have time and check the market.



Let's see an example: the Ferox. The lowest sell order in the station is for: 18 088 997 ISK. The highest buy order is: 16 089 894.

The difference is almost 2m ISK. (Minus the taxes and fees: that's about 3% of the price with no skill). So the taxes are around: 540k ISK, with good standing, and skills that can go down for around 1.5% of the price. So in the end it can mean that you earn around 1.5m ISK, just for a resale.

In a busy system (Jita) it can be that you are outbid within a couple of minutes. There is a five-minute period when you cannot modify your order. Once that has elapsed, change your order to put your back on top. Same applies when selling the item; your price should be the cheapest.

However, most time you can ignore the completions which are not in the same station. A sell price ~18m is good, ~16.5m is bad.

Some tips:

- Check the market history. There you can see how much is sold on a given day, what where the minimum and the maximum prices. The average price can be an indicator, if the item is more sold on buy or on the sell order (The number is closer to the max or the min price).
- In a busy system before you leave the game for a longer time, adjust your prices a good deal below the current trading price. You don't want to see that you bought the Ferox for 16m and the current sell orders are on 15.5m ISK.
- Learn how the market fluctuates. Try to use the fluctuation for your goals.

Contracting

Contracts allow two pilots to trade equipment, ISK, weapons, ships, and items of every kind that you cannot trade on the regular market. It is important to remember that you can accept contracts in your current region except when it is a private contract.

When you open the Contracts tool on the NeoCom and click the Create Contract button, you will see several options (detailed below).

Auction

You can auction items to players by using the Auction Contract, allowing players to bid on your item. Upon expiration the highest bidder wins the auction. To create an auction:

- Select Auction.
- Choose if it is a public or private auction.
- Select the items what you want to auction.
- Set the base price to start bidding at.
- Set the buyout price if you want to allow others to get the item immediately.
- Add a description to the auction, and do not forget to set the expiration time as well.
- Finally, review the terms of the auction, make sure everything is OK, then click Finish.

Item Exchange

Item Exchange contracts allow you to trade either for ISK or for other specific items.

For Sell contracts:

- Select Item Exchange. Choose if it is a public or private item exchange.
- Select the items you want to sell.
- Enter the price, a short description about the items and the duration of the contract
- Finally, review the terms of the contract, make sure everything is OK, then click Finish.

For Buy contracts:

- Select Item Exchange. Choose if it is a public or private item exchange.
- Do not select anything from your items.
- Enter the price you are willing to pay for the item.
- Type in the first few letters of the name of the item you want, find it on the list, select it, and click the Add Item button. Do not forget to enter the quantity also.
- Finally, review the terms of the contract, make sure everything is OK and then click Finish.

For Trade contracts:

- Select Item Exchange.
- Choose if it is a public or private item exchange.
- Select the items you would like to trade.
- Enter the price you are willing to pay for the item.
- Type in the first few letters of the name of the item you want, find it on the list, select it, and click the Add Item button. Do not forget to enter the quantity also.
- Finally, review the terms of the contract, make sure everything is
- OK and click Finish.

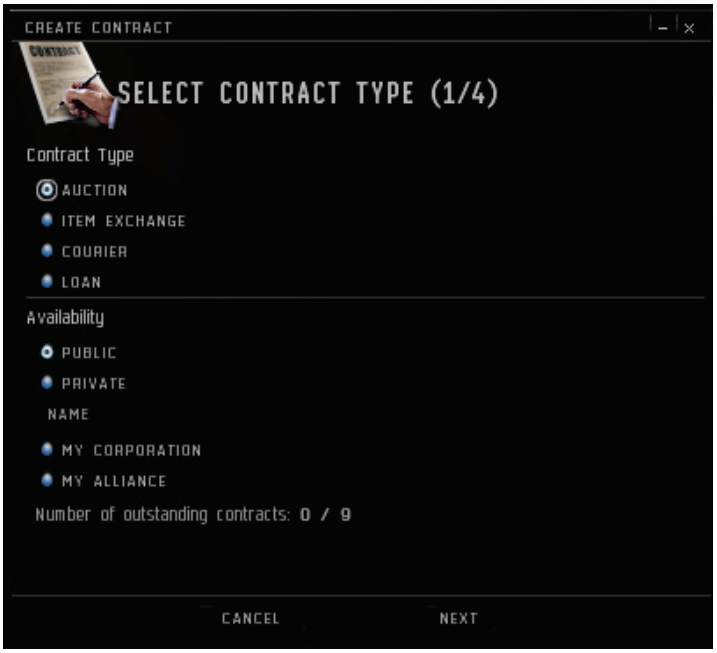
Courier

Transport jobs can be setup via contract for a third party to haul your property from point A to point B. Upon completion, the hauler receives the reward and you get your items. Keep in mind that the hauler may keep (steal) your property. Therefore, set up a sizeable collateral amount to cover your loss if the goods are not delivered. Sadly, the collateral amount can be abused as well, because you can ask millions in collateral for transporting one unit of tritanium. When the hauler accepts it and has paid the collateral, a suicide gang will jump him. The contractor keeps the ISK collateral and the hauler gets one tritanium, or worse loses his ship and his pod. I suggest avoiding such contracts!

To setup a courier contract do the following:

- Select Courier.
- Choose if it is a public or private courier contract.
- Select the items you want moved. It is not possible to transport illegal goods this way. For example, you cannot smuggle slaves from Amarr to Jita.
- Enter the destination of the item, a reward for the service, and the value of the items as collateral.
- Enter the number of days in which the mission should be completed and a short description about the job.
- Finally, check if everything is OK, and then click Finish.

General Information



Once you have set up your contract and submitted it, it will be available for everyone in the EVE universe to view. Likewise, you may choose to purchase through contracts as well.

Here are some contract tips:

- You can choose: Buy & Sell or Courier contract
- Enter the exact name of the item in the description field or the 'Item Type' field (or input a few letters and use the 'item category' filter).
- Select the region you want to search for contracts in.
- Select the type of the contract you are interested in.
- Select the item category (blueprint, ship, module) if you want.
- You can set the range of the price if you like, or narrow down the list to only those contracts that you can afford.
- You can filter to the exact item and/or you can exclude the multiple item hits.
- You can choose the contract 'Availability': Public, Me, Corporation, Alliance.
- You can include/exclude systems based on their System security status.
- Filter the list further by who issued the contract.
- As a final step, make sure everything is properly set so you will receive search results that you intended to get.

Skills

Two trading-based skills apply to contracts: Contracting and Corporation Contracting.

Contracting: Allows you can create an additional four contracts per level trained.

Corporation Contracting: Similar to above, but in this case you can create an additional 10 contracts in the name of your corporation per level.

Social Engineering (Scam)

Social Engineering is the exploitation of the natural tendency for people to trust others. Unless something is expressly forbidden by the Terms of Service as cheating, then the action is allowed.

- Therefore, always check what you are about to buy!
- Check that the offer and the requirement values are not reversed.
- Double check the numbers to ensure you are not misreading.
- Check the number of items for sale.
- Check if the item 'inside' the contract matches its advert.
- Check where the product is; do not go where you smell a trap.
- Be careful with courier contracts. Try to avoid the transporting one unit of tritanium for 100 million ISK contracts!
- Always check the market price. Do not let them fool you.
- Always check if you have docking rights to the station in 0.0 or else you may have paid for something you are unable to pick up.
- Use the Block feature. It is likely that all the contracts from the same person are scams.
- The most common reading error is when the Buy Order is short by a few zeros.
- Don't buy via direct trade, where the price is different than what was discussed. Buy via contract instead.
- When you get a „proof" as „Look at my wallet", NEVER trust in a linked website „API" – it's FAKE!

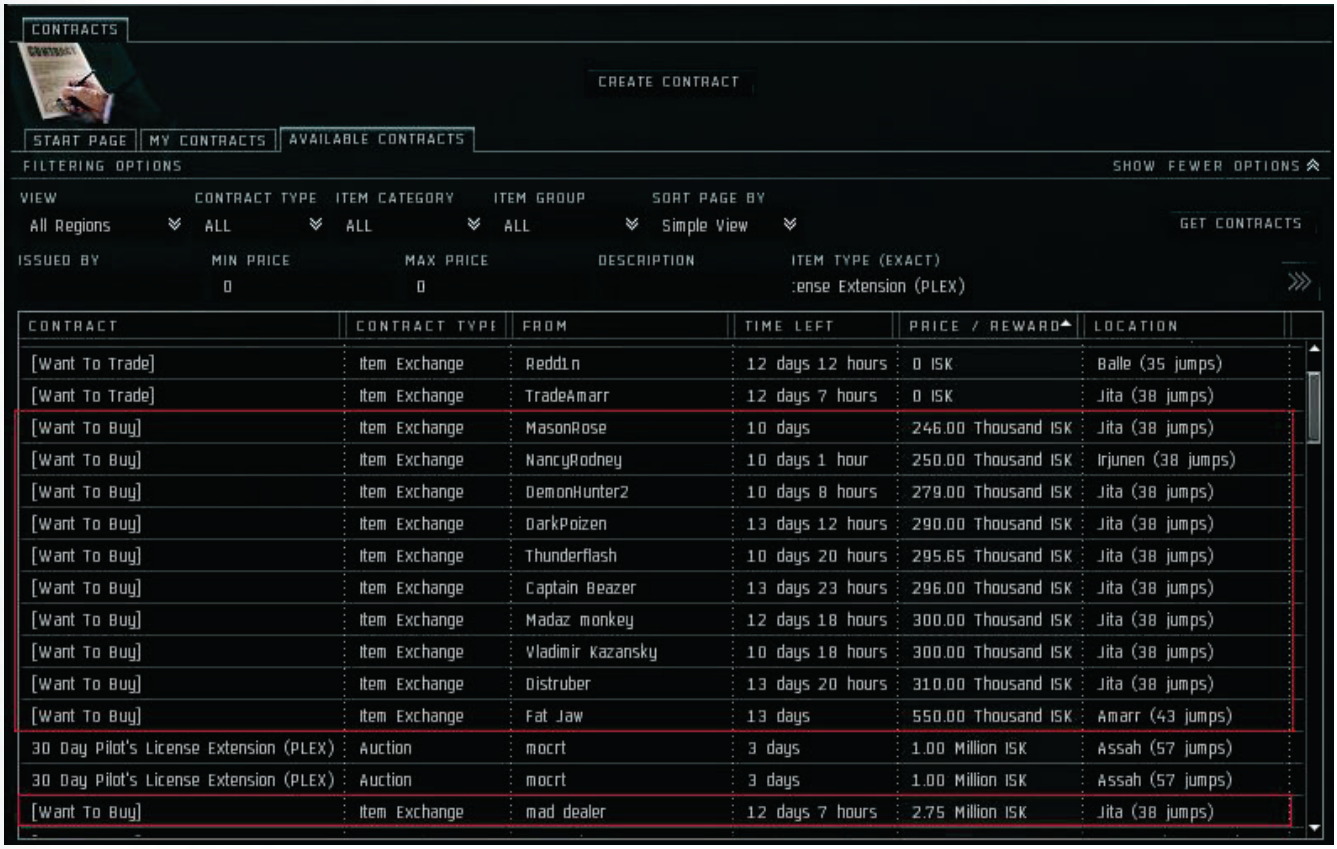
If it sounds too good to be true...

As the old saying goes, if something looks too good to be true, it probably is. Have you ever seen a contract selling an obscure item, and when you checked the market, you found buy orders up for over double the price?

Double-check the minimum units on the buy orders and you'll usually find they require ten or more of the item at once while the contract supplies only nine. You'll be unable to sell the items once you've accepted the contract, but that isn't where the scam ends.

The scam relies on players' thinking they've found a way to outwit the scammer by completing the set of 10 items and then fulfilling the overpriced buy order. The trick here is that the scammer has trained the skill Margin Trading, which allows him to launch a buy orders even if he can only fund 25% of it.

If you try to fulfil the scammer's buy order and the ISK isn't present in his wallet, the order is cancelled and you're left holding the bag. This scam is so subtle that it looks absolutely legitimate to a lot of players.



External Tools

There are numerous third-party programs and websites that can help you to success, including accounting, assets and order tracking programs. There are websites that let you query prices for products.

I suggest checking out the Market Discussions forum on the main EVE Online website for more information.

https://forums.eveonline.com/default.aspx?g=topics&f=253

POS

CHAPTER 9

EVE INDUSTRIAL BLACK BOOK

ISK VOL I

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The POS

The following section provides introductory information on starbases, also known as Player-Owned Structures (or POSes). This will give you a glimpse into the complexities of Moon Surveying, Moon Harvesting and Reactions. Beyond that, you will have enough knowledge to explore the endless possibilities that POSes have to offer.

Every POS anchored in space can be referred as such, regardless if it is just a Control Tower or a completely equipped mining, manufacturing, and researching battle station. Control Towers require the Anchoring skill trained to level I in order to deploy and online them.

POS Basics

It is important to know that only player-run corporations (as opposed to NPC corporations) may anchor and online starbases. To do that in 0.5 systems and higher, the appropriate Starbase Charter of the given sovereign race is required as an additional fuel. It can be seen as an 'operational license' to operate a POS in that race's space.

Anchoring a POS requires appropriate corp standing to the sovereign race. This standing changes at every downtime. It is calculated as the average faction standing of the corp members who have been in the corp for more than seven days. Important: You cannot anchor a POS at a moon if a Territorial Claim Unit (TCU) is already anchored there.

Every solar systems are now eligible for Control Tower anchoring (except for a few restricted solar systems, like Jita).

The corp standing to a given race averages out the individual standing of its members to the race over time. This average is not immediate. It changes at every downtime following the steps below:

- Calculated at every downtime
- Only the standing of corp members older than seven days is included
- Newly created corporations now need to wait 7 days before being allowed to anchor Control Towers
- Standing = (Total standing of the characters giving standing) / (Number or the characters giving standing)

It is important to note that a character that has no standing towards the given race and is not a member for more than seven days is not counted in the standing average. For example:

- Character 1 Standing: +8.86 towards Caldari
- Character 2 Standing: -0.5 towards Caldari
- Character 3 Standing: 0.0 No standing / neutral towards Caldari

If every character has been in the corp for more than seven days, then the corporation standing = (8.86+ (-0.5))/2 =4.18. If Character 2 has not been a member for seven days yet, the corporation standing will be 8.86.

The Control Tower

Let's review what a POS is made of. First of all you need a Control Tower. This is the soul of the whole starbase. It sets the CPU and powergrid capacity, which in turn sets how many modules and what kind of modules can be used with the tower. The anchored POS modules will only work if the tower is functional (online) and filled with fuel. An important feature of the POS is that only those who know the password can enter the forcefield and the POS can defend itself effectively against intruders, assuming that weaponry modules are online.

Type Of Towers

Towers are distinguished according to their race. Each one has a bonus typical for its given race. There is also an equivalent pirate modified version. These differ from their Empire versions typically in that they consume less fuel consumption and have more HPs.

Their other important distinctive feature is their size. There are control towers, which are the largest, then medium, and small towers. Large towers can equip more modules, and can handle the higher CPU and PG requirements of higher quality modules. However, large towers also have the highest fuel consumption. Since the fuel consumption of a small tower is about ¼ that of a large tower, a small one cannot be equipped with many modules. Typically, small towers are used as research starbases in Empire territory, especially since weapon modules can be very demanding on CPU and PG.

Most pirate faction has a modified version of a racial tower. These special towers have better resistances and need less fuel to operate:

Empire Faction Variant	Pirate Faction Variant	
	Tier I	Tier II
AMARR	Blood, Sanhsa	Dark Blood, True Sansha
CALDARI	Guristas	Dread Guristas
GALLENTE	Serpentis	Shadow
	Angel	Domination

Tower Defence

What is a tower good for? Firstly, when a tower is online, it emits an impenetrable shield around itself called a forcefield. POS modules can be placed inside the forcefield and POS weapons must be put outside. It looks like a huge bubble when it is online, while its strength depends on the size and type of the tower. The strength of a large POS can be up to 50 million hitpoints. Shooting down one of these will take a good amount of time, even with 100 battleships.

If the shield reaches the critical point of 25% of capacity, the POS will switch into 'Reinforced Mode', meaning its shield becomes untargetable. This inhibits logistics ships from repairing the shields when the POS has a Reinforced Timer. This mode is granted only when the POS has enough strontium clathrates in its fuel bay. The station burns this emergency fuel at the beginning of the reinforced mode and continues to burn it until it is entirely used up. Every POS module that needs CPU to operate will go offline and cannot be onlined again under Reinforced Mode.

The weapons that do not need CPU will stay active, providing defence, but if the attacking fleet manages to shoot your shields down to 25%, you probably will not have a 'weapon problem' since the weapons are usually the first modules to be targeted and destroyed.

You can configure your weapons to tell them under what conditions to activate. This can be defined by standings (which work best out in both low-sec and Nullsec). They can be set to open fire when only at war. Everybody who knows the password and has friendly standing can enter the forcefield freely.

Another useful attribute of the forcefield is that it prevents target locking from inside to outside and from outside to inside. Only the tower itself can be targeted from outside. It is useful to know that cloaking devices will not work within the forcefield. Lastly, you can access the strontium bay only if the shields capacity is above 50%.

Operating The Tower

First of all, you will need a free moon, because you can only anchor a POS to a moon. After you have chosen a suitable location, you have to bring the tower there. This is usually done via a transport ship because of the tower's size and the needed fuel. Launch the tower for your corp. Once it is in space, right-click on it and choose 'Anchor Structure'. Other structures are deployed in a similar way. Control Towers place themselves automatically once launched.

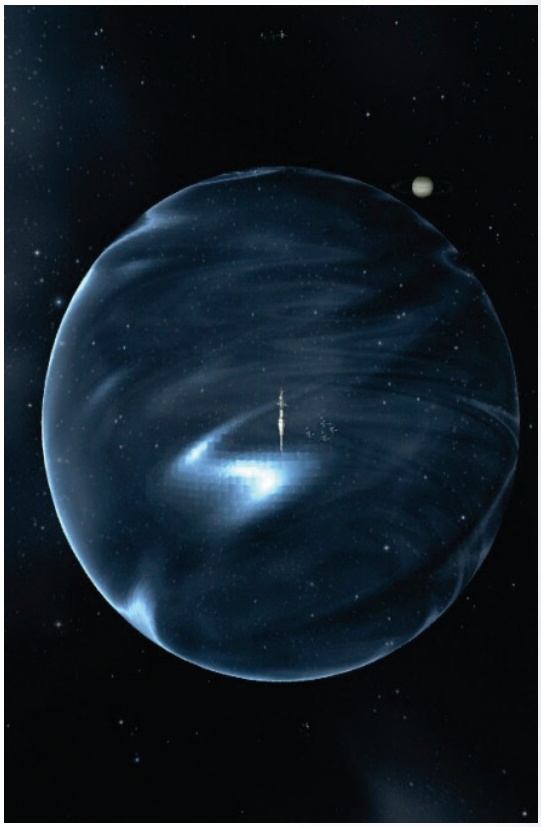
The other POS modules will have to be placed and oriented by hand by use of the green arrows. Move the structure around until you are happy with its position, then right-click on an arrow and select 'Anchor Here'. After that, you just have to wait for the anchoring time, which is 30 minutes in the case of a large POS. **Important note:** You can only anchor a control tower in high-sec when you have the necessary starbase charters in your ship's cargo.

After the tower has been placed, it is useful to set password protection in order to deny access to unauthorized players. You can set it to allow free passage for corp and alliance members so they do not have to use a password. Right-click on the tower to access the 'Set Password' option. You can give the password by right-clicking on your ship or on your capacitor circle. Select 'Enter POS Password' and type it in.

When the POS is anchored and you have placed the required fuel in the fuel bay, online it by selecting the 'Online' option from its contextual menu; it will take 30 minutes.

Fuel Requirement

Every tower needs fuel to operate, this keeps the shield online and makes the placed modules work. You will need fuel blocks to operate, made from some trade goods and materials extracted from ice.



The little bit from everything system has changed to a Fuel Block system. You can manufacture those blocks at a station, manufacturing POS (Component Assembly Array, Ammunition Assembly Array). You have to load those blocks in to the tower's fuel bay. Each race have an own specialized fuel block type.

Towers will use 1 block/hour for small, 2 blocks/hour for medium and 4 blocks/hour for large. The CPU and Power load will no longer have any impact on your fuel needs - all towers now need the same amount of fuel, regardless of configuration. Strontium Clathrates are only used in reinforced mode. The amount of Strontium placed in the fuel bay determines how long the reinforced state will last.

Each batch of the fuel blocks will need the following components (and a blueprint from a Thukker Mix station):

- 8x Coolant
- 4x Enriched Uranium
- 400x relevant racial Isotope
- 4x Mechanical Parts
- 20x Oxygen
- 1x Robotics
- 150x Heavy Water
- 150x Liquid Ozone

The necessary isotopes:

- **Nitrogen Isotopes** (Caldari Tower)
- **Helium Isotopes** (Amarr Tower)
- **Oxygen Isotopes** (Gallente Tower)
- **Hydrogen Isotopes** (Minmatar Tower)

Don't forget: In High-sec, charters, will still need to be added as normal!

Every batch will make 40 fuel blocks, used by the towers:

- **Large**: 40 / hour
- **Medium**: 20 / hour
- **Small**: 10 / hour

The Faction towers consume less fuel blocks:

- **Tier 1 towers**: -10% consumption (Sansha, Blood, Guristas, Serpentis, Angel)
  - Large: 36 / hour
  - Medium: 18 / hour
  - Small: 9 / hour

- **Tier 2 towers**: -20% consumption (True Sansha, Dark Blood, Dread Guristas, Shadow, Domination)
  - Large: 32 / hour
  - Medium: 16 / hour
  - Small: 8 / hour

The difference between the racial towers

There is a set of Control towers for each playable race in EVE, each control tower will offer a different set of bonuses to the shield resistances and other structures anchored at the same location. The main differences between each tower are:

- Resistance types – By faction
- Force Field Size – By Size
- Power Grid Output - By Size and Faction
- CPU Output - By Size and Faction
- Shield Hit Points- By Size and Faction, the pirate towers have more than the regular ones.
- Fuel Consumption Rate - By Size and Faction, the pirate towers consume less than the regular ones.

AMARR

Racial Bonuses
50% bonus to Energy Sentry Optimal Range
25% bonus to Energy Sentry Damage
50% bonus to Silo Cargo Capacity

CALDARI

Racial Bonuses
25% bonus to Missile Battery Rate of Fire
50% bonus to Missile Velocity
-75% bonus to ECM Jammer Battery Target Cycling Speed

GALLENTE

Racial Bonuses
25% bonus to Hybrid Sentry Damage
100% bonus to Silo Cargo Capacity

MINMATAR

Racial Bonuses
50% bonus to Projectile Sentry Optimal Range
50% bonus to Projectile Sentry Fall Off Range
25% bonus to Projectile Sentry RoF

Fuel Consumption

AMARR

	PG	CPU	Fuel Blocks	Starbase Charter	Strontium Clathrates
Amarr Small	1 250 000	1 375	10	1	100
Blood Small	1 250 000	1 375	9	1	100
Sansha Small	1 250 000	1 375	9	1	100
Dark Blood Small	**1 250 000**	**1 375**	**8**	**1**	**100**
True Sansha Small	**1 250 000**	**1 375**	**8**	**1**	**100**
Amarr Medium	2 500 000	2 750	20	1	200
Blood Medium	2 500 000	2 750	18	1	200
Sansha Medium	2 500 000	2 750	18	1	200
Dark Blood Medium	**2 500 000**	**2 750**	**16**	**1**	**200**
True Sansha Medium	**2 500 000**	**2 750**	**16**	**1**	**200**
Amarr Large	5 000 000	5 500	40	1	400
Blood Large	5 000 000	5 500	36	1	400
Sansha Large	5 000 000	5 500	36	1	400
Dark Blood Large	**5 000 000**	**5 500**	**32**	**1**	**400**
True Sansha Large	**5 000 000**	**5 500**	**32**	**1**	**400**

CALDARI

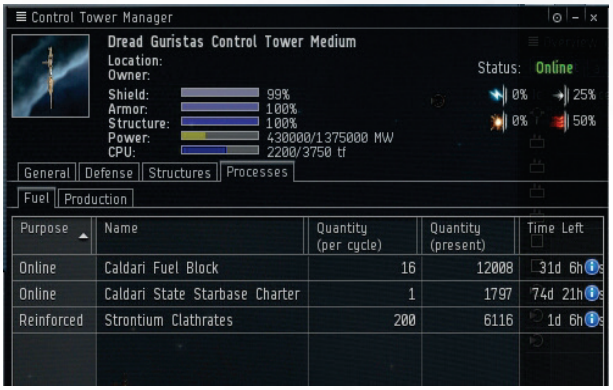
	PG	CPU	Fuel Blocks	Starbase Charter	Strontium Clathrates
Caldari Small	687 500	1 875	10	1	100
Guristas Small	687 500	1 875	9	1	100
Dread Guristas Small	**687 500**	**1 875**	**8**	**1**	**100**
Caldari Medium	1 375 000	3 750	20	1	200
Guristas Medium	1 375 000	3 750	18	1	200
Dread Guristas Medium	**1 375 000**	**3 750**	**16**	**1**	**200**
Caldari Large	2 750 000	7 500	40	1	400
Guristas Large	2 750 000	7 500	36	1	400
Dread Guristas Large	**2 750 000**	**7 500**	**32**	**1**	**400**

	PG	CPU	Fuel Blocks	Starbase Charter	Strontium Clathrates
Gallente Small	937 500	1 688	10	1	100
Serpentis Small	937 500	1 688	9	1	100
Shadow Small	**937 500**	**1 688**	**8**	**1**	**100**
Gallente Medium	1 875 000	3 375	20	1	200
Serpentis Medium	1 875 000	3 375	18	1	200
Shadow Medium	**1 875 000**	**3 375**	**16**	**1**	**200**
Gallente Large	3 750 000	6 750	40	1	400
Serpentis Large	3 750 000	6 750	36	1	400
Shadow Large	**3 750 000**	**6 750**	**32**	**1**	**400**

	PG	CPU	Fuel Blocks	Starbase Charter	Strontium Clathrates
Minmatar Small	1 093 750	1 500	10	1	100
Angel Small	1 093 750	1 500	9	1	100
Domination Small	**1 093 750**	**1 500**	**8**	**1**	**100**
Minmatar Medium	2 187 500	3 000	20	1	200
Angel Medium	2 187 500	3 000	18	1	200
Domination Medium	**2 187 500**	**3 000**	**16**	**1**	**200**
Minmatar Large	4 375 000	6 000	40	1	400
Angel Large	4 375 000	6 000	36	1	400
Domination Large	**4 375 000**	**6 000**	**32**	**1**	**400**

POS Fuel Bays

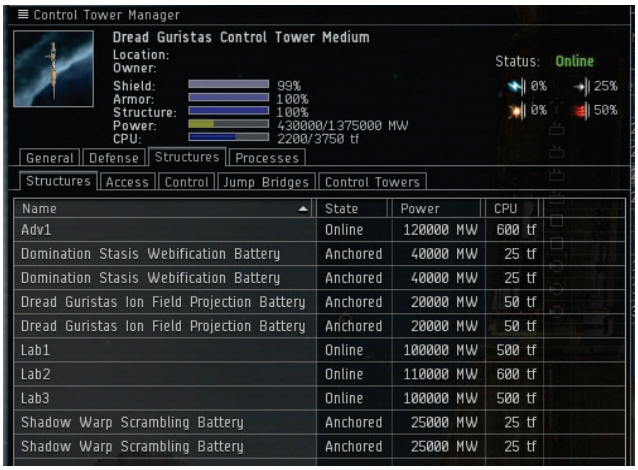
Every tower has two fuel bays: one for the regular fuel (fuel blocks) and an another for the Strontium (emergency fuel for the reinforced mode). Don't forget: you can turn on and use the POS without Strontium, but in a case of emergency (somebody just attack the tower and shot down the shields), the tower will be vulnerable, and without any doubt, will be destroyed. We can re-fuel the POS with fuel easily, just move the fuel within range, then open the fuel bay with the „Access Fuel Bay" in the contextual menu, then drag & drop the fuel into the fuel bay. The regular fuel bay size is very decent, we can store fuel there for a whole month. If at any time your Control Tower runs out of fuel, all of its structures including defensive weapons and the shield protecting interior structures such as Mobile Laboratories will shut down.



The State Of The POS

Right-clicking on a tower and selecting 'Manage' will bring up a screen with the following information:

- The size and type of the POS
- The rate of fuel consumption
- How much fuel is in the fuel bay and how long it will last
- The state of the Shield, Armor and Structure
- Resists of the Shield
- How much PG and CPU are available



The Structure tab has access to the list of POS modules, their state, and the fuel consumption. The following options can be reached directly through this tab:

- **„Anchor"**: Anchor the previously launched module in space; it is required to set the module online.
- **„Unanchor"**: Unanchoring an offline module will allow it to be scooped.
- **„Put Online"**: You can remotely online modules from within the protection of the POS's forcefield, so in time of war you will not have to risk your ship.
- **„Put Offline"**: You can put a particular module offline, saving some precious (and sometimes necessary) fuel. This is a great solution if you want to save on fuel expenses by keeping protection modules offline when they are not needed. For example, offlining guns on high-sec POSes when not at war is common.

Overly Attached Modules

There are POS modules for every industrial activity on a station. Typically, these modules can do their research jobs more quickly. There are also modules that can perform tasks that can only be done at a POS, for example, building supercapitals, moon harvesting, and reaction processing.

The following is a list of POS modules that can be anchored and onlined at a POS site. Some modules require specific conditions in order to be utilized, such as system security, and available PG and CPU on the tower. The maximum range from a control tower at which structures may be anchored (the non-forcefield modules only, like the weapons!):

- Small: 55km
- Medium: 60km
- Large: 65km

The easiest way to obtain these modules is to buy them on the market or via contracts. Then, take them to the Control Tower, which must be online, and launch, anchor and online the modules. All Player Owner Structures can be renamed via the right click and Set Name function.

Reprocessing Array

This is commonly known as a Mobile Refinery, or refining module. It enables you to refine extracted ores at the POS like you would at a normal station. However, the reprocessing efficiency is low. There are different module types:

Name	Capacity	Efficiency	PG	CPU
Intensive Reprocessing Array	200,000 m^3	54%	200,000 mw	1,000 tf
Reprocessing Array	200,000 m^3	52%	150,000 mw	750 tf

Corporate Hangar Array

Used as a remote warehouse in space with the same tabs as the corp hangars in stations. These modules have 3,000,000 m^3 capacity. It may not seem much, but for ores, minerals, loot and modules it is plenty.

Capacity	**3 000 000 m^3**
PG	**100 000 MW**
CPU	**150 tf**
Volume	**4 000 m^3**

Personal Hangar Array

Designed for secure storage of smaller high value items in starbases, the PHA can hold 50k m^3 of items for each character that uses it. There is no limit to the number of characters that can store items in the PHA. When accessing the PHA a character will only see their own items, not the items belonging to anyone else. When the structure is unanchored all items within the PHA are lost.

Capacity	50 000 m^3
PG	100 000 MW
CPU	150 tf
Volume	4 000 m^3

Ship Maintenance Array

You can park your ship here. However, upon docking, you will automatically be in your pod! Do not worry that your ship or your pod are in danger because the forcefield protects you. This module also provides fitting services within 3,000 meters range of it. The ship modules should either be in your cargo, or can be taken out directly if you are in range. Drag and drop them or open the fitting window and use it as if you were in station.

Capacity	1 400 000 m^3
PG	100 000 MW
CPU	150 tf
Volume	8 000 m^3

Moon Harvesting Array

This array is the essential tool for moon harvesting. It is able to extract raw materials from the nearby moon, and then forward them to a storage silo or to a reactor. It is important to know that you can only harvest moons in 0.3 systems or below.

Capacity	-
PG	10 000 MW
CPU	500 tf
Volume	4 000 m^3

Silo

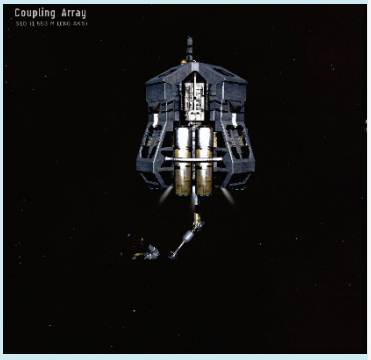
Silos are storage spots for raw materials, processed materials, advanced materials or minerals, but they can only store one item of a particular type at a time. This can only be changed when it is empty and offline.

Capacity	**20 000m³**
PG	**50 000 MW**
CPU	**500 tf**
Volume	**4 000 m³**

Coupling Array

The coupling array can be considered temporary storage between two modules. For example, if it is linked between a Moon Harvester and a Silo, then the harvested materials will be temporarily stored here. If this module wasn't linked, some materials could be lost when the silo goes offline for emptying. Especially useful when the two modules it links between are working at different speeds. Two harvesters and one reactor are a common combination for this. The harvesters each extract 100 units per hour, but the reactor can only process those materials in two hour cycles. The materials are stored in the array until the next cycle.

Capacity	**1 500m³**
PG	**10 000 MW**
CPU	**155 tf**
Volume	**4 000 m³**



Electronic Warfare

There are many electronic warfare modules. Each one does a specific function, such as warp scrambling, warp disruptions, sensor dampening, stasis webifying, electronic counter measures, and energy neutralizers. These modules activate automatically depending on the security settings of the POS. Anchoring level III is required to place them.

Capacity	**Varies**
PG	**Varies**
CPU	**Varies**
Volume	**4 000 m³**

Reactors

These are areas for mixing and matching various different substances.

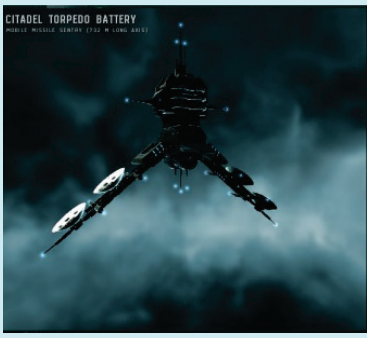
Capacity	Varies
PG	Varies
CPU	Varies
Volume	Varies

Turret Battery & Missile battery

The difference between normal and 'death star' type POSes is the ability to destroy enemies quickly. POS weapons come in different sizes, ranging from small to large. Some of the larger turrets can have an incredible range.

For example, a Large Projectile turret onlined at a Minmatar POS with an 85x modifier can shoot to distances of 400km! (In theory…)

Capacity	Varies
PG	Varies
CPU	Varies
Volume	4 000 m^3



Assembly Arrays

This module provides a facility for ship manufacturing. Different sizes are required to manufacture different ship categories. Advanced arrays are for manufacturing Tech II ships. There are also Assembly Arrays for different kinds of equipment such as ammunition, component, rapid equipment, and subsystem assembly arrays. Their name typically tells you what type of manufacturing they handle.

Capacity	Varies
PG	Varies
CPU	Varies
Volume	Varies

Research Laboratories

This module is a crucial tool for research. There are several types:

- **Research Laboratory**
- **Design Laboratory**
- **Experimental Laboratory**

They each have a different combination of research slots and research bonuses.

Capacity	**Varies**
PG	**Varies**
CPU	**Varies**
Volume	**Varies**

Compression Array

This structure contains equipment needed to compress various ore and ice materials for easy transportation across the universe. This structure compresses ore and ice instantly by right-clicking them in its cargohold.

This array does not have a particular restriction on security level and may be anchored in Empire sovereign space.

Capacity	**2 000 000 m^3**
PG	**100 000**
CPU	**500**
Volume	**6 000 m^3**

Required Skills

As with everything else, you need skills to anchor and use POSes, and you must have rights or roles to manage a tower, refinery and ship maintenance array.

Anchoring: Needed for the placement of modules and towers. Usually trained to level I will do, but POS Warfare Modules (jammers) need level III. Mobile Warp Disruptors need level III for smalls, level IV for mediums, and level V for large.

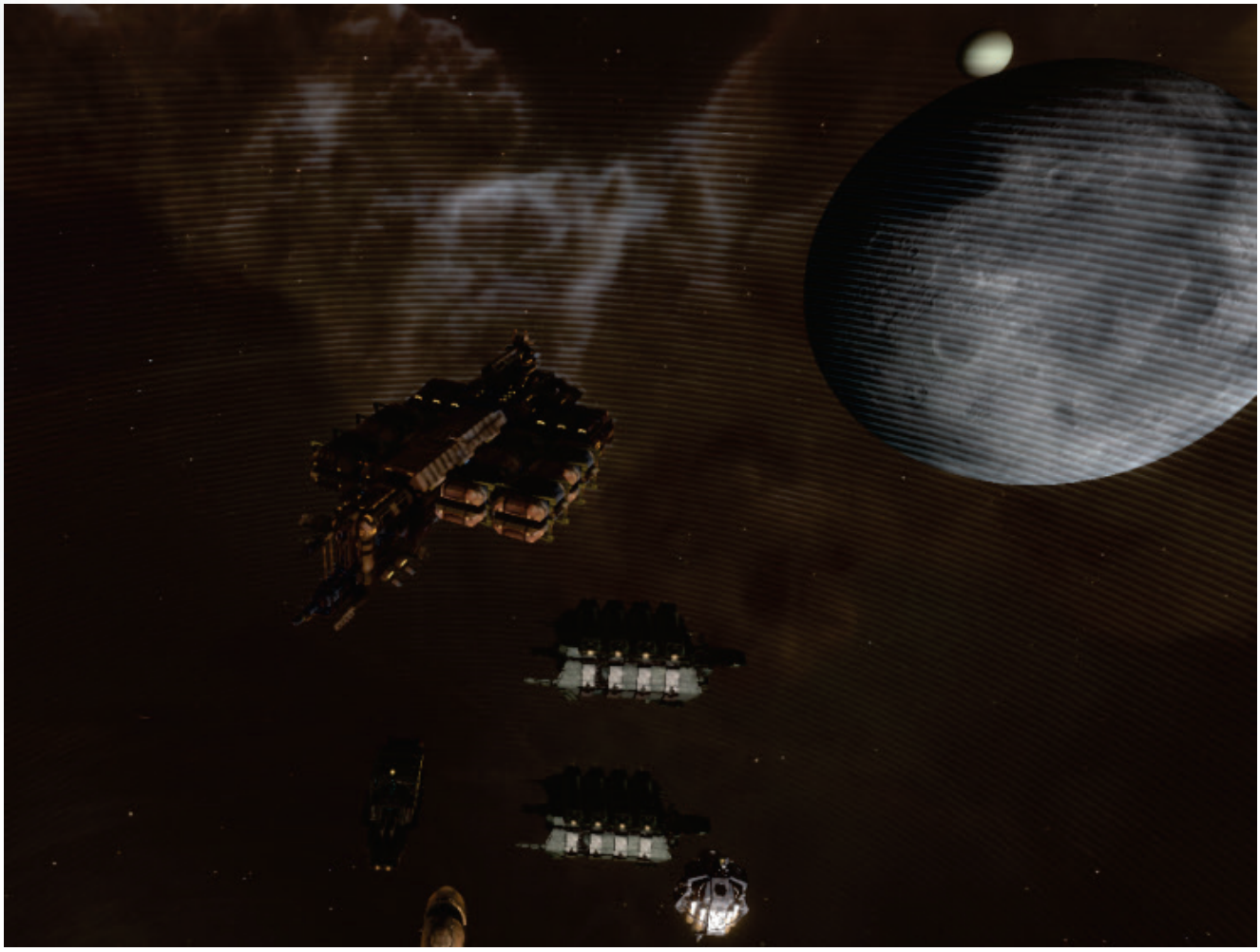
Starbase Defense Management: This is needed for manual control of the weapons. The skill level of 'Rifleman' determines the number of controllable weapons a pilot can manage. The prerequisite is Anchoring level V.

It is not a direct prerequisite, but it is strongly recommended to use a transport ship with larger cargo capacity to haul the tower, modules, and fuel to the anchoring site. Freighters (and the Orca) are the best. Carriers and industrials are close seconds.

The size of the towers are:

- **Small:** 2000m^3
- **Medium:** 4000m^3
- **Large**: 8000m^3

Most modules are around 4,000 m^3, and the needed fuel is another tens of thousands m^3 (for a month, it's 140 000 m^3). The transport of the harvested materials and manufactured reactions haven't been mentioned yet either. Do not forget about the need to haul these out.



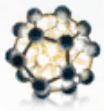
Module Properties

Array Name	Note	
	Usable For	Properties
Advanced Large Ship Assembly Array	Black Ops, Marauder, Jump Freighter	25% reduction in manufacturing required time 2% reduction in manufacturing required materials
Advanced Medium Ship Assembly Array	Command ship, Exhumer, HAC, Logistics, Recon, Transport, HIC	25% reduction in manufacturing required time 2% reduction in manufacturing required materials
Advanced Small Ship Assembly Array	AF, Cov Ops, Interceptor, Interdictor, Stealth Bomber, Electronic Frig.	25% reduction in manufacturing required time 2% reduction in manufacturing required materials
Ammunition Assembly Array	All types of ammo (T1 & T2)	25% reduction in manufacturing required time 2% reduction in manufacturing required materials
Component Assembly Array	Adv & Capital Construction Comp., Construction Comp., Station Comp., Tools	25% reduction in manufacturing required time 2% reduction in manufacturing required materials
Capital Ship Assembly Array	Battleship, Carrier, Dreadnought, Freighter, Orca	25% reduction in manufacturing required time 2% reduction in manufacturing required materials
Component Assembly Array	Capital Ship, Tech II and Hybrid (Tech III) Components of all sorts can be manufactured.	25% reduction in manufacturing required time 2% reduction in manufacturing required materials
Drone Assembly Array	Every Drone (EW too) (Fighter = Small Ship Assembly Array)	25% reduction in manufacturing required time 2% reduction in manufacturing required materials
Equipment Assembly Array	Equipment, Modules, Implants, Material, Rigs	25% reduction in manufacturing required time 2% reduction in manufacturing required materials
Large Ship Assembly Array	Battleship, Freighter, Orca	25% reduction in manufacturing required time 2% reduction in manufacturing required materials
Medium Ship Assembly Array	BC, Cruiser, Industrial Ships, Mining Barge	25% reduction in manufacturing required time 2% reduction in manufacturing required materials
Small Ship Assembly Array	Destroyer, Fighters, Frigate, Shuttle	25% reduction in manufacturing required time 2% reduction in manufacturing required materials
Rapid Equipment Assembly Array	Equipment, Modules, Implants, Material, Rigs	35% reduction in manufacturing required time 5% penalty in manufacturing required materials
Subsystem Assembly Array	Tech III ship subsystem	This structure has no specific time or material requirement bonuses to subsystem manufacturing.
Supercapital Ship Assembly Array	Titan, Mothership	This structure has no specific time or material requirement bonuses to ship manufacturing.
Research Laboratory	30% reduction in research ME required time 30% reduction in research TE required time	
Design Mobile Laboratory	40% reduction in copy activity required time 50% reduction in invention required time	
Experimental Laboratory	This structure has Reverse Engineering activities (with no specific time or material bonuses).	
Drug Laboratory	A laboratory to produce performance enhancing drugs. This structure has no specific time or material requirement bonuses to booster manufacturing.	

The following chart shows whether a module can be anchored and put online in high-sec (minimum requirement of the system in brackets):

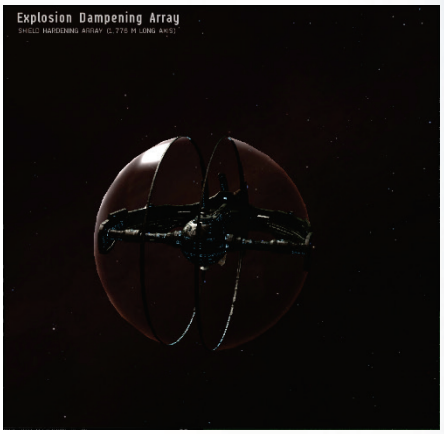
Module Name	Anchor	Online	Note
Advanced Large Ship Assembly Array	Yes	Yes	–
Advanced Medium Ship Assembly Array	Yes	Yes	–
Advanced Small Ship Assembly Array	Yes	Yes	–
Ammunition Assembly Array	Yes	Yes	–
Component Assembly Array	Yes	Yes	–
Drone Assembly Array	Yes	Yes	–
Equipment Assembly Array	Yes	Yes	–
Extra Large Ship Assembly Array	No (0.4)	No (0.4)	Cannot Anchor in High-sec
Large Ship Assembly Array	Yes	Yes	–
Medium Ship Assembly Array	Yes	Yes	–
Small Ship Assembly Array	Yes	Yes	–
Rapid Equipment Assembly Array	Yes	Yes	–
Corporate Hangar Array	Yes	Yes	–
Energy Neutralizing Battery	Yes	Yes	–
Biochemical Reactor Array	No (0.3)	No (0.3)	–
Medium Biochemical Reactor Array	No (0.3)	No (0.3)	–
Medium Reactor Array	No (0.3)	No (0.3)	–
Complex Reactor Array	No (0.3)	No (0.3)	–
Reactor Array	No (0.3)	No (0.3)	–
Moon Harvesting Array I	No (0.3)	No (0.3)	–
Intensive Reprocessing Array	No (0.4)	No (0.4)	–
Reprocessing Array	Yes	Yes	–
Compression Array	Yes	Yes	–
X-Large Ship Maintenance Array	No (0.4)	No (0.4)	–
Ship Maintenance Array	Yes	Yes	–
Capital Ship Assembly Array	No (0.0)	No (0.0)	Sovereignty Index 1 is required Supercap Const. Facil. Upg. req.
System Scanning Array	No (0.0)	No (0.0)	Not in-game (Removed)
Jump Bridge	No (0.0)	No (0.0)	Sovereignty Index 3 required Adv. Logis. Network Upg. req.
Cynosural System Jammer	No (0.0)	No (0.0)	Sovereignty Index 3 required Cynosural Supp. Upg. required
Cynosural Generator Array	No (0.0)	No (0.0)	Sovereignty Index 2 required Cynosural Nav. Upg. required
Research Laboratory	Yes	Yes	–
Design Laboratory	Yes	Yes	–
Experimental Laboratory	Yes	Yes	–
Subsystem Assembly Array	Yes	Yes	–
Polymer Reactor Array	No (0.3)	No (0.3)	–

How To Resist – The Shield Hardening Array



Just like shield hardener modules, shield hardener arrays increase the resistances of the shield against different types of damage. There are modules for each of the four kinds of damage types. You can see the results of a test shooting in the chart below. The optimal hardener value is underlined. Since every race has resistance against two types of damage, it is common to fit hardeners that complement these built-in resistances. Pay attention to the PG and CPU requirements of the modules you online so you have resources for other needed modules.

One Module		Large Minmatar Tower	
CPU	250	**CPU**	6,000
Power	150,000	**Power**	4,375,000
		16 hardeners	
CPU			4,000
Power			2,400,000
		13 hardeners (Optimal)	
CPU			3,250
Power			1,950,000



Resist / Number of hardeners	Cruise Missile Damage	Citadel Torpedo Damage
EM		
50% Base	256	9 819
62% (+1)	195	7 462
71% (+2)	**148**	**5 695**
78% (+3)	113	4 320
84% (+4)	82	3 142
88% (+5)	61	2 357
91% (+6)	46	1 767

Resist / Number of hardeners	Cruise Missile Damage	Citadel Torpedo Damage
Explosive		
0% Base	512	19 638
25% (+1)	384	14 729
43% (+2)	292	11 194
57% (+3)	220	8 444
68% (+4)	**164**	**6 284**
76% (+5)	123	4 713
82% (+6)	92	3 535

Resist / Number of hardeners	Cruise Missile Damage	Citadel Torpedo Damage
Kinetic		
0% Base	512	19 638
25% (+1)	384	14 729
43% (+2)	292	11 194
57% (+3)	220	8 444
68% (+4)	**164**	**6 284**
76% (+5)	123	4 713
82% (+6)	92	3 535

Resist / Number of hardeners	Cruise Missile Damage	Citadel Torpedo Damage
Thermal		
25% Base	384	14 729
43% (+1)	292	11 194
57% (+2)	220	8 444
68% (+3)	**164**	**6 284**
76% (+4)	123	4 713
82% (+5)	92	3 535
86% (+6)	72	2 749

Moon Surveying

Before you harvest a moon, you need to survey it in order to find out what materials it will yield. Keep in mind that you only need to survey moons in 0.3 systems or lower, because you cannot anchor a moon harvester in higher security status systems.

Be careful when 'warping to zero' at moons. Should you arrive at an armed, online POS then your scanning operation will have a very short life. But look on the bright side, at least the owner of the POS will get your kill mail.

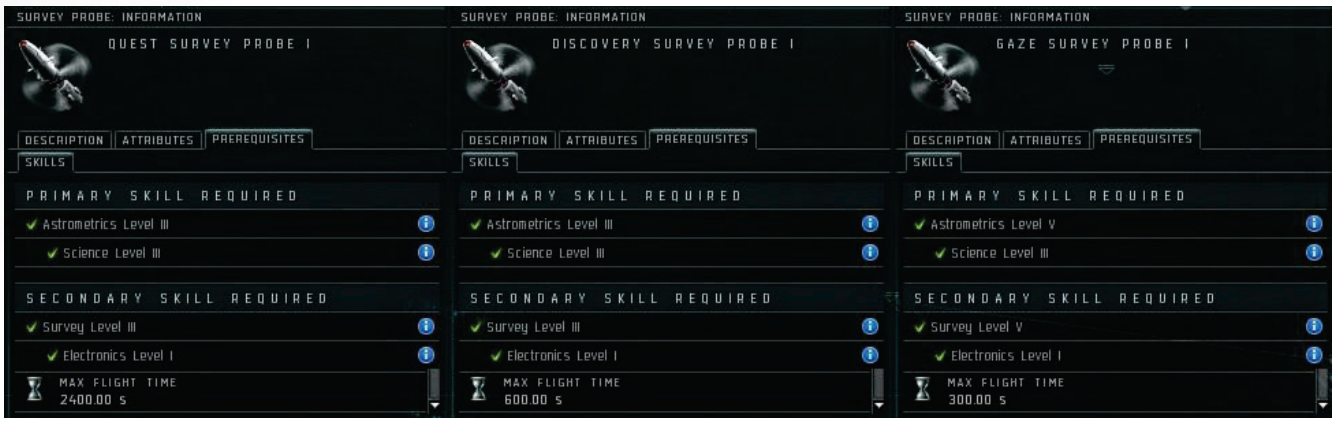
Required Equipment

You must choose a ship with sufficient cargo and CPU to put on an Expanded Probe Launcher, and have enough room for a lot of Moon Probes in your ship cargo. An ideal choice is the transport ship class. If there are 50 moons in a system and you want to survey them all, keep in mind the amount of cargo space you'll need in order to bring along enough probes for them all. Normally, the fitting setup can be something like:

- **High-slot:** Survey Probe Launcher, Cloaking Device
- **Med Slot:** Afterburner or Microwarpdrive
- **Low Slot:** Inertia Stabilizer, Nanofiber Structure, so you can align to the moon faster

Survey Probes

These work the same as other probes (see the Exploration chapter for more details on probing). Launch them, then wait for the result. There are three types, which differ in scanning time and skill requirement. The faster a probe, the more skill is needed and also the more expensive they are.



- **Quest survey probe I**: 40 minutes scan time, skills needed: Astrometrics III, Survey III
- **Discovery survey probe I**: 10 minutes scan time, skills needed: Astrometrics III, Survey III
- **Gaze survey probe I**: 5 minutes scan time, skills needed: Astrometrics V, Survey V

Survey progress

You have two options to start out with when surveying moons. On the one hand, you can warp to the given moon in your pod and check if there is something there or not (a POS will not shoot a pod under any circumstance). If no POS is already there, you can return later with a scanning ship.

On the other hand, you can warp to the given planet instead of the moon, and use the directional scanner, selecting a 360° angle. If you see a Control Tower, check the individual moons before warping there.

The point is to **never warp blindly to a moon with a ship**, because it might end with "WTFPWNED" and a lossmail.

Now that you know what not to do, here is what you should do:

1. Warp to the moon (provided it has nothing anchored to it already), if it does not show on the overview, add it, so it will be easier to target.
2. Align to the moon and make sure you are moving toward it.
3. Launch the probe. It will fly to the moon if you have aimed well. When the scan time elapses you will get the scan results. If you missed the moon, you will get a 'Probe Communication Failed' error message. If you succeeded, the Moon Analysis will become active and you can see what you have found there.
4. **Beware! If you leave the system, change ships or dock, you will not get the results!**

At this point, you can cloak at a safe spot and wait for the results.

The Results

If the scanning is successful, you will see the raw materials the moon will yield as well as the abundance of that material. The abundance is an indication of how much of that material can be extracted in a cycle. This value varies from one to four.

If you found something you want to harvest, then plan ahead. In many cases, it is nearly impossible to set up and defend a POS, much less transport fuel in and reactions out, if you are smack in the middle of enemy territory.

Also, take a hard look at if the harvesting is worth the effort. POSes need fuel, which is not free, even if you harvest the ice. If the POS costs more than it will make, then you should do something more profitable, like NPC hunting, running missions, or simply mining.

Moon Harvesting

Moon harvesting is similar to mining, but here a POS is used to harvest bigger ore, the source of which never depletes. The materials yielded will be the base materials for Tech II equipment, but they need to be processed into reactions first.

You Will Need

- A **mineable Moon** in a 0.3 system or below
- A **POS** with a **Moon Harvesting Array** module
- A Silo to store the materials
- A Reactor if you want these materials to be processed

Reaction Blueprints

Reaction BPOs, like normal equipment and ship blueprints, are necessary to make something 'more complex' from raw materials.

Processing reactions has several stages. The simplest way to understand this process is to think of it as baking bread.

Raw Materials	Processed Materials	Advanced Materials
Wheat	**Flour**	**Bread**

In order to make advanced materials, you need the basic minerals and the appropriate blueprint. These can be further processed to create more complex reactions. You can sell the raw materials harvested from a moon if you want to. Dealing in reactions can get you into the market of Processed Materials, or if you want the big money then create advanced materials and Tech II equipment and ships.

There are two levels of processing: simple reactions and complex reactions:

First step: **Raw materials** -> **[Simple reaction blueprint]** -> **Processed Materials**. So crops + skill (BPO) makes flour.

Second step: **Raw Processed Materials** -> **[Complex reaction blueprint]** -> **Advanced Materials.** So flour + skill (BPO) = Bread.

In order to use these blueprints, you just need to put them into the reactor along with the necessary materials and start the reaction.

Or, to be more specific:

- Right-click on the Reactor and choose Access Resources.
- Drag and drop the materials and the BPO into the reactor.
- Set the reactions from the tower's production tab before you start it.
- Start the reactor by onlining it.

Do not forget to link the silos and reactors on the production tab. Raw material that is stored in the silo is listed on the right. That same material should go into the reactor on the left. The resulting reaction will be displayed to the right of the reactor. Once this is all setup, click Apply to save the path. If you do not, it will not work.

Harvesting: How To

Before you can set up for harvesting, you must find a moon you want to harvest from. Once you've located this, and have placed the POS, the moon harvester and the silo, you must set up the workflow.

By default, all tasks are offline. These can be modified through the control tower's interface. Keep in mind that any change in the workflow or process can only be done if the affected modules are offline.

First step: Setting the Harvester(s)

Open the Control Tower's management tool and go to the Production tab. Choose 'Change Type' at the moon harvest option, and then choose one of the materials you can harvest from the moon. Finally, click Apply.

Second step: Choosing the Silo

Just like with setting up the harvesters, choose Change Type. You can choose only one material for storage.

Third step: Linking

Once the materials have been set, all you have to do is to connect the harvester array's output to the silo's input. Do not forget to click Apply, and then set the modules online. Always online the silo first, and the harvester last.

The Art Of Reactions

Phase One: The Raw Materials

Now that you know how to harvest, how do you figure out what to harvest? There are two types of raw materials: gases and metals. Gases are more common. Metals are (can be) extremely rare.

Gases	
Atmospheric Gases	CO_2
Evaporite Deposits	KCl
Hydrocarbons	CH_4
Silicates	SiO_2

Metals			
Cadmium	Cd	Platinum	Pt
Caesium	Cs	Promethium	Pm
Chromium	Cr	Scandium	Sc
Cobalt	Co	Technetium	Tc
Dysprosium	Dy	Thulium	Tm
Hafnium	Hf	Titanium	Ti
Mercury	Hg	Tungsten	W
Neodymium	Nd	Vanadium	V

Moon harvesting arrays can harvest 100 units in a cycle, but they can only harvest one material. If a moon yields two different raw materials then you will need two harvesters in order to pull them both. Once harvesting is set up, the process will continue automatically until you either stop the process or the destination silo is filled.

In order to empty the silo, it needs to be offline, so a coupling array can be a useful buffer. It is not difficult to set this up. Set the harvester's output to the coupling array and link the array to the silo. When you empty the silo, you can avoid any gaps in harvesting with this setup.

Now that we have some raw materials, we can either sell them or process them further.

Phase Two: The Processed Materials

If you want to process the raw materials further instead of selling them, you will need a reactor array and a BPO for that reaction.

Just like when manufacturing modules and ships, new materials are created from combining raw materials in a reactor, according to a blueprint plan. The difference is that the raw materials are the minerals mined from moons instead of asteroids.

You can only use the materials listed in the blueprint to manufacture the reaction. In other words, the reaction will only work with those materials.

Once anchored, the reactor needs to be set up for manufacturing. Place the blueprint for your desired reaction into the reactor's hold. The reactor automatically recognizes it and indicates whether one or more materials are needed for the reaction to start. Normally the reactor will check the content of the connected silo, and offers those materials for use. You can also supply the reactor with the necessary materials directly from a harvester, but this is not as efficient.

After setting the source of the raw materials, select an output silo for the processed material or reaction. If everything is set, the reaction will start. In this case, the raw material from the silo or the harvester will flow to the reactor. Fitted with the appropriate blueprint, the reactor will create a new material. This new material flows to the output silo for storage. If you do not have a material needed for a reaction, you can buy it or get it by using another POS and transport the material to this POS for the reaction.

Once the reaction process is complete, the next step is to decide whether to take your product to market or use it to make more advanced construction materials.

Reactions, or processed materials created by reactors, are mixtures of the following gases and metals:

Reaction Name	Raw Materials		Processed Material
Caesarium Cadmide Reaction	100 x Caesium	100 x Cadmium	200 x Caesarium Cadmide
Carbon Polymers Reaction	100 x Hydrocarbons	100 x Silicates	200 x Carbon Polymers
Ceramic Powder Reaction	100 x Evaporite Deposits	100 x Silicates	200 x Ceramic Powder
Crystallite Alloy Reaction	100 x Cadmium	100 x Cobalt	200 x Crystallite Alloy
Dysporite Reaction	100 x Dysprosium	100 x Mercury	200x Dysporite
Fernite Alloy Reaction	100 x Scandium	100 x Vanadium	200 x Fernite Alloy

Reaction Name	Raw Materials		Processed Material
Ferrofluid Reaction	100 x Dysprosium	100 x Hafnium	200 x Ferrofluid
Fluxed Condensates Reaction	100 x Neodymium	100 xThulium	200 x Fluxed Condensates
Hexite Reaction	100 x Chromium	100 x Platinum	200 x Hexite
Hyperflurite Reaction	100 x Promethium	100 x Vanadium	200 x Hyperflurite
Neo Mercurite Reaction	100 x Mercury	100 x Neodymium	200x Neo Mercurite
Platinum Technite Reaction	100 x Platinum	100 x Technetium	200 x Platinum Technite
Promethium Mercurite Reaction	100 x Promethium	100 x Mercury	200 x Promethium Mercurite
Prometium Reaction	100 x Cadmium	100 x Promethium	200 x Prometium
Rolled Tungsten Alloy Reaction	100 x Platinum	100 x Tungsten	200 x Rolled Tungsten Alloy
Silicon Diborite Reaction	100 x Evaporite Deposits	100 x Silicates	200 x Silicon Diborite
Solerium Reaction	100 x Caesium	100 x Chromium	200 x Solerium
Sulfuric Acid Reaction	100 xAtmospheric Gas.	100 x Evaporite Dep.	200 x Sulfuric Acid
Thulium Hafnite Reaction	100 x Thulium	100 x Hafnium	200 x Thulium Hafnite
Titanium Chromide Reaction	100 x Chromium	100 x Titanium	200 x Titanium Chromide
Vanadium Hafnite Reaction	100 x Vanadium	100 x Hafnium	200 x Vanadium Hafnite

Phase Three: The Advanced Materials

Just like before, you can process the materials you already have further. These will be the basic materials for Tech II manufacturing. Every Advanced Material is made of two or more primary materials (as the primary materials are made similarly). Do not forget that if you want to change the reactor's contents, you have to empty and set the silo to offline and the reactor as well. In practice, the process is the same as in the case of the Processed Materials, only with different materials and blueprints used.

Reaction Name	Processed Materials		Advanced Materials
Crystalline Carbonide Reaction	100 x Crystallite Alloy + 100 x Carbon Polymers	»	10000 x Crystalline Carbonide
Fermionic Condensates Reaction	100 x Caesarium Cadmide + 100 x Dysporite + 100 x Fluxed Condensates + 100 x Prometium	»	200 x Fermionic Condensates
Fernite Carbide Reaction	100 x Fernite Alloy + 100 x Ceramic Powder	»	10000 x Fernite Carbide
Ferrogel Reaction	100 x Hyperflurite + 100 x Hexite + 100 x Ferrofluid + 100 x Prometium	»	400 x Ferrogel
Fulleride Reaction	100 x Carbon Polymers + 100 x Platinum Technite	»	3000 x Fullerides
Hypersynaptic Fibers Reaction	100 x Solerium + 100 x Dysporite + 100 x Vanadium Hafnite	»	750 x Hypersynaptic Fibers
Phenolic Composites Reaction	100 x Silicon Diborite + 100 x Caesarium Cadmide + 100 x Vanadium Hafnite	»	2200 x Phenolic Composites
Sylramic Fibers Reaction	100 x Ceramic Powder + 100 x Hexite	»	6000 x Sylramic Fibers

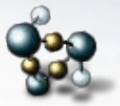
Reaction Name	Processed Materials			Advanced Materials
Nanotransistors Reaction	100 x Sulfuric Acid	100 x Platinum Technite + 100 x Neo Mercurite		1500 x Nanotransistors
Titanium Carbide Reaction	100 x Titanium Chromide	100 x Silicon Diborite		10000 x Titanium Carbide
Tungsten Carbide Reaction	100 x Rolled Tungsten Alloy	100 x Sulfuric Acid		10000 x Tungsten Carbide
Nonlinear Metamaterials Reaction	100 x Ferrofluid	100 x Titanium Chromide		300 x Nonlinear Metamaterials
Photonic Metamaterials Reaction	100 x Thulium Hafnite	100 x Crystallite Alloy		300 x Photonic Metamaterials
Plasmonic Metamaterials Reaction	100 x Neo Mercurite	100 x Fernite Alloy		300 x Plasmonic Metamaterials
Terahertz Metamaterials Reaction	100 x Promethium Mercurite	100 x Rolled Tungsten Alloy		300 x Terahertz Metamaterials

Alchemy – Hunting The Philosopher's Stone

Making basic materials can be simple, but they don't sell for that much. Making the most complex materials is far more lucrative. But how does it work? There are six reactions making these expensive materials from relative worthless ones.

For example, take Ferrofluid. There are two ways to make Ferrofluid. The first method is to take 100 units of Hafnium and 100 units of Dysprosium to make 200 units of Ferrofluid.

The problem is that Dysprosium is very rare, and is very expensive on the market. Dysprosium moons are even rarer, and are usually controlled by large alliances.



The second method is less efficient, but much cheaper. One unit of raw Ferrofluid is processed from 100 units of Hafnium and 100 units of Cadmium. After refining, there will be 73 units of Ferrofluid and 173 units of Hafnium (it will be less, because the reprocessing efficiency). Refining can be done anywhere. Naturally, the efficiency and standing rules apply for the refinery process in this case as well.

Reaction Name	Raw Materials		Processed Material	After Refining	
Unrefined Caesarium Cadmide Reaction	100 x Scandium	100 x Cadmium	1 x Unrefined Caesarium Cadmide	36 x Caesarium Cadmide	164 x Cadmium
Unrefined Crystallite Alloy Reaction	100 x Silicates	100 x Cobalt	1 x Unrefined Crystallite Alloy	36 x Crystallite Alloy	164 x Cobalt
Unrefined Dysporite Reaction	100 x Cadmium	100 x Mercury	1 x Unrefined Dysporite	73 x Dysporite	173 x Mercury
Unrefined Fernite Alloy Reaction	100 x Hydrocarbons	100 x Scandium	1 x Unrefined Fernite Alloy	36 x Fernite Alloy	164 x Scandium
Unrefined Ferrofluid Reaction	100 x Cadmium	100 x Hafnium	1 x Unrefined Ferrofluid	73 x Ferrofluid	173 x Hafnium
Unrefined Fluxed Condensates Reaction	100 x Platinum	100 x Vanadium	1 x Unrefined Fluxed Condensates	73 x Fluxed Condensates	–
Unrefined Hexite Reaction	100 x Evaporite Deposits	100 x Atmospheric Gases	1 x Unrefined Hexite	36 x Hexite	–
Unrefined Hyperflurite Reaction	100 x Chromium	100 x Vanadium	1 x Unrefined Hyperflurite	73 x Hyperflurite	173 x Vanadium
Unrefined Neo Mercurite Reaction	100 x Platinum	100 x Mercury	1 x Unrefined Neo Mercurite	73 x Neo Mercurite	173 x Mercury

Reaction Name	Raw Materials		Processed Material	After Refining	
Unrefined Platinum Technite Reaction	100 x Cobalt	100 x Platinum	1 x Unrefined Platinum Technite	36 x Platinum Technite	164 x Platinum
Unrefined Promethium Mercurite	100 x Chromium	100 x Mercury	1 x Unrefined Promethium Mercurite	73 x Promethium Mercurite	173 x Mercury
Unrefined Prometium Reaction	100 x Chromium	100 x Cadmium	1 x Unrefined Prometium	73 x Prometium	173 x Cadmium
Unrefined Rolled Tungsten Alloy Reaction	100 x Atmospheric Gases	100 x Tungsten	1 x Unrefined Rolled Tungsten Alloy	36 x Rolled Tungsten Alloy	164 x Tungsten
Unrefined Solerium Reaction	100 x Scandium	100 x Chromium	1 x Unrefined Solerium	36 x Solerium	164 x Chromium
Unrefined Thulium Hafnite	100 x Vanadium	100 x Hafnium	1 x Unrefined Thulium Hafnite	73 x Thulium Hafnite	173 x Hafnium.
Unrefined Titanium Chromide Reaction	100 x Evaporite Deposits	100 x Titanium	1 x Unrefined Titanium Chromide	36 x Titanium Chromide	164 x Titanium
Unrefined Vanadium Hafnite Reaction	100 x Titanium	100 x Vanadium	1 x Unrefined Vanadium Hafnite	36 x Vanadium Hafnite	164 x Vanadium

Teamwork

As you can see, such a business operation is really time, energy and money-consuming. Complete production lines are set up and operated by several friendly corporations or alliances. One POS, even if it is a large one, is not able to supply enough PG and CPU for so many harvesters, reactors and silo modules.

Then there are still the POS defence modules to consider. Fuel supply is an essential element. The expense and logistics of getting fuel to a POS can be difficult for a small corp to handle.

Before embarking on a POS project, calculate the cost and profits to see if it is worth even attempting. If you produce Tech II equipment on your own moon, you can make quite a profit, but remember to take into account what it costs to make that item. In the end, it may be most cost effective to share this operation among corporation members.

Useful Advice

Set up your POS in such a way that it is easy to recognize which silo contains what materials, so that you do not have to constantly check the POS Production tab. For example, going from top to bottom, arrange the silos like this: basic materials, the reactor, then output materials.

This produces basic materials from moon ore, and moves it to the reactor to create the complex reaction. A side silo in the line could be a coupling array. You never have to put the reactors offline if they empty into the coupling array and that in turn empties into a storage silo.

There are two recommended setups:

- The hangar should be next to the tower, so that you can put the fuel in with just one move even when sitting in a shuttle.
- Likewise, the silos should be anchored within range of the hangar.

The Deployables

Encounter Surveillance System

An active ESS in a system changes the direct payout value (NPC Pirate Bounty) to 80%, but further 20% is stored in a system-wide pool that can be accessed through the ESS. This additional bounty payment can rise to 25% over time. So, players have the choice to either skip using an ESS and get 95% bounty value, or use ESS and generate 100% up to 105% of bounty value, but have a portion of it be at risk. There is four variations, one for each race. The racial variations are all statistically the same.

The ESS is sold directly from empire navy stations (so the Gallente Encounter Surveillance System is sold in Federation Navy stations, for instance). The ESS is sold for 25 million ISK.

There is a warp disruption bubble with a radius of 15 km around the ESS. Can only be deployed in null sec, max one per system. Cannot be deployed close to stargates, stations or starbases. Can be scooped by player that deployed it.

Please note that: **Anyone can access the ESS**, but the ESS cannot be accessed while cloaked.

Mobile Cynosural Inhibitor

The value of a disposable Mobile Cynosural Inhibitor will be immediately obvious to many pilots living in low security space. When deployed, this structure prevents all normal cynosural fields (but not covert cynosural fields) from activating within 100km. This allows groups of players to shield themselves from hotdrops, control how their opponents can deploy capital ships, and generally influence the low and nullsec battlefield in ways that have never been possible before.

The Mobile Cyno Inhibitor takes two minutes to activate, and lasts one hour in space. The Cyno Inhibitor is a one-time use item that cannot be scooped back into cargo. Once it has been deployed it remains in space until either one hour has passed or someone pew pews it to death, whichever comes first.

The Cyno Inhibitor also cannot be deployed in any location where its area of effect would overlap with another identical module.

Mobile Depot

The Mobile Depot is intended to provide a simple home base that can be placed anywhere in deep space and used for item storage and ship refitting. Depots will be the least expensive of all the Mobile Structures, falling well under 1 million isk worth of materials. They deploy with a one minute delay and require no skills to use. They also fit into almost all ships, taking only 50m^3 of space when inside cargo holds.

Once deployed, the Mobile Depot provides 3000-4000m^3 of cargo space and a fitting service, both of which are only accessible to the pilot that owns the structure. They can be deployed almost anywhere, with the only exceptions being too close to gates, stations or starbases.

A Depot is also restricted from being deployed too close to another Depot (of any variety). This restriction on being deployed close to other item of the same group is common to all the new structures, with different ranges for each group.

Fans of the Mobile Depot will also be enjoying two special upgraded variants available, the 'Wetu' Mobile Depot and 'Yurt' Mobile Depot will both be available only as loot (BPC) in Ghost Sites. These variants will enjoy more cargo space and will be much harder for players to find using scan probes.

Mobile Micro Jump Unit

The Mobile Micro Jump Unit is functionality will be very familiar to those of you who have used the Large Micro Jump Drive ship module. When active, any player within range can use it to launch their ship 100km in any direction. It has no cooldown between uses or limit to how many ships can use it at once, but it does have a spoolup time of 12 seconds just like the MJD module.

The Mobile Micro Jump Unit can be used by any ship that is smaller than a carrier, and does not discriminate between its owner and any other player that tries to use it. It is a one-time use disposable structure with an affordable manufacturing cost of about one million isk and a lifetime of two days.

Mobile Scan Inhibitor

This tool will for the first time allow players to limit the information available to their opponents over a specific area. When active, the Mobile Scan Inhibitor will prevent the operation of both combat probes and directional scanners by or against anything within its 30km radius. The structure itself is always visible to both probes and directional scans, and is extremely easy to pinpoint using probes. This means that any other players in system will be able to easily tell where something might be hiding, but will not know what that something might be.

Players that are inside the radius of the Scan Inhibitor will also find their own probes and directional scanners disabled by the structure's interference, so those hiding behind the Scan Inhibitor will be blinded by the same fog of war as their opponents.

The Mobile Scan Inhibitor is another one-time use disposable structure, costs about fifteen million ISK to build, and lasts one hour.

Mobile Siphon Unit

No EVE Online feature would be complete without opportunities for thievery, deception and backstabbing; and Mobile Structures are no exception. The new Mobile Siphon unit is designed to be secretly deployed near a hostile starbase tower where it will quietly intercept some of the moon minerals or reaction results heading to that starbase's silos. The Siphon will not alert the owner of the starbase nor be automatically shot by that tower's guns, meaning that the owners of the starbase must actively check on their territory in order to protect it.

Like the Cyno Inhibitor, the Siphon Unit is a one-time use item, and requires the Anchoring skill to deploy. Its cargo hold also has the unique feature of being accessible to all pilots, meaning that even the siphoners themselves will not be immune to theft.

This is a small version (20 m^3), so carrying one, or even several, is not much of a constraint for most ships.

A siphon unit can only steal from the end of a chain. For example, if a POS has a two Moon Harvester Arrays that are both connected (through a Coupling Array/Silo) to an active Simple Reactor Array, then only the output from the Simple Reactor Array can be stolen.

A siphon unit steals from a single chain each production cycle, so it cannot for instance steal both raw material and processed material at the same time.

There is two 'named' versions:

- **Small Mobile 'Rote' Siphon Unit:**
  - Favors processed materials over raw materials.
  - Steals 110 units of processed materials.
  - Steals 20 units of raw materials.
  - Waste factor is 10%
  - Capacity is 10%
- **Small Mobile 'Hybrid' Siphon Unit:**
  - Steals polymers from Polymer Reactor Arrays.
  - Steal amount is 50% of batch size.
  - Waste factor is 10%
  - Capacity is 1200.

Mobile Tractor Unit

The Mobile Tractor Unit is a simple device that nonetheless will have very significant implications for many EVE players.

When deployed it automatically uses a built in tractor beam to retrieve wrecks and cargo containers within 125km and collect their contents into its gigantic 27,000m^3 cargo hold.

The Tractor Unit only takes 10 seconds to deploy, and takes up 100m^3 of space when stored in cargo. Like the Depot, it can be deployed anywhere away from Gates, Stations and Starbases, which means that it can be deployed inside missions (where NPC pirates are not interested in shooting it), asteroid belts, or on the field of your big fleet battle at the Infrastructure Hub.

Like the Mobile Depot, if you scoop a Tractor Unit that contains items, those items will be placed in a temporary container in space that you can loot at your convenience.

The Tractor Unit has 50,000 hitpoints, and does drop loot when destroyed so vigilance is advised while using it. The speed of tractoring has been tuned to ensure that a friend in a Noctis or Orca is still both more effective than the structure, in addition to providing more stimulating conversation.

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EXPLORATION

CHAPTER 10

EVE INDUSTRIAL BLACK BOOK

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Exploration Basics

The EVE universe is full of hidden surprises and resources, all just waiting to be discovered. It takes a little bit of luck, some perseverance, and a lot of experience to find and exploit these hidden gems. Even in high-sec areas, it is possible to find interesting and relatively valuable locations, but the real profit in Exploration is in 0.0 and the unknown space of wormhole systems. Remember, such an undertaking is far from risk-free, given the lack of CONCORD when not in high-sec.

Necessary Equipment

While scanning only takes a few skills and equipment to start with, there are a lot of ships, equipment, implants and skills that will make scanning much more effective.

Probe Launchers

Core Probe Launcher – Exploration use only, in return it has very light fitting requirements.

Name	CPU	PG	RoF	Bonus
Core Probe Launcher I	15 tf	1 MW	2s	-
Core Probe Launcher II	20 tf	1 MW	1,5s	+5 % Scan Strength
Sisters Core Probe Launcher	10 tf	1 MW	1,5s	+10 % Scan Strength

Expanded Probe Launcher – Can be used for scanning ships, buildings, and drones in addition to exploration sites.

Name	CPU	PG	RoF	Bonus
Expanded Probe Launcher I	220 tf	1 MW	2s	-
Expanded Probe Launcher II	242 tf	1 MW	2s	+5 % Scan Strength
Sisters Expanded Probe Launcher	210 tf	1 MW	1,5s	+10 % Scan Strength

Probes

	Name	Usable for	Base Variant	Sisters Variant
	Combat Scanner Probe	Used for scanning player ships, structures; fits into the Expanded Core Probe Launcher.	**20**	**22**
	Core Scanner Probe	The bread and butter of exploration, used for finding sites.	**40**	**44**

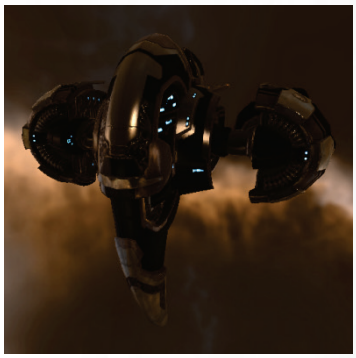
Ships

In order to explore the universe, you will need an appropriate ship. It is best to use a covert ops ship because of its scanning bonus and ability to cloak and warp cloaked. After finding and bookmarking a hidden site, you can switch to a combat vessel as needed.

AMARR

Ship Class	**Frigate**
Ship Name	**Magnate**
Bonus	**Amarr Frigate skill bonus per level:** 7.5% increase to scan strength of probes 5% bonus to Salvager cycle time **Role Bonus:** +5 Virus Strength to Relic and Data Analyzers
Pre-Requisite Skill(s)	**Amarr Frigate lvl 1**

Ship Class	**Covert Ops**
Ship Name	**Anathema**
Bonus	**Amarr Frigate Skill Bonus:** 5% bonus to rocket damage per level 5% reduction of capacitor recharge time per level **Covert Ops Skill Bonus:** 20% reduced CPU need for Cloaking Devices per level 10% increase to scan strength of probes per level 10% reduction to survey probe flight time per level **Role Bonus:** +10 Virus Strength to Relic and Data Analyzers **Notes:** Can fit covert ops cloaks and covert cynosural field generators. Cloak reactivation delay reduced to 5 seconds.
Pre-Requisite Skill(s)	**Amarr Frigate lvl 5, Covert Ops lvl 1**



CALDARI

Ship Class	**Frigate**
Ship Name	**Heron**
Bonus	**Caldari Frigate skill bonus per level:** 7.5% increase to scan strength of probes 5% bonus to Salvager cycle time **Role Bonus:** +5 Virus Strength to Relic and Data Analyzers
Pre-Requisite Skill(s)	**Caldari Frigate lvl 1**

Ship Class	**Covert Ops**
Ship Name	**Buzzard**
Bonus	**Caldari Frigate Skill Bonus:** 5% bonus to Missile Kinetic Damage per level -5% bonus to Missile Launcher Rate of Fire per level **Covert Ops Skill Bonus:** 20% reduced CPU need for Cloaking Devices per level 10% increase to scan strength of probes per level 10% reduction to survey probe flight time per level **Role Bonus:** +10 Virus Strength to Relic and Data Analyzers **Notes:** Can fit covert ops cloaks and covert cynosural field generators. Cloak reactivation delay reduced to 5 seconds.
Pre-Requisite Skill(s)	**Caldari Frigate lvl 5, Covert Ops lvl 1**

GALLENTE

Frigate	Ship Class
Imicus	Ship Name
Gallente Frigate skill bonus per level: 7.5% increase to scan strength of probes 5% bonus to Salvager cycle time **Role Bonus:** +5 Virus Strength to Relic and Data Analyzers	Bonus
Gallente Frigate lvl 2	Pre-Requisite Skill(s)

Covert Ops	Ship Class
Helios	Ship Name
Gallente Frigate Skill Bonus: 5% bonus to Small Hybrid Turret damage per level 10% bonus to Scout Drone Thermal damage per level **Covert Ops Skill Bonus:** 20% reduced CPU need for Cloaking Devices per level 10% increase to scan strength of probes per level 10% reduction to survey probe flight time per level **Notes:** Can fit covert ops cloaks and covert cynosural field generators. Cloak reactivation delay reduced to 5 seconds. **Role Bonus:** +10 Virus Strength to Relic and Data Analyzers	Bonus
Gallente Frigate lvl 5, Covert Ops lvl 1	Pre-Requisite Skill(s)

MINMATAR

Frigate	Ship Class
Probe	Ship Name
Minmatar Frigate skill bonus per level: 7.5% increase to scan strength of probes 5% bonus to Salvager cycle time **Role Bonus:** +5 Virus Strength to Relic and Data Analyzers	Bonus
Minmatar Frigate lvl 2	Pre-Requisite Skill(s)

Covert Ops	Ship Class
Cheetah	Ship Name
Minmatar Frigate Skill Bonus: 5% bonus to Small Projectile Turret Damage per level 10% bonus to Small Projectile Turret Optimal Range per level **Covert Ops Skill Bonus:** 20% reduced CPU need for Cloaking Devices per level 10% increase to scan strength of probes per level 10% reduction to survey probe flight time per level **Notes:** Can fit covert ops cloaks and covert cynosural field generators. Cloak reactivation delay reduced to 5 seconds. **Role Bonus:** +10 Virus Strength to Relic and Data Analyzers	Bonus
Minmatar Frigate lvl 5, Covert Ops lvl 1	Pre-Requisite Skill(s)

Skills, Implants, Rigs And Modules

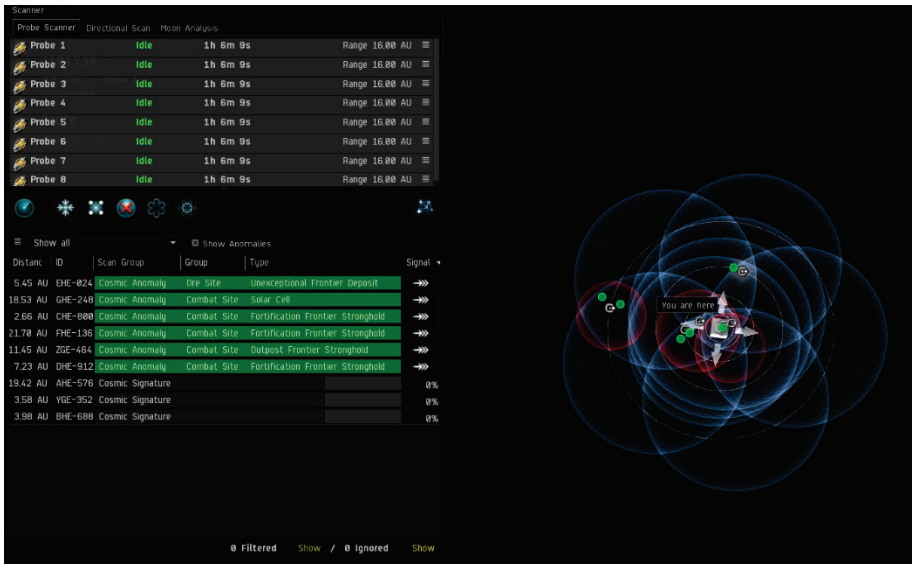
The table below shows the skills, implants, modules and the rig used for exploration:

Type	Name	Effect	Pre-Requisites
Skill	**Astrometrics**	Skill at operating long range scanners. +5% scan strength per level. -5% max scan deviation per level. -5% scan probe scan time per level.	Science lvl 3
Skill	**Astrometric Pinpointing**	Greater accuracy in hunting down targets found through scanning. Reduces maximum scan deviation by 5% per level.	Astrometrics lvl 4 Science lvl 3
Skill	**Astrometric Acquisition**	Skill at the advanced operation of long range scanners. 5% reduction in scan probe scan time per level.	Astrometrics lvl 3 Science lvl 3
Skill	**Astrometric Rangefinding**	Skill for the advanced operation of long range scanners. 5% increase to scan probe strength per level.	Science lvl 3
Implant	**Poteque 'Prospector' Astrometric Pinpointing AP-6 Series**	A neural Interface upgrade that boosts the pilots scanning skills. 2-6-10% reduction in maximum scan deviation.	**Slot: 6** Science lvl 3 Cybernetics lvl 1 – lvl 3 – lvl 5
Implant	**Poteque 'Prospector' Astrometric Acquisition AQ-7 Series**	A neural Interface upgrade that boosts the pilots scanning skills. 2-6-10% reduction in probe scanning time.	**Slot: 7** Science lvl 3 Cybernetics lvl 1 – lvl 3 – lvl 4
Implant	**Poteque 'Prospector' Astrometric Rangefinding AR-8 Series**	A neural Interface upgrade that boosts the pilots scanning skills. 2-6-10% reduction in probe scanning time.	**Slot: 8** Science lvl 3 Cybernetics lvl 1 – lvl 3 – lvl 5
Module	**Scan Acquisition Array I**	Reduces the scan time of scan probes. (-10%) Only one Scan Acquisition Array module can be fitted at max.	**Slot: Med** Astrometric Acquisition lvl 2
Module	**Scan Acquisition Array II**	Reduces the scan time of scan probes. (-20%) Only one Scan Acquisition Array module can be fitted at max.	**Slot: Med** Astrometric Acquisition lvl 5
Module	**Scan Pinpointing Array I**	Reduces the scan deviation when scanning with scan probes. (-10%) Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	**Slot: Med** Astrometric Pinpointing lvl 2
Module	**Scan Pinpointing Array II**	Reduces the scan deviation when scanning with scan probes. (-20%) Penalty: Using more than one type of this module or similar modules that affect the same attribute on the ship will be penalized.	**Slot: Med** Astrometric Pinpointing lvl 5
Module	**Scan Rangefinding Array I**	Increases the scan strength when scanning with scan probes. (5%) Penalty: Using more than one module that affects the Scan Strength attribute will result in diminishing returns.	**Slot: Med** Astrometric Rangefinding lvl 2
Module	**Scan Rangefinding Array II**	Increases the scan strength when scanning with scan probes. (10%) Penalty: Using more than one module that affects the Scan Strength attribute will result in diminishing returns.	**Slot: Med** Astrometric Rangefinding lvl 5
Rig	**Gravity Capacitor Upgrade I**	This ship modification is designed to increase a ship's scan probe strength. (10%)	Jury Rigging lvl 1
Rig	**Gravity Capacitor Upgrade II**	This ship modification is designed to increase a ship's scan probe strength. (15%)	Jury Rigging lvl 4

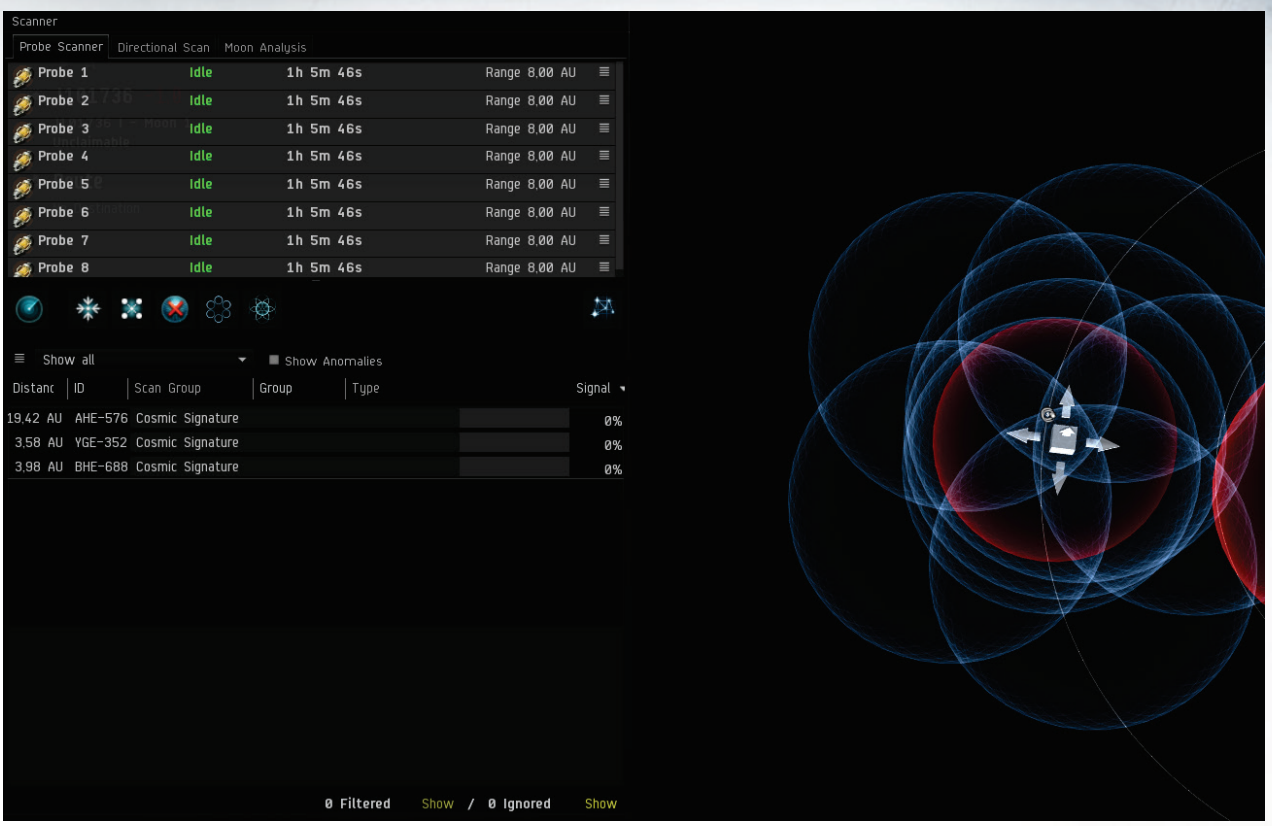
Scanning How-To

Ship all set up and ready to go? To find out where we should be heading, we need to know how to make the most of our scanners. So, load your new scanning ship with a probe launcher and probes, and let's get started.

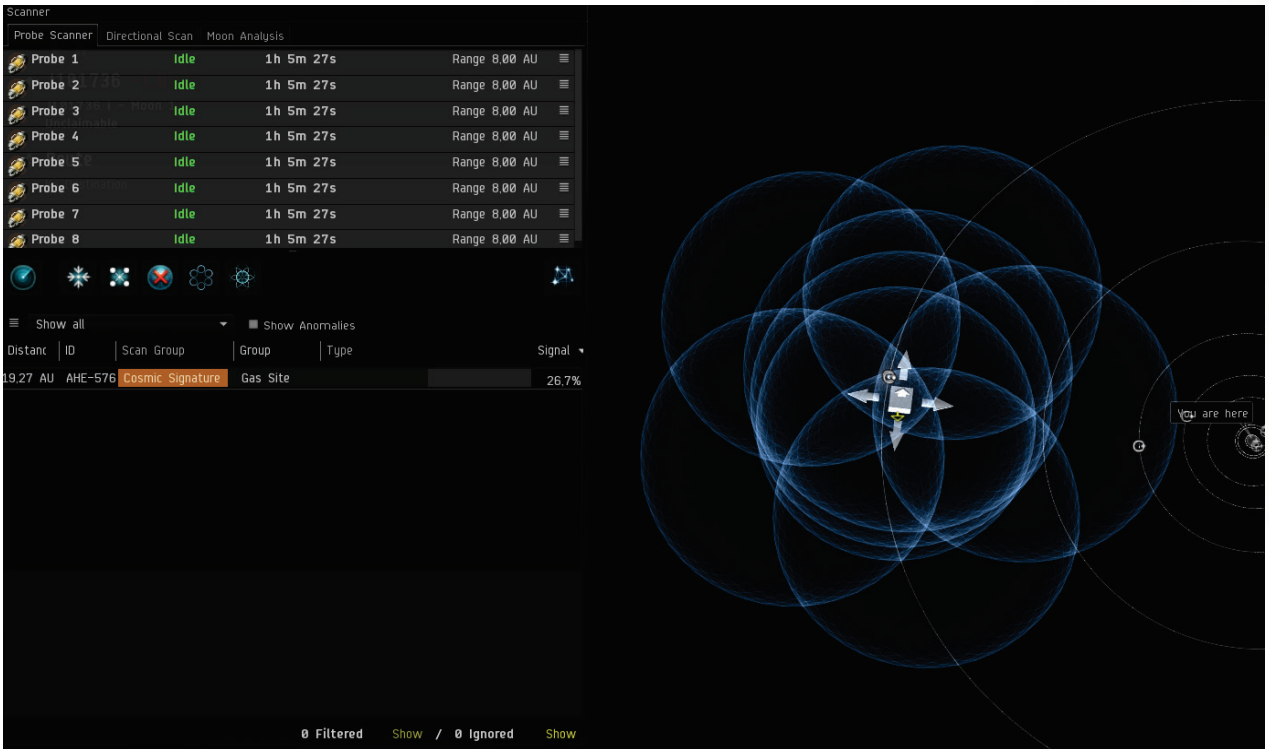
Undock, open the scanner window, launch (use the spread formation to cover a large area, the formations only work if you have 8 probes in space.) the probes, set it to maximum range and perform a scan. You launch all probes in your launcher at once, regardless of how many you currently have loaded. You can have a maximum of 8 probes in space at the same time. You can adjust the probes' range by right-clicking its row in the scanner window and selecting one increment from the submenu. Start with the maximum range. You should also switch to the Solar System map (F10), as you will spend a lot of time watching those spheres.



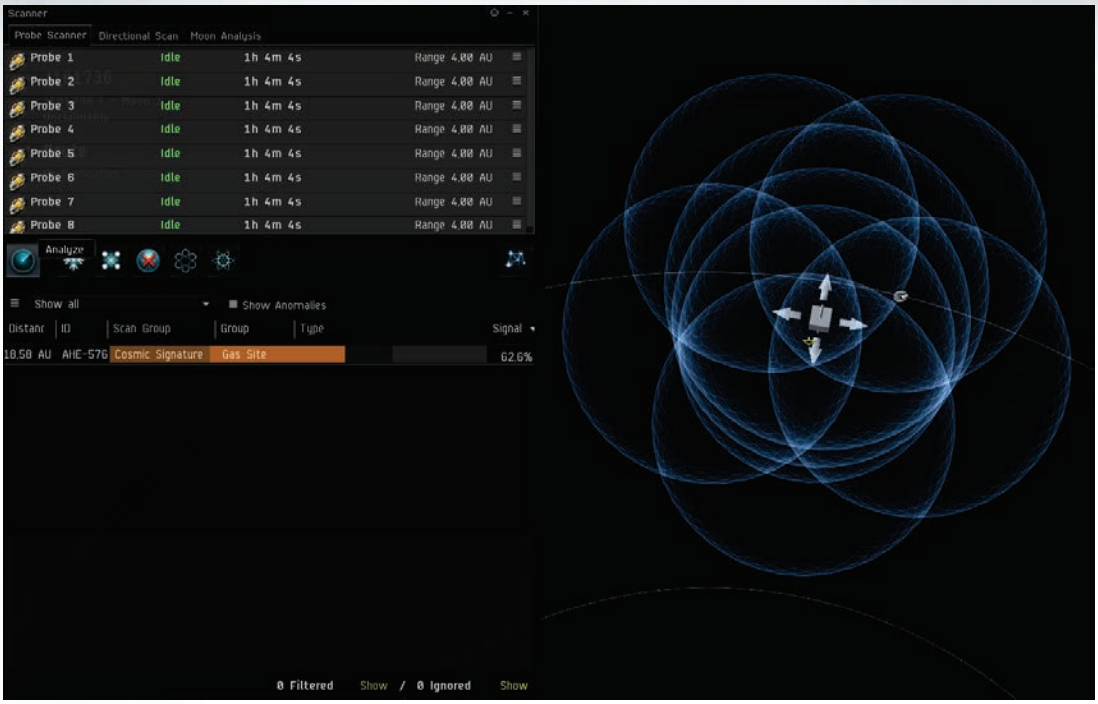
The results, if any, will be shown on the Scan Results part of the scanner window along with the signal's strength. The white-blue sphere is the selected probe's range, the arrows are used for moving the probe around, and the red sphere is the relative vicinity of the signal. We will cover that red area with additional probes. For the rest of this chapter we will show a basic, but effective Pinpoint (probes aligned to focus on one point) method.



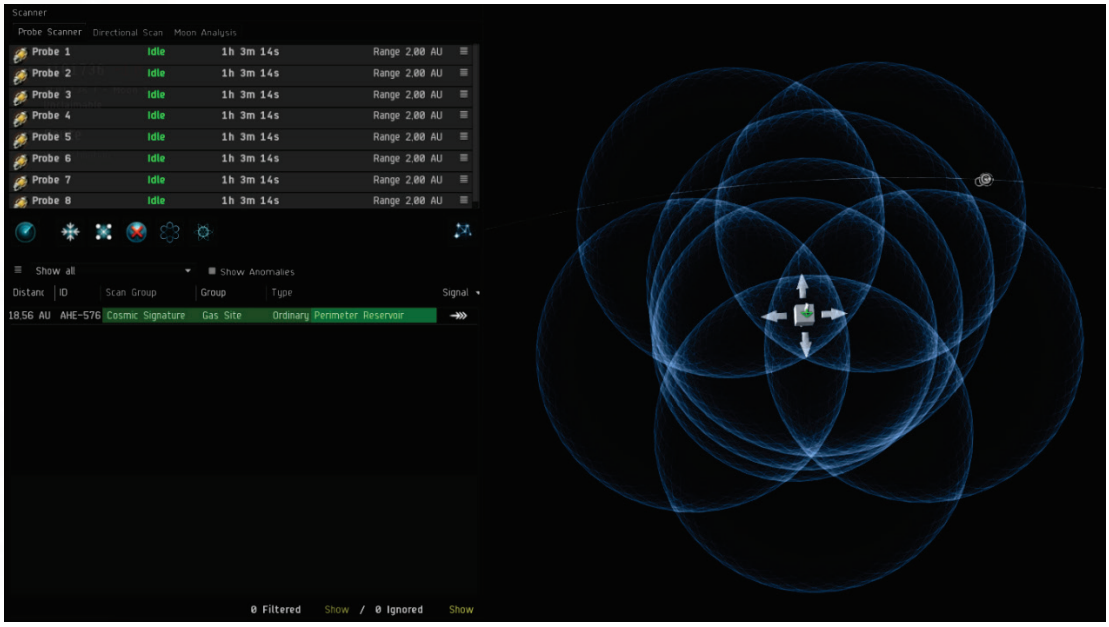
Spatial thinking is rather important. The basic idea is that we cover the red sphere's volume with the probes' collective scan ranges. Holding Shift will give you an individual handle for each probe. Holding Alt allows you to move your probes closer together.



After another successful scan we see a red circle, which means that two of our probes see the signal and it's somewhere along that circle. Move the probes around the circle, to cover its entire length. You should also decrease the scan range by one increment. I we have a yellow mark, we have 4 probes at least that see the signal.



We can certainly see that there is something, and the yellow mark or sole red dot tells us that at least three of our probes are locating it. Move the probes closer again and decrease their range.



Bingo! We can see that it is a Gas Site. We can bookmark it by right-clicking on the green mark. If we are in a combat ship, we can warp there right away, or we can fetch one if we are flying a covert ops to do our scans. The Probe Scanning window now shows how many scan results have been filtered out and ignored.

There is a third formation button in the Probe Scanner window, which will launch the last selected custom formation. It has an option button embedded in it to manage custom formations, which includes Saving and Deleting formations. You can have a total of 10 custom formations, comprising of any number of probes from 1 to 8 probes in the formation.

Result Types

We can encounter three types of dots:

- **Red Dot**: Bad signal, additional scan required.
- **Yellow Mark**: Medium signal strength, revealing some attributes of the signal, but we still need to refine the search.
- **Green Mark**: Signal strength is 100%, we can bookmark the spot right away.

If you leave the system, disconnect or dock, the probes will return into your cargohold, the recall is instantaneous and happens automatically on system jump or dock.

Probes have a timer, but instead of being lost when the timer is out, they automatically recall instead.

The system remembers your last probe setup before they were automatically recalled so they can be quickly deployed again in the same pattern (by activating the launcher). No more forsaken probes in space!

Signal Types

It is important to note that the system security status has a major impact on what class of Wormhole system we find and how difficult the sites are.

Naturally, high-sec systems are the least profitable, low-sec (0.4-0.1) systems are the middle ground and finding a WH in Nullsec usually means big business.

Currently there are six types of signals:

- **Unknown** – Combat sites
- **Ore Site** – Asteroid Field
- **Gas Site** – Harvestable Gas
- **Relic Site** – Site there you will need some Archaeology knowledge
- **Data** - Hacking site
- **Wormhole**

All signals are show up really early in scanning, but if you have a signal at less than 25% it says unknown.

Site types comes handy if you are/are not looking for these sites so you can either discard it or discard the other signals.

Combat

Type	Combat site
Skills that you may need	A great deal of combat skills, mostly PvE related, but you can expect some PvP too in 0.0 and Wormhole systems.
Necessary Equipment	A vessel capable of dealing with the NPCs and maybe collecting whatever remains.
NPC Presence	Yes, they are everywhere!
What you can expect	Shooting, shooting and more shooting.
Other Information	**1.0-0.5:** In most cases, you may find frigates and cruisers, sometimes a lone battleship may come, but that is very rare. **0.5-0.1:** Mostly smaller craft, but more powerful and are worth more than in high-sec. There is also a bigger chance for battleships to show up. **0.0** Anything goes. Usually strong cruisers to start with, and it is quite common to run into six to eight battleships. There is a chance that a combat site will escalate. If that happens, you will get a temporary bookmark in your journal. However, you will have a time limit to wipe the complex free of the NPCs ranging from a couple hours to about one day.

Ore Site

Type	Hidden Asteroid Field
Skills that you may need	Mining and beyond
Necessary Equipment	Anything you can mine with. Sometimes it is a Deadspace pocket with an acceleration gate; that means no MWDs inside.
NPC Presence	You may found some NPC. You should have a combat ship around, always tank these rats to avoid this while you are mining.
What you can expect	You have your own private mining place.
Other Information	Mostly non-respawning, low-sec ores, in varying amount (except the WH sites)

Gas Site

Type	Gas Cloud
Skills that you may need	Gas Cloud Harvesting level I (Mining level IV)
Necessary Equipment	Gas Cloud Harvester I (Gas Cloud Harvesting level I) or Gas Cloud Harvester II (Gas Cloud Harvesting level V)
NPC Presence	Usually only one larger wave of NPC fleet, W-space sites may have lone towers
What you can expect	Gas clouds. The product mined from gas clouds is used as raw material for combat booster manufacturing.
Other Information	The gas clouds can deal a surprising amount of damage, battlecruisers or stronger ships are recommended

Relic Site

Type	Archaeology
Skills that you may need	Archaeology (Science lvl 3, Survey lvl 3 and CPU management lvl 1)
Necessary Equipment	Relic Analyzer I (Archaeology lvl1) or Relic Analyzer II (Archaeology lvl 5)
NPC Presence	Usually yes, W-space may only have towers.
What you can expect	You can find Tech II BPCs, rig components and maybe invention skill books in these sites.
Other Information	You have to use the proper module on the containers to access their content.

Data Site

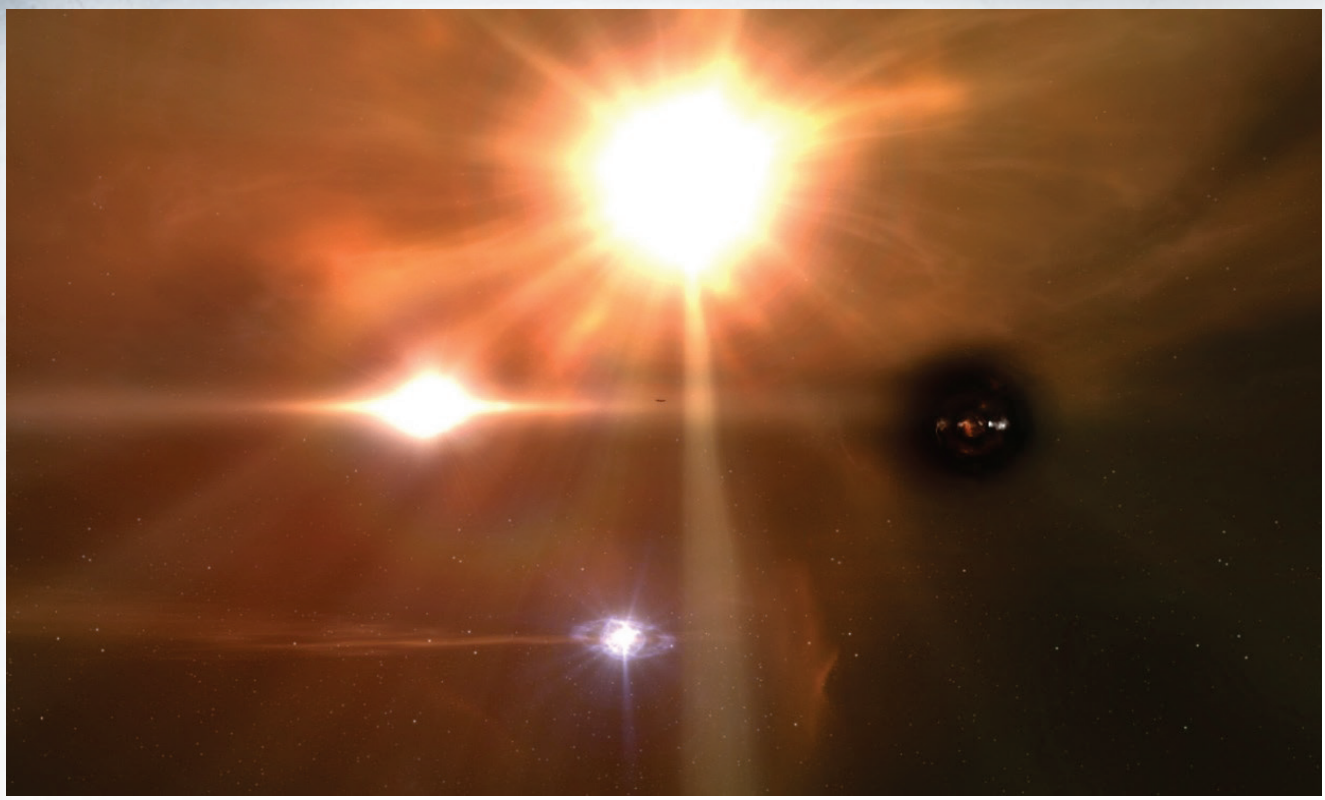
Type	Hacking
Skills that you may need	Hacking (Science lvl 3, Electronics Upgrades lvl 3, CPU management lvl 1, Power Grid management lvl 1)
Necessary Equipment	Data Analyzer I (Hacking lvl 1) or Data Analyzer II (Hacking lvl 5)
NPC Presence	Usually yes, W-space may only have towers.
What you can expect	Decryptors, datacores, and data interface BPCs can be found here
Other Information	You have to use the proper module on the containers to access their content.

Wormhole

Type	That is, travel to any part of universe *without moving*. (And/or spice)
Skills that you may need	Courage, luck and organization (and have the guts!)
Necessary Equipment	Friends, an organized and well-structured team.
NPC Presence	Sometimes too many. Soloing is not recommended.
What you can expect	It is the only place where Tech III production components can come from. **Be aware!** There are no “Local” chat, you can’t see nobody until…
Other Information	The next section will discuss this

Ghost Site

Type	If you fail in hacking a Ghost Site container, it will detonate!
Skills that you may need	Archaeology, Hacking, Courage,Luck, proper tank and weapons (and have the guts!)
Necessary Equipment	Relic Analyzer I or Relic Analyzer II or Data Analyzer I or Data Analyzer II
NPC Presence	Sometimes too many. Extreme tank required!
What you can expect	It is the only place where new implant production components can come from. (BPCs for new Ascendancy Implant sets)
Other Information	If you fail in hacking a Ghost Site container, it will detonate, causing Explosive damage to anyone nearby Ghost Sites feature invisible timers. If the timer expires while you are still in the Ghost Site, the remaining hacking containers will detonate, causing area-of-effect Explosive damage. Waves of NPCs will spawn shortly after



The Wormholes

These mystical bridges come and go as their time connecting to any one spot is limited. Depending on the places wormholes connect together, they are marked as follows:

K-System/K-Space: The known universe, Empire and 0.0 (K-Space = Known Space)

W-System/W-Space: The unknown part of space, the wormhole systems (W-Space = Wormhole Space)

K-W: A K-space to W-space connection

W-W: A W-space to W-space connection

W-K: A W-space to K-space connection

K-K: A K-space to K-space connection

WH: Wormhole

Through the Wormhole (Without M. Freeman)

It is important to know that the scanned WH won't appear in either the starting system, or the destination system unless it is activated. The WH or any other signature appears only when you enter warp (K162 appearance only on first jump). It also appears if you cancel warp, and so it will be active and two-way until it's closed.

Every "gateway" has both a life cycle and capacity. I suggest getting used to it: once you find the WH, bookmark it (at both sides), because to be stuck inside without exit is shameful.

The life cycle can last from hours to a few days. In capacity we must consider the mass of passing ships. It may be from a few cruisers to multiple Orcas. Capital ships cannot enter if the WH leads to a system where capital ships are basically unable to enter. For example Titans and Supercarriers cannot go through K-K gates into Highsec.

Every WH system has a so-called static WH which generates the same “gate”. If it closed, another one appears, but it qill be inaccessible from the other side unless somebody activates it with a warp.

If we are stuck in W-space and have no equipment to find WH, we can do either of two things: Self-Destruct our Pod, or wait until somebody finds an exit. You cannot activate your jump clone from inside. There is at least one WH in W-space that may lead you home (the chance is 1 to 7500 :))

The W-space’s local channel is in a delayed mode, so you won’t see nobody unless they speak. So you cannot be sure if you are alone or not. The WH systems are unseen on the star map, do not waste your time trying to find them.

Every WH system’s security level is the same as 0.0 systems’, so do not expect help from Concord if you are under attack. And so, do not be surprised if you fell into a bubble.

It is possible to stand up a POS, but keep it in your mind that the fuel support might be difficult, you may not find the way back sometimes for weeks, months (except a System with static High-sec WH). And there is no ice belt in W-space, so think about this twice before you start.

Over a hole and far away

There is a variable adjustment to the distance that ships appear at after jumping through wormholes. The base distance scale as high as ~14km from the wormhole for the largest ships, and the random factor for each jump would range from 2km (for a fresh wormhole) to 5km (for a crit wormhole) in either direction.

The distance from a wormhole that ships must be within to jump will remain 5km as always. The potential distances for several types of common ships would be:

Ship	Mass (In Kg)	Base Distance	Distance to jump range	
			Min	Max
Covert Ops Frigate	1,280,000	5.5 km	0 km	5.5 km
Plated T3 Cruiser	14,300,000	6.9 km	0 km	6.9 km
Plated Bhaalgorn	101,000,000	8.8 km	0 km	8.8 km
Orca	250,000,000	10.1 km	0.1 km	10.1 km
Average Carrier	1,120,000,000	13.5 km	3.5 km	13.5 km
Average Dreadnought	1,240,000,000	13.8 km	3.8 km	13.8 km

Wormhole Features

Some W-space systems have additional features, taking the form of wormhole anomalies. If there is an effect in play in a system, you will see the message, "Local spatial phenomena may cause strange effects on your ship systems." Look at the target system's space background to determine which phenomena is being displayed.

These anomalies will have an effect on every ship that is in the system, modifying various attributes, as seen in the following tables:

Pulsar	C1	C2	C3	C4	C5	C6
Shield HP	+30%	+44%	+58%	+72%	+86%	+100%
Armor Resists	-15%	-22%	-29%	-36%	-43%	-50%
Capacitor recharge	-15%	-22%	-29%	-36%	-43%	-50%
Signature	+30%	+44%	+58%	+72%	+86%	+100%
NOS / Neut Drain Amount	+30%	+44%	+58%	+72%	+86%	+100%

Black Hole	C1	C2	C3	C4	C5	C6
Missile velocity	+15%	+22%	+29%	+36%	+43%	+50%
Missile Explosion Velocity	+30%	+44%	+58%	+72%	+86%	+100%
Ship velocity	+30%	+44%	+58%	+72%	+86%	+100%
Stasis Webifier Strength	-15%	-22%	-29%	-36%	-43%	-50%
Inertia	+15%	+22%	+29%	+36%	+43%	+50%
Targeting range	+30%	+44%	+58%	+72%	+86%	+100%

Magnetar	C1	C2	C3	C4	C5	C6
Damage	+30%	+44%	+58%	+72%	+86%	+100%
Missile explosion radius	+15%	+22%	+29%	+36%	+43%	+50%
Drone Tracking	-15%	-22%	-29%	-36%	-43%	-50%
Targeting Range	-15%	-22%	-29%	-36%	-43%	-50%
Tracking Speed	-15%	-22%	-29%	-36%	-43%	-50%
Target Painter Strength	-15%	-22%	-29%	-36%	-43%	-50%

Cataclysmic Variable	C1	C2	C3	C4	C5	C6
Local armor repair amount	-15%	-22%	-29%	-36%	-43%	-50%
Local shield boost amount	-15%	-22%	-29%	-36%	-43%	-50%
Shield transfer amount	+30%	+44%	+58%	+72%	+86%	+100%
Remote repair amount	+30%	+44%	+58%	+72%	+86%	+100%
Capacitor capacity	+30%	+44%	+58%	+72%	+86%	+100%
Capacitor recharge time	+15%	+22%	+29%	+36%	+43%	+50%
Remote Capacitor Transmitter amount	-15%	-22%	-29%	-36%	-43%	-50%

Red Giant	C1	C2	C3	C4	C5	C6
Heat Damage	+15%	+22%	+29%	+36%	+43%	+50%
Overload Bonus	+30%	+44%	+58%	+72%	+86%	+100%
Smart Bomb Range	+30%	+44%	+58%	+72%	+86%	+100%
Smart Bomb Damage	+30%	+44%	+58%	+72%	+86%	+100%
Bomb Damage	+30%	+44%	+58%	+72%	+86%	+100%

Wolf Rayet	C1	C2	C3	C4	C5	C6
Armor HP	+30%	+44%	+58%	+72%	+86%	+100%
Shield Resist	-15%	-22%	-29%	-36%	-43%	-50%
Small Weapon Damage	+60%	+88%	+116%	+144%	+172%	+200%
Signature Size	-15%	-22%	-29%	-36%	-43%	-50%

Wormhole System Classification

The W-space classification goes from C1 (piece of cake) to C6 (OMG, send help!). Naturally, harder class systems may have a bigger impact on your wallet (positive or negative). The names of the sites found inside can tell you what to expect:

Class (Tier)1 – Perimeter **Can be: Camp, Ambush Point.**	**Class (Tier) 2 – Perimeter** **Can be: Checkpoint, Hangar.**
Heavy assault cruiser and battlecruiser usage, even alone, relatively easy to clear	Heavy assault cruiser and battlecruiser usage, more difficult, but still soloable
Class (Tier) 3 – Frontier **Can be: Outpost, Fortification**	**Class (Tier) 4 - Frontier,** **Can be: Command, Barracks.**
The minimum recommended solution: 2x Heavy assault cruiser/logistic battlecruiser and 1x or 2x may be filled in battleship tank	5-8 man gangs, specialized support, ECM, possibly a battleship
Class (Tier) 5 – Core **Can be: Garrison, Stronghold.**	**Class (Tier) 6 – Core** **Can be: Bastion, Citadel.**
15 people, battleships, Remote Repairers, ECM support	25 hardcore, remote repairing, ECM pilots are a must

Below are a couple of wormhole IDs. This data does not originate from the CCP database; I do not take responsibility for its accuracy.

- 1-6 leads to W-space
- 7 leads to high-sec
- 8 leads to low-sec
- 9 leads to 0.0 space

1	H121	H121	Q317	V301	Y790	Z647	Z971	
2	C125	D364	D382	G024	I182	N766	R943	
3	C247	L477	M267	N968	O477	O883	X702	
4	E175	M609	O128	T405	X877	Y683	Z457	
5	H296	H900	L614	M555	N062	N432	N770	V911
6	A982	B041	R474	S804	U319	U574	V753	W237
7	A641	B274	B449	B520	D792	D845	N110	S047
8	A239	C140	C391	J244	N290	N944	R051	U210
9	C248	E545	K329	K346	S199	V283	Z060	Z142

The following table gives a summary of experience about wormhole properties. The destination indicates the difficulty:

- WH 1-6 until the system is the difficulty of labelling (for example, 6 = Class 6)
- L=Low-sec
- H=High-sec
- Z=”Zero”-sec (0.0).

WH Name	Target	Mass Limit (Mkg)	Mass Capacity (Gkg)	Lifetime (Hours)	Mass Capacity Recovery (Mkg/hour)	Theoretical Maximum Mass Allowance, One Hour Before Collapsing (Gkg)
A239	L	300	2.00	24		
A641	H	1000	2.00	16		
A982	6	300	3.00	24		
B041	6	300	5.00	48	500	23.5
B274	H	300	2.00	24		
B449	H	1000	2.00	16		
B520	H	300	5.00	24	500	11.5
C125	2	20	1.00	16		
C140	L	1350	3.00	24		
C247	3	200	2.00	16		
C248	Z	1800	5.00	24	500	11.5
C391	L	1800	5.00	24	500	11.5
D364	2	300	1.00	16		
D382	2	300	2.00	16		
D792	H	1000	3.00	24		
D845	H	300	5.00	24		
E175	4	300	2.00	16		
E545	Z	300	2.00	24		
G024	2	300	2.00	16		
H121	1	20	0.50	16		
H296	5	1350	3.00	24		
H900	5	300	3.00	24		
I182	2	300	2.00	16		
J244	L	20	1.00	24		
K329	Z	1800	5.00	24		
K346	Z	300	3.00	24		
L477	3	300	2.00	16		
L614	5	20	1.00	24		
M267	3	300	1.00	16		
M555	5	1000	3.00	24		
M609	4	20	1.00	16		
N062	5	300	3.00	24		

N110	H	20	1.00	24		
N290	L	1800	5.00	24		
N432	5	1350	3.00	24		
N766	2	300	2.00	16		
N770	5	300	3.00	24		
N944	L	1350	3.00	24		
N968	3	300	2.00	16		
O128	4	300	1.00	24	100	2.3
O477	3	300	2.00	16		
O883	3	20	1.00	16		
P060	1	20	0.50	16		
Q317	1	20	0.50	16		
R051	L	1000	3.00	16		
R474	6	300	3.00	24		
R943	2	300	0.75	16		
S047	H	300	3.00	24		
S199	Z	1350	3.00	24		
S804	6	20	1.00	24		
T405	4	300	2.00	16		
U210	L	300	3.00	24		
U319	6	1800	50.00	48	500	23.5
U574	6	300	3.00	24		
V283	Z	1000	3.00	24		
V301	1	20	0.50	16		
V753	6	1350	3.00	24		
V911	5	1350	3.00	24		
W237	6	1350	3.00	24		
X702	3	300	1.00	24		
X877	4	300	2.00	16		
Y683	4	300	2.00	16		
Y790	1	20	0.50	16		
Z060	Z	20	1.00	24		
Z142	Z	1350	3.00	24		
Z457	4	300	2.00	16		
Z647	1	20	0.50	16		
Z971	1	20	0.10	16		

Wormhole Properties

When you have successfully scanned one wormhole and can see it, you can tell two important facts about it:

- How much time it has left to stay open.
- How used it is.

The Wormhole's Age

WH Information Appearing In Its Description	Remaining Time
"This wormhole has not yet begun its natural cycle of decay and should last at least another day."	More than 24 hours until collapse.
"This wormhole is beginning to decay, and probably won't last another day."	Less than 24 hours until collapse.
"This wormhole is reaching the end of its natural lifetime."	Probably only have four hours or less.
"This wormhole is on the verge of dissipating into the ether."	It could be said that this WH can collapse at any time.

The Wormhole's Capacity

WH Information Appearing In Its Description	Capacity:
"This wormhole has not yet had its stability significantly disrupted by ships passing through it."	More than half capacity left.
"This wormhole has had its stability reduced by ships passing through it, but not to a critical degree yet."	Less than half capacity but more than 10%.
"This wormhole has had its stability critically disrupted by the mass of numerous ships passing through and is on the verge of collapse."	Less than 10% of capacity is left. Be aware, we can "stuck" in the wrong side of the WH!

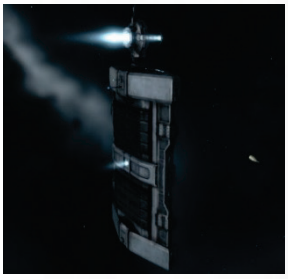
Life in endless space – Practical advices from Ahar Sirayin

If you have decided that you're moving in, never look at how many sites a system has. It will be come apparent very soon. Instead search for a system which has proper statics, where you can farm and hunt.

Here is some advices which you may accept or ignore. But do not forget that, the advice is inspired by real WH experience.

First and most important: Know your system. You must know how far the farthest planet is, what is in the middle of a system, what you can see on directional scanner and from where.

Use the Directional Scanner all the time since it will be your "eyes" in there.



If you are living in there, take full advantage on the opportunities. Change the Customs Offices into one you own, and use the most useful planets. It might be useful to produce POS fuel or anything else you can sell.

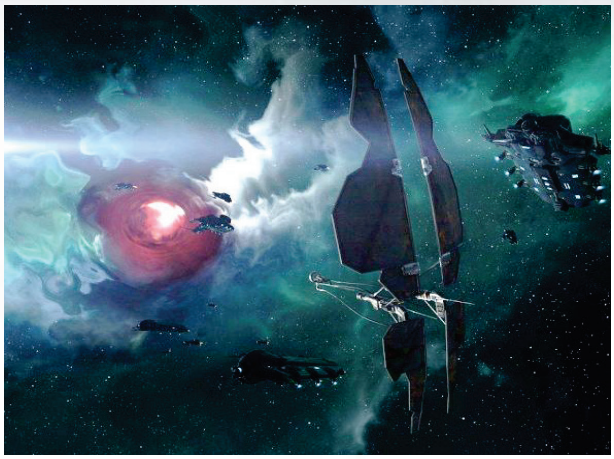
Do not forget this is not High sec therefore there will be a lot of things to harvest. Make sure to change not just one CO but all of them, otherwise your enemies will know how give you headaches.

Try to scan everything, including Null Sec systems openings from your one: a part time job might be useful if you find a peaceful Nullsec system with good Plex, with good loot, and perhaps you may find a reckless carebear too. ☺

On condition that you live in a high class system, do not wait for a gate which leads to a Highsec WH, because the chance is low. Instead check the gates, where do they lead from the static, and what are beyond them and so on. Make notes about the nearby systems, dwellers: you might face them anytime so you need to know how strong and how organized they are. Do not be frightened if you have unfriendly neighbours. If the gate is not under camp, close it: just use some BS and a capital. Count the changing mass after each jump. If the gate is camped, change character, or just watch them silently. In case you are under attack, you may fight or negotiate. Count and choose the least dangerous option.

Supposing the neighbour come over without invitation to clear off your sites, you may do a few things: watch them in cloak, drop some bombs with stealth bomber (the sleepers make it hard, but not impossible :)). Or you can call your friends and fight the enemy (for e-honour or fun), you can close the gates, or another funny solution is using a warp-in point (a few hundred kilometres away) you use a capital ship.

This action instantly triggers 6 unfriendly sleeper Bss, or it may be 8 more if there is a capital ship already. Its might cause some losses *evil grin here* .



The Zephyr is not a decoration. It is very useful for checking sites before you go there with a mining ship for a small amount of Arkonor. What is more this ship has 10m^3 cargo capacity which is enough to collect sleeper loots even if there are some sleepers at the site.

It is also useful if your partners can fly many types of ships, because you may find abandoned POS, ships, and taking them home is better than taking them down.

If you find a good WH and you take out something, never come back empty. You may find more of something, like fuel, new ships, new modules, rigs. If you think of this seriously, do not spare money. Have more ships inside (more than one per type), more modules, rigs, and some BPO/BPC might be useful too.

Everybody has to have pvp ships! It doesn't matter if somebody doesn't care for pvp, if the shit hits the fan, every ship counts. A Battlecruiser with poor fitting is better than nothing, or plus another ship with cloak.

Corp-bookmark. Three cheers for CCP. If you scan, share the bookmarks in order to help your corp mates to join as fast as they can in every fun.

Even if the system was scanned before you, you must scan before you do anything. You never know when a new gate appears from nothing leading to dangerous places.

Somebody must be in the WH who can scan an exit. It might be an alt, logged in only when everybody wiped out. And somebody with proper right has to be there loading POS.

If you are away from keyboard, do not just float under POS's force field, better if you are at a safe spot cloaking. So if anybody looks around won't know where you are, and he won't know what ship you fly either.

You must have more safe spots, one at the farthest planet and more scattered in the system.

If you are clearing a Relic or Data site off, and an emergency server restart occurs, the site has a fair chance of despawn. It is the typical "Shit happens", but if you are lucky, you can get back your site with a successful petition. (Hint: a "Please help me" is always better than the "Give me back now!")

If you are searching in the static of static, or beyond, do not forget that the gate might be closes by the dwellers any time. Check the way back or use scout.

Last but not least my best advice: If you didn't try it so far, than try it in any case! The endless space awaits! :)

Shattered Wormholes

These wormhole systems will all be distinct from existing space in several important ways and will fall into three categories:

The seventy five **Standard Shattered Wormhole Systems** will be similar to normal W-space systems in many ways (including delayed-mode local chat), but will have a few important distinctions:

- They will have no moons and every planet will be shattered. The reasons for this phenomena are heavily tied into the ongoing and upcoming events within New Eden.
- They will have some special landmark sites that also connect to the storyline and provide clues to the reason they were previously inaccessible.
- They will have a somewhat higher occurrence of some of their class-appropriate W-space signature and anomaly content compared to a normal W-space system.
- They will contain a new celestial debris field asteroid belt anomaly that will be larger and richer than most belts.
- They will contain minable ice fields. This will be the first ice available in wormhole space.
- They will all have an additional known-space “static” wormhole connection alongside the normal “static” connections that they receive by virtue of their class. For those unfamiliar with wormhole navigation, a “static” connection in this case means that there’s always a wormhole exit to a particular security level “known-space” system (one in EVE’s star map).
- They will be distributed into all the existing wormhole classes, and some will have one of the current wormhole system effects.

- There are also some extra unique lore-connected surprises to be found in a small percentage of these new systems.

The twenty five **Small Ship Shattered Wormhole Systems** will have all the features of the normal Shattered Wormhole Systems, with the following additions:

- All wormholes in or out of these systems will be small ship wormholes, meaning that only Frigates, Destroyers and Heavy Interdictors (Heavy Interdictors can use their bubble generators to reduce their mass) can enter.
- These systems will all receive anomaly and signature sites appropriate for wormholes between class 1 and class 3, but will receive the system effects normally reserved for C6 Wolf Rayet systems (+100% armor hit points +200% small weapon damage, -50% shield resists, -50% signature size)

Thera

Thera is a unique wormhole system that will be intimately tied to EVE's developing storyline and will essentially represent a new 5th variant of space in New Eden.

The Thera system is colonized by a research expedition organized by The Sanctuary corporation.

- Thera is a gigantic shattered wormhole system that contains four NPC stations and a large number of wormhole connections.

- The four stations in Thera will each have a full set of services, including cloning, office slots, and manufacturing. You will be able to set these stations as your medical clone location, and install Jump Clones if you wish.

- Thera has multiple static connections highsec, lowsec and nullsec space as well as access to wandering wormholes and K162 connections that can connect it to W-space. The result is a system that is much more connected to K-space than to W-space.

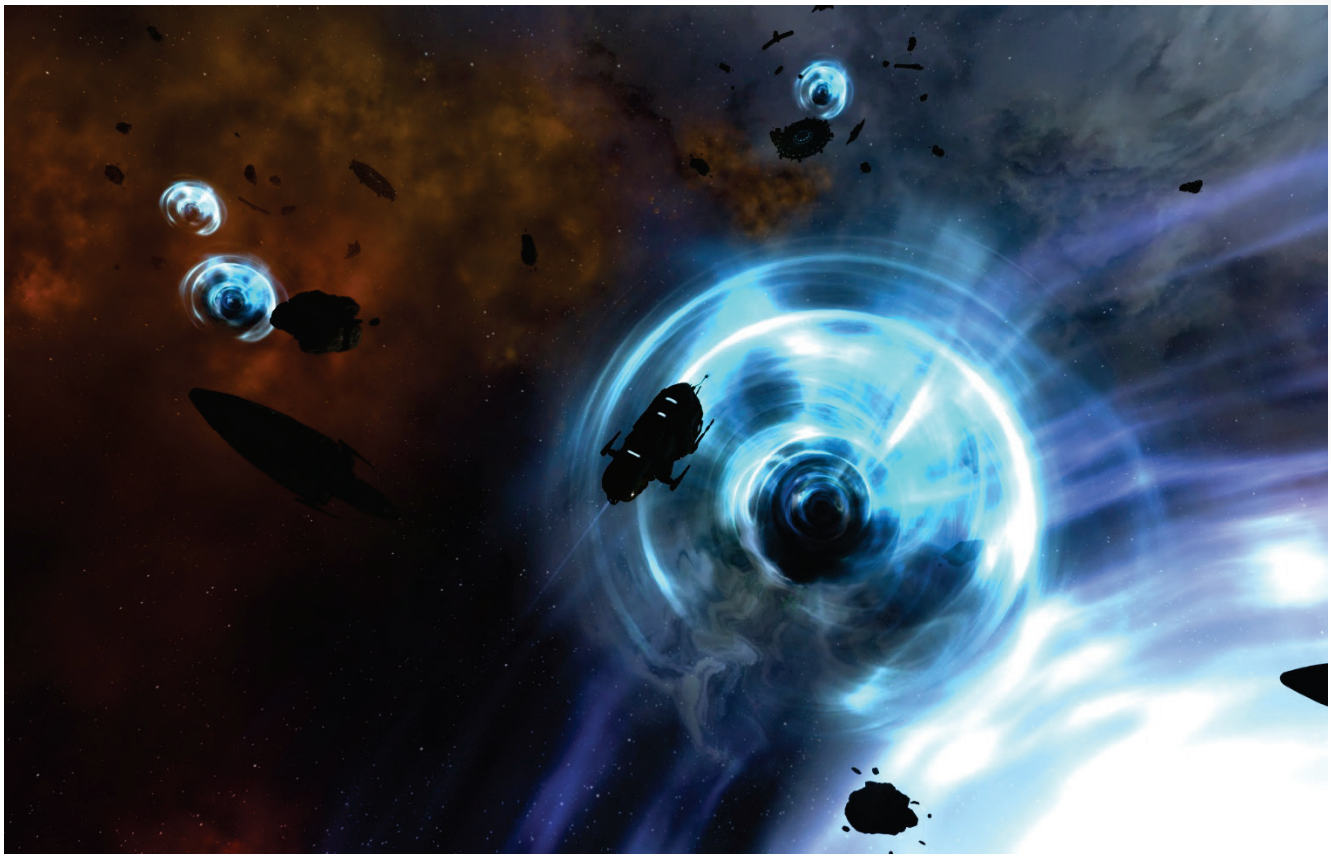
- None of the connections to Thera will admit capital ships (freighters will be able to squeeze in), none of the stations in Thera will allow capitals to be built, and there are no moons for starbase anchoring. This means the system will only ever contain sub-capital vessels.

- Thera is the largest system we have ever had in EVE. The stations are spread between three different planets at the edges of the system and warps between them can be up to 342 AU. The vast distances and huge number of wormholes ensures that keeping a lockdown on all of the stations and wormholes in the system will be exceedingly difficult, although we expect it to be an extremely dangerous place.

- Anchored warp disruption bubbles will not be usable within Thera, although interdictor and heavy interdictor bubbles work normally.

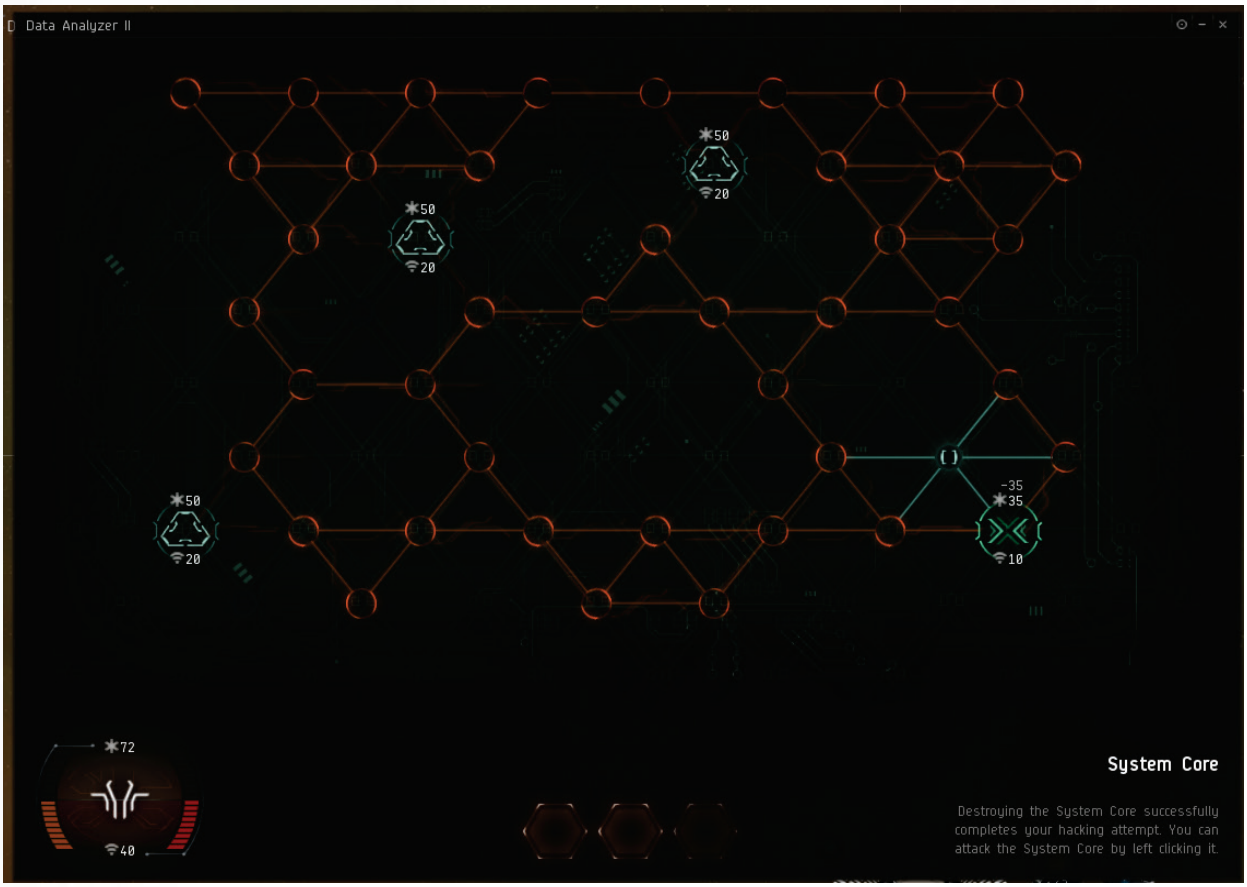
- Thera does not have a system bonus effect.

- Thera contains wormhole signature and anomaly sites appropriate for class 3 and class 4 wormholes, as well as all the different types of wormhole gas mining sites on par with a class 6 wormhole system.



Raiders Of The Data And Relic Sites

The gameplay remains the same between both Hacking and Archaeology as an older computer system both visually and aurally. The window shows the user the computer system mapped out as a network of interconnected nodes. One of the node's contents is already visible as this was the penetration point of the activated module. Users hack a system by exploring the nodes adjacent to the nodes that they have already explored. The goal is to find the core or cores in the system and taking them over by destroying them.



Once the core is destroyed the system has been hacked and the content of the container can be looted.

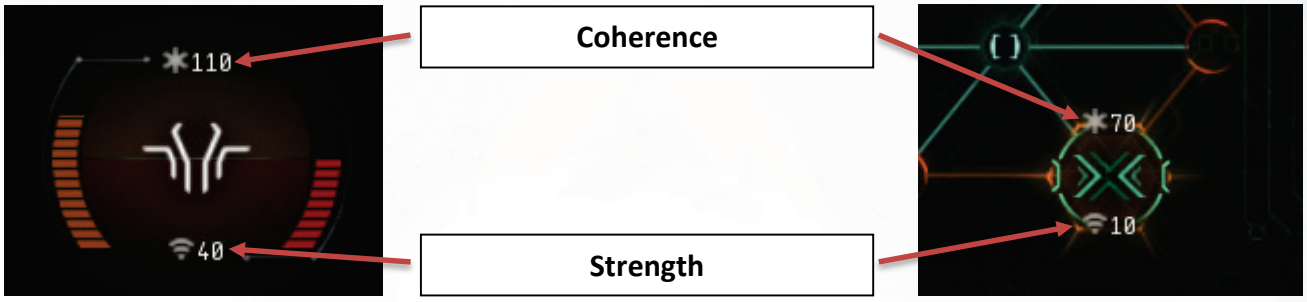
Along the way users are going to encounter a variety of different subsystems:

Defense Subsystems – These are the protectors of the system, once uncovered they prevent the module from spreading to nodes adjacent to it. Some advanced defense subsystems also have other abilities to confound attackers.

Utility Subsystems – Scattered throughout the computer system are various utilities that the user can take and either use to bolster their module or attack defense subsystems and the cores.

Datacaches – These encrypted nodes are typically benign. The user can choose to decrypt the node to discover its contents. This might uncover a great utility or it might bring some particularly nasty defense subsystem online.

Cores – Mentioned above already these are the heart of the system being hacked. Destroy all the cores in a system and you gain control.



The modules, defense subsystems and cores have attributes that define their coherence (hit points) and strength. Combat is resolved through the attacker going first. The defender's coherence is reduced by the attacker's strength and visa-versa if the defender survives.

Modules also have a number of utility slots, this limits the number of active utilities that a module can have at a time.

A hacking attempt is failed when the module loses coherence in the system. Fail too many times and the system will self-destruct the object destroying all its contents.

Hacking attempts can also be failed by flying too far away from the object being hacked, by taking too long and being kicked out of the system or by closing the module UI. On top of which only one person can hack an object at a time.

Aside from the “lucky scan” skills, there are two others that might come in handy for serious explorers to have trained:

Hacking – Data Analyzer

Allows access to some confidential data, only for specific cans and structures - In theory. This skill allows you the knowledge to get confidential data, and is required in sites that can be scanned in Cosmos areas and missions. The “Hacking” skill now grants 10+ virus coherence per level.

Skill Requirements for Hacking:

- Science level III
- Electronics Upgrades level III
- CPU management level II
- Power Grid management level II

Module Name	Meta Group	Bonus	Cycle Time	Optimal Range	Virus		
					Coherence	Strength	Utility Element Slots
Data Analyzer I	Tech I	5%	10 sec.	5000 m	40	20	3
Data Analyzer II	Tech II	7%	10 sec.	6000 m	60	30	3

Archaeology – Relic Analyzer

Ancient ruins and secrets. Almost the same as the Hacking skill, but here you excavate ‘long-lost technology’ from old buildings and rusty containers. The Relic Analyzer module works just like the Data Analyzer. You only need level I of this skill to fit an Analyzer, and level V to fit the Tech II version. The “Archaeology” skill now grants 10+ virus coherence per level.

Skill Requirements for Archaeology:

- Science level III
- Survey level III
- CPU management level I

Module Name	Meta Group	Bonus	Cycle Time	Optimal Range	Virus		
					Coherence	Strength	Utility Element Slots
Relic Analyzer I	Tech I	5%	10 sec.	5000 m	40	20	3
Relic Analyzer II	Tech II	7%	10 sec.	6000 m	60	30	3

Implants

The good news: we have some implants to improve our skills:

Name	Effect
Poteque 'Prospector' Archaeology AC-905	A neural Interface upgrade that boosts the pilots exploration skills. +5 Virus Coherence when accessing archaeology containers.
Poteque 'Prospector' Hacking HC-905	A neural Interface upgrade that boosts the pilots exploration skills. +5 Virus Coherence when accessing hacking containers.
Poteque 'Prospector' Environmental Analysis EY-1005	A neural Interface upgrade that boosts the pilot's skill at environmental analysis. 5% reduction in cycle time of salvage, hacking and archaeology modules.

Ships

We can increase our chance with the proper ship, worth it to use the following ones:

- **Tech I exploration frigates** (Magnate, Heron, Imicus and Probe) now have a **+5 bonus** to your Data and Relic Analyzer Strength
- **Tech II covert ops frigates** (Anathema, Buzzard, Helios, Cheetah) now have a **+10 bonus** to your Data and Relic Analyzer Strength
- **Tech III Emergent Locus Analyzer electronic subsystems** now have a +**10 bonus** to your Data and Relic Analyzer Strength

Rigs

We have four (2 x Tech 1 and 2 x Tech II) rigs to improve our Virus Coherence, these are:

Name	Effect
Small Emission Scope Sharpener I	This ship modification is designed to increase the efficiency of a ship's relic modules. +10 Virus Coherence when accessing relic containers.
Small Emission Scope Sharpener II	This ship modification is designed to increase the efficiency of a ship's relic modules. +20 Virus Coherence when accessing relic containers.
Small Memetic Algorithm Bank I	This ship modification is designed to increase the efficiency of a ship's data modules. +10 Virus Coherence when accessing data containers.
Small Memetic Algorithm Bank II	This ship modification is designed to increase the efficiency of a ship's data modules. +20 Virus Coherence when accessing data containers.

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Nullsec Basics

Beyond HiSec and LowSec, beyond the busy highways of Empire space, lies NullSec. Often considered the 'end-game' of Eve, NullSec (or 0.0, as it is sometimes called) regions are controlled entirely by players. Life in NullSec can be the biggest challenge you encounter in Eve, but it can also be the most rewarding.

Different Types Of Nullsec

The great majority of NullSec is controlled by players through the 'Sovereignty' system ('Sov Null'), but there are a few regions of 0.0 where Sovereignty is held by NPC corporations. These regions are referred to as 'NPC NullSec', and contain NPC stations useable by any player. The following is a list of NPC NullSec regions and their respective Sov-holders.

- Curse (Angel Cartel)
- Great Wildlands (Thukker Tribe)
- Outer Ring (O.R.E)
- Stain (Sansha's Nation)
- Syndicate (Intaki Syndicate)
- Venal (Guristas Pirates)

There are also a few systems in the Pure Blind region that belong to Mordu's Legion Command and The Servant Sisters of Eve.

Wormhole Space is also considered to be NullSec space, as it too has a Security Status of zero or lower. Unlike NullSec though, no Sovereignty can be claimed in Wormhole systems, and no stations can be built (though you can build a POS).

Daily Life

The great majority of players come to NullSec for PVP, or for the increased rewards available in 0.0 space. But they do not come alone. Sov Null regions are almost entirely ruled by large player alliances, some numbering thousands of players, and NPC NullSec, while tending towards a smaller scale than Sov Null, is still home to large corps and smaller alliances with members in the hundreds as well as smaller, more independent entities. Territorial wars across entire regions are a frequent occurrence and large-scale fleet engagements are common, as is the use of Capital Class vessels such as Titans and Supercarriers.

There is no CONCORD or Faction Navy protection in NullSec, regardless of whether NPC or player Sovereignty. There are no gate or station sentry guns, no NPC gate patrols or Customs Officers, and no Security Status loss for any action, combat or otherwise (including destroying pods).

NullSec is also the only space where Bombs and Warp Disruption bubbles can be used. Bombs are unique to the Stealth Bomber class of Covert Ops Frigate, and do large amounts of Area Of Effect (AOE) damage. Warp Disruption bubbles are created by Interdictors, Heavy Interdictors and Mobile Warp Disruptors, and disrupt the warp engines of any ship caught within the radius of the field. Bubbles will also 'drag' ships if the line of their warp (from A to B) intersects a bubble. This effect will occur even if the bubble is placed beyond the landing point, and players often deploy them behind high traffic gates in line with the warp in, to catch travellers and other fleets. Bombs and bubbles will be discussed in more detail later in this chapter.

Corporations, Alliances & Standings

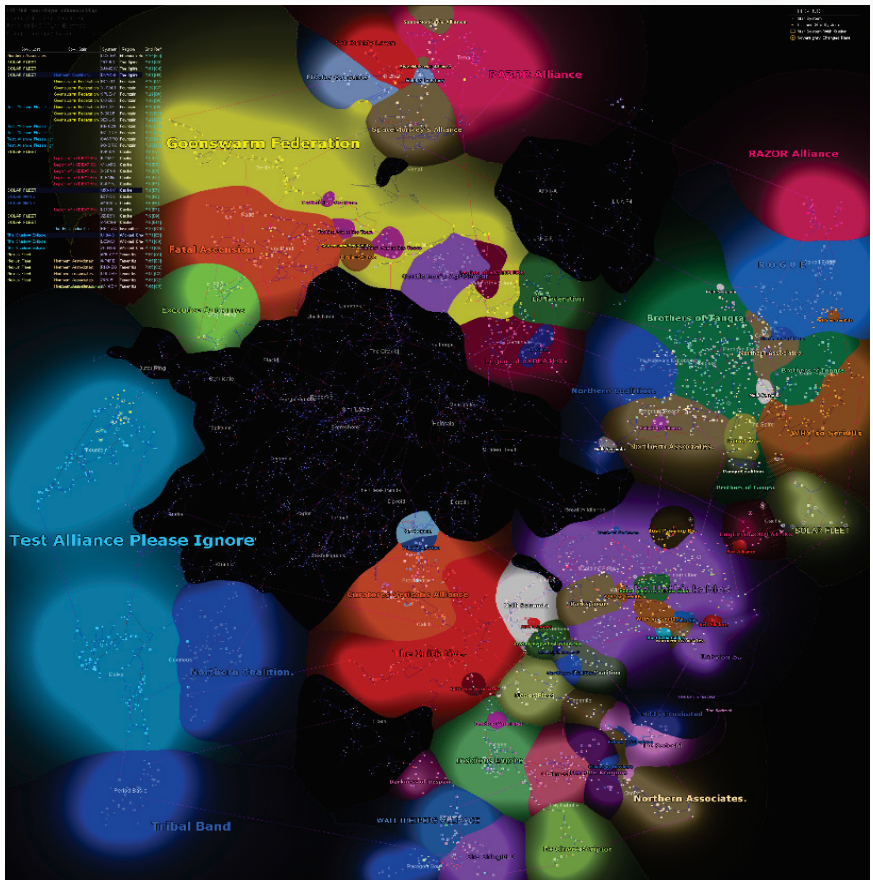
Almost all NullSec space is under the control of a player alliance or corporation, and the best way to get out there is to become a member of one of those corporations. 0.0 is anything but homogenous though – there can be huge population differences from region to region. Large areas of Sov Null may be almost entirely unpopulated, the alliance's strength concentrated elsewhere, or deployed for battle halfway across the galaxy, while the smaller areas of NPC Null can be densely populated, with frequent roaming fleets.

No matter how busy or quiet, the backbone of NullSec is the Standings system. Corporations and alliances define both allies and hostiles using this system: allies are designated as +5 (Good Standing) or +10 (Excellent Standing), and hostiles are designated as -5 (Bad Standing) or -10 (Terrible Standing). Designated neutrals (i.e. a corporation you have assigned neutral standing to) are considered to have 0 Standing. Each will have a colour assigned to it (the colour assigned in the overview settings/appearance menu), and any entities with no standing will appear grey (default).

Standings quite literally make and break alliances. The political side of larger alliances can be quite intense and diplomatic incidents of one sort or another are common, some of which start titanic wars. Smaller alliances may fragment and reform, fall apart from neglect or be demoralised and destroyed by a more powerful opponent, while the larger alliances are slow to anger, but devastating when roused to war.

Sovereignty

Supremacy, or sovereignty, of an area can only be held by an alliance. If an alliance has sovereignty in the system that has an outpost, then the outpost cannot be attacked nor conquered. The sovereignty holder of an area has the option to deploy Infrastructure Hubs (iHUBs) to improve the attributes of the given system or to provide new opportunities for the inhabitants.



Sovereignty can only be held in Nullsec and then only in non-NPC held systems. The process of gaining sovereignty is based on really simple principals.

To be able to gain sovereignty you must control a Territorial Claim Unit. After anchoring a TCU and it has finished the cycle to be online, the alliance who put it up will gain sovereignty over the system.

About TCUs

It takes five minutes to anchor a TCU and eight more hours to bring it online. Anyone who has the role of 'Config Starbase Equipment' in the corp or alliance can anchor the TCU on behalf of the alliance.

TCUs can be anchored anywhere in a system with the exception of within 50 kms of the control tower of a POS.

A beacon is visible when it is anchored or online in a system, therefore anyone can warp to the TCU.

POS control towers cannot be anchored at a moon if a TCU is already anchored there. TCUs are vulnerable to attacks while they are in the 'anchored', 'anchoring' and 'being online' states.

A TCU is invulnerable unless both of the following conditions are fulfilled:

- Sovereignty Blockade Units are anchored and put online at more than 50% of the gates in the system.
- The sovereign entity over the system does not possess an Outpost, Conquerable Station or an online Industrial Hub within the system.

A TCU can be anchored if the sovereignty status of the system is contested, but cannot be onlined if Sovereignty Blockade units are present at 51% or more of the gates in the system. If the corporation that anchored the TCU leaves the alliance, the TCU will go offline.

The upkeep bill is issued to the corporation that anchored the TCU during the online period. If this bill has not been paid when the TCU is due to go online, it will instantly go offline. This means sovereignty will not be claimed, and the process has to be repeated again. Both the Station Manager role and the Config Starbase Management role are required in order to be able to offline or unanchor a TCU.

The CEO and the directors in the corporation that launched the TCU can transfer ownership of it to another corporation within the same alliance. This can be done from the contextual menu when you right-click on the structure. All open upkeep bills have to be paid before the transfer is possible. Ownership of the Infrastructure Hub within the system (if present) will automatically transfer at the same time.

Claiming Sovereignty

As mentioned earlier, to claim sovereignty (or 'sov') you have to anchor and online SBUs at a minimum of 51% of the gates in a given solar system. This does not mean we clicked on the I-WINSOV button.

By anchoring these, your alliance has only gained the ability to attack the stations or iHUBs currently in the system. The table below shows how many SBUs are needed for different systems:

Number of Gates	Required amount of SBUs
System with 1 gate	(1*0,5+1) rounded down = 1 SBU
System with 2 gates	(2*0,5+1) rounded down = 2 SBUs
System with 3 gates	(3*0,5+1) rounded down = 2 SBUs
System with 4 gates	(4*0,5+1) rounded down = 3 SBUs
System with 5 gates	(5*0,5+1) rounded down = 3 SBUs
System with 6 gates	(6*0,5+1) rounded down = 4 SBUs

In case the number of active SBUs goes below the required amount, the process will be interrupted (like when an SBU has been destroyed, for example).

About SBUs

Anchoring takes five minutes per SBU. Putting one online takes three hours. Anyone with Config Starbase Equipment role can anchor or online the SBU on behalf of his alliance. The ownership of the SBU will belong to the corp and alliance of the pilot, who put it online. SBUs are visible on the overview once they are anchored. SBUs must be placed between 30 km to 150 km from the stargate. It does not matter who launches the SBU; an alliance can even disrupt their own sovereignty claim. SBUs are vulnerable to attacks, with the following exceptions:

- When all structures within a system that the SBUs caused to become vulnerable to into reinforce mode.
- All SBUs within a system will enter parallel reinforcement mode along with those structures.
- As soon as any of the structures mentioned above come out of reinforcement mode, the SBUs will become vulnerable once more.

If the amount of stargates within a system covered by an online SBU falls below 51% at any point during system conquest, the defender will be considered as having successfully defended their system and vulnerable structures (Stations, iHUB, TCU) will become invulnerable once more.

Advantages of Sovereignty

Besides bragging rights, there are various benefits if the name of your alliance appears as sovereignty holder over a system:

- Gives special protection to the system. Without sovereignty, stations or outposts are vulnerable to attack at all times, even when SBUs have not been anchored at gates within the system. Stations will also not have protection in the form of 'reinforcement timers' if the station holder is not the sovereign entity over the system.
- The ability to set up an iHUB is granted to the sovereignty holder. It has the advantage that the sovereign alliance has the option to anchor special POS modules like a Capital Ship Construction Array or a Jump Bridge if the necessary upgrades have been installed.
- POSes anchored in a system where your alliance holds SOV consume 25% less fuel.
- The system is displayed as belonging to the sovereign entity on the in-game starmap. It can take up to an hour for the starmap to update to display the new owner of a system once it is claimed.

Upkeep Fees

The alliance must pay upkeep in order to maintain sovereignty over a system. Each system is on a distinct 14-day billing cycle. The upkeep bill must be paid in before the billing cycle it applies to begins. If a bill is not paid for a system in time, sovereignty is lost (the TCU goes offline) as soon as the current billing period ends.

Therefore, it is recommended that corporations responsible for paying the upkeep bill on behalf of their alliance set sovereignty bills to be paid automatically, and have enough ISK in the account which the upkeep bills are subtracted from. The first bill will be issued when the TCU comes online. If the bill is not paid the TCU will shut down immediately.

The ISK amount to be paid for each system depends on the amount of strategic infrastructure that has been established in the system. Military and industrial upgrades do not affect the upkeep bill. The cost of the upgrade can be seen in the table below:

Upgrade / Structure	ISK Cost / Day	ISK Cost / 2 Weeks	ISK Cost / 30 days
Territorial Control Unit	6,000,000 ISK	84,000,000 ISK	180,000,000 ISK
Supercapital Construction Facilities	1,000,000 ISK	14,000,000 ISK	30,000,000 ISK
Cynosural Navigation	2,000,000 ISK	28,000,000 ISK	60,000,000 ISK
Advanced Logistics Network	10,000,000 ISK	140,000,000 ISK	300,000,000 ISK
Cynosural Suppression	20,000,000 ISK	280,000,000 ISK	600,000,000 ISK

The corporation is billed for upkeep, regardless of the status of the iHUB. Essentially, the corporation responsible for paying the bills will be billed for the installed upgrades and the iHUB regardless whether it is active or not.

When an upgrade is installed in an iHUB, the upkeep cost will be deducted from the master division of the corporation wallet to cover the costs for the remaining days of the current ongoing billing period.

If an alliance loses sovereignty, due to the upkeep bill going unpaid, or for any reason for that matter, all POS structures within the system that require strategic upgrades will go offline instantly.

Infrastructure HUBs (iHUB)

Alliances can improve their infrastructure in systems where they hold sovereignty with the Infrastructure Hub.

Upgrades can then be installed and activated within the iHUB provided prerequisite

Development Indexes to install each upgrade have been developed.

How The IHUB Works

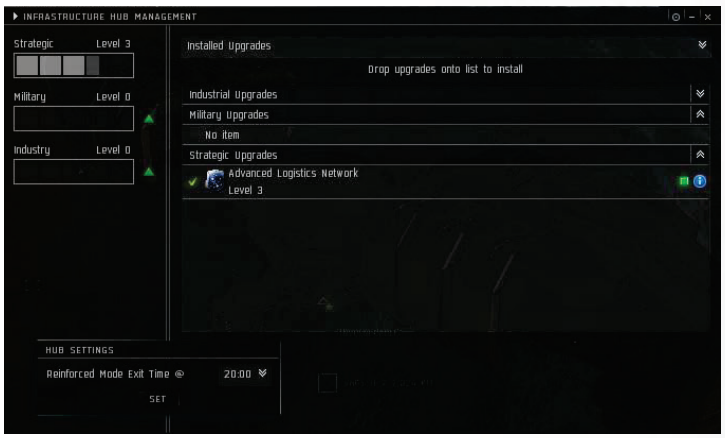
As Infrastructure Hubs must be destroyed by the attacker when conquering a system in order for the TCU to go vulnerable, they are provided with similar protection as conquerable outposts.

- Infrastructure Hubs are invulnerable to attacks unless SBUs have been anchored at more than 50% of the gates in the system.
- They have a dual reinforcement timer like stations. A desired reinforcement exit time can be entered by the CEO and all directors within the corporation that anchored it. Additional time is added to this predefined timer (24±2 hours).
    - **For example,** a desired reinforcement exit time is set to 18:00. The iHUB goes into reinforced mode at 11:00. The starting value is therefore seven hours. 24 hours are added to that value totalling up to 31 hours. A random value between two and minus two is then added to that value, meaning that the station will come out of reinforce mode anywhere between 29 and 33 hours from when it was put into reinforce mode.

- Meanwhile, dual reinforcement works as follows:
    - Once an iHUB reaches 25% shield hit points, the iHUB goes into reinforcement mode. During this time the iHUB is invulnerable to attacks and cannot be remotely repaired. It will come out of reinforce mode at 0% shield hitpoints.
    - Once an iHUB reaches 50% armor hitpoints it goes into the second reinforce mode. It will come out of reinforce mode at 25% armor hitpoints.
    - Should the defenders be able to remote repair either the shields or the armor following the iHUB exiting reinforce mode, the structure will re-enter the respective reinforce mode (shield/armor) when it reaches the right value again.
- When an iHUB reaches 0% structure hitpoints, it is permanently destroyed including all installed upgrades.

About iHUBs

An iHUB can only be anchored by members of the corporation that owns the online TCU within the system. This requires active sovereignty for the deployment of an iHUB. It takes one hour to anchor the structure and another hour to online it. Only one iHUB can exist in a system at any one time, and sovereignty must be claimed before one can be anchored.



- The Config Starbase Equipment role is required for anchoring and onlining an iHUB. Both the Config Starbase Equipment role and the Station Manager role are required for offlining or unanchoring an iHUB.
- An iHUB must be anchored at a planet, but cannot share a planet with an outpost or conquerable station. Also, it can be anchored and put online in a system that does not contain any stations.
- When an iHUB is unanchored, all upgrades that have been installed in it are destroyed.
- If a sovereignty holder loses sovereignty over a system for some reason while still possessing an iHUB within the system, then the iHUB will go offline and it cannot be put back online until sovereignty is regained.
- If the criteria for having certain structures such as Capital Ship Assembly Arrays within a system are no longer met due to the iHUB being destroyed, then all such Starbase (POS) structures will go offline.
- When an iHUB is invulnerable, it is possible to target it, but not to damage it. However, the iHUB can be repaired while in reinforce mode. The iHUB only fits in a freighter, so make sure that the right spot has been chosen for the iHUB.

Infrastructure Upgrades

Development indexes measure activity in certain areas within a system. They have five levels, the higher the index level, the greater the benefits given in the form of additional infrastructure upgrades available to you.

The three development indexes are the Military Index, the Strategic Index and the Industrial Index.

Strategic Index

The strategic index measures the amount of time the current alliance has held sovereignty in that system and is measured on the following scale:

Sovereignty Index	Requirement
Level 1	Sovereignty held for at least 7 days
Level 2	Sovereignty held for at least 21 days
Level 3	Sovereignty held for at least 35 days
Level 4	Sovereignty held for at least 65 days
Level 5	Sovereignty held for at least 100 days

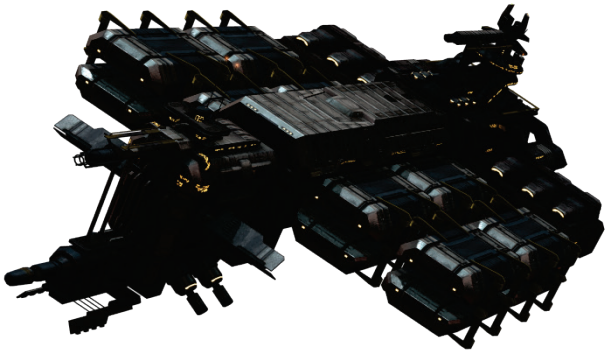
Military Index

The military index can be raised by killing NPCs in a solar system.

Industrial Index

The industrial index is somewhat more complicated. Since the Dominion expansion, there has been a new sovereignty mechanic that allows the development of system indices based on usage levels. (Thanks to: **Bloodtear Industy Index Report**)

It was quickly noted that raising the military index was extremely easy and took little time to maintain, but that the industrial index would seemingly never increase regardless of how many miners you had. The Bloodtear mining fleet has personally created four level V industry systems over the past few months, and monitored them over a period of weeks to gather this information.



Industry is notoriously difficult to level up, and not much public information is available regarding details of the system.

Data Collection

We directly monitored the iHUB index every 15 minutes over the course of system development. We managed to secure a remote system and upgrade it to level V from level I within 24hrs, with no one else in system. This gave us highly accurate numbers. Asteroid belts were scanned using a Rorqual scanner which can obtain an accurate read on the entire belt in one pass.

Hidden belt composition was recorded immediately after downtime right after they had respawned. This was repeated for many weeks, and was noted that all hidden belts of the same size are nearly identical.

The System

The industrial index decays at a rate of 1% per hour (or around 25% per day). The index is increased by the total volume (m3) of mined goods. The following is a table illustrating the amount of m^3 required to be mined to maintain each level:

Index Level	Mined Volume To Obtain	Volume / Day To Maintain	Man Hours / Day To Maintain
1	1,500,000 m^3	750,000 m^3	4,5
2	3,000,000 m^3	1,500,000 m^3	9,1
3	6,000,000 m^3	3,000,000 m^3	18,2
4	12,000,000 m^3	6,000,000 m^3	36,4
5	24,000,000 m^3	12,000,000 m^3	72,8

It should be noted that ice mining pulls up roughly half the volume of ore mining. So attempting to raise the index through ore mining is most preferred.

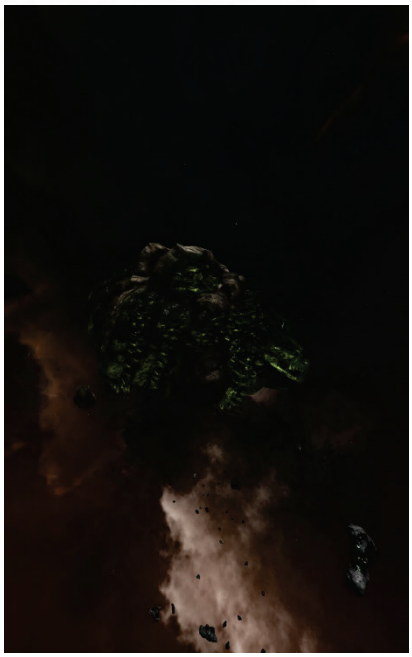
The belts respawn on a theoretical three-day timer (this is contested, with many people believing it is actually four days, or a random 35 days. Our information on this conflicts these and the report is based on the three-day belief). If you drop below the threshold to maintain a belt, it will still exist until its three-day timer is up, and won't come back until the index is back up.

Index Level	What You Get
1	Small
2	Moderate
3	Large
4	Enormous
5	Colossal

The index level of your system at downtime is what determines what will spawn. Mining a hidden belt to extinction will respawn it within five minutes if there is no one left in the belt. The hidden belts must be scanned down using probes. The larger the belt, the harder it is to scan down. Every upgrade gets you everything contained by the previous upgrades, plus the current.

Small Asteroid Cluster

The small asteroid cluster is your first real foothold into the world of industry development. Up until this point you had to mine lots of small-time asteroids that typically evaporated seconds into your cycle, leading to vast inefficiency, annoyance, and the need to move within range of new asteroids.



The small asteroid cluster contains the single largest asteroid in the game, The Spod! The Spod is a whopping 4,000,000m^3, at 250,000 units. It takes 24+ man hours to mine this guy out, and doing so is enough to push a fresh level I system up into level II.

The entire belt is centred around The Spod.

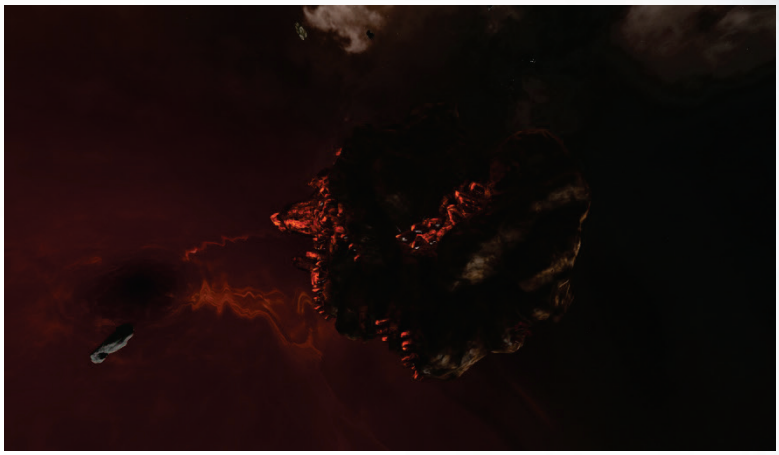
The small belt is dispersed just enough to make you move 34 times if you're mining it out completely. The combined total wealth contained in the small belt is 7.66mil m^3, and takes 47 man-hours to mine. If you mine the small belt to completion you'll be halfway through level II.

Cherry picking (mining ABCM – Arkonor, Bistot, Crokite, Mercoxit) taking 6.3 man-hours.

Ore	Amount	Asteroids
Arkonor	20,000	4
Bistot	20,000	4
Crokite	25,000	2
Dark Ochre	70,000	2
Gneiss	35,000	1
Hedbergite	86,000	5
Hemorphite	83,000	8
Jaspet	120,000	5
Kernite	254,000	6
Mercoxit	0	0
Omber	300,000	5
Plagioclase	208,000	4
Pyroxeres	210,000	4
Scordite	0	0
Spodumain	280,000	2
Veldspar	406,000	5

Moderate Asteroid Cluster

The moderate belt is fairly dispersed with an even spread of ores. If you're a Tech II miner (which you should be), then you'll be swapping out crystals often in here, and be forced to move often (six or more times). The belt is around 150km long. The moderate belt is not worth mining to completion, it should only be cherry picked.



The ABC represents 25% of the volume, and 50% of the value. This is the first belt you'll encounter with Mercoxit.

The volume is 5.35mil m3, taking only 34 man-hours to mine out. However, inefficiencies due to movement and constantly switching asteroids will bring the profit more in line with the small belt. Cherry picking potential however, taking 12.3hrs.

Ore	Amount	Asteroids
Arkonor	30,000	2
Bistot	35,000	4
Crokite	20,000	2
Dark Ochre	40,000	4
Gneiss	45,000	4
Hedbergite	100,000	4
Hemorphite	100,000	4
Jaspet	120,000	4
Kernite	400,000	11
Mercoxit	10,000	1
Omber	400,000	11
Plagioclase	840,000	11
Pyroxeres	965,000	11
Scordite	940,000	13
Spodumain	40,000	4
Veldspar	1,260,000	13

Large Asteroid Cluster

The large asteroid belt (level III) is the most value asteroid belt you have. The large asteroid belt is completely minable from only two warp-in spots, which eliminates the need for movement (okay, have to move a little, but not more than 5km from those two spots).

There are only a handful of asteroids, but each is very large, which makes mining them much easier as well. The belt itself is centred on a few white space coral type things which can and will bounce your hauler if you warp in too close to them. The Mercoxit patch is close to one of the warpin spots, so steer clear of that when setting up. This belt is small at only 5.38mil m3, and takes only 34 man-hours to complete. However, the average profit per miner is the highest of any belt, at 27.4mil/hr. This belt contains 44.6% ABCM by volume, which is the highest of any belt. The total belt is worth only 930mil, but because it's so small, it's easily the most profitable belt to mine to completion repeatedly.

The cherry picking potential of this belt taking 16.2hrs. Note that this is just under half the belt – which gives a fair estimate that this belt is worth a lot. This distribution demonstrates how concisely packed the asteroids are.

Most occurrences are only in one asteroid, of a size slightly larger than the other belts.

Ore	Amount	Asteroids
Arkonor	35,000	1
Bistot	50,000	1
Crokite	40,000	1
Dark Ochre	50,000	1
Gneiss	60,000	1
Hedbergite	80,000	1
Hemorphite	80,000	1
Jaspet	120,000	1
Kernite	400,000	4
Mercoxit	10,000	1
Omber	400,000	3
Plagioclase	300,000	2
Pyroxeres	0	0
Scordite	0	0
Spodumain	50,000	1
Veldspar	0	0

Enormous Asteroid Cluster

The enormous asteroid belt is composed like the moderate belt, but 100km long.

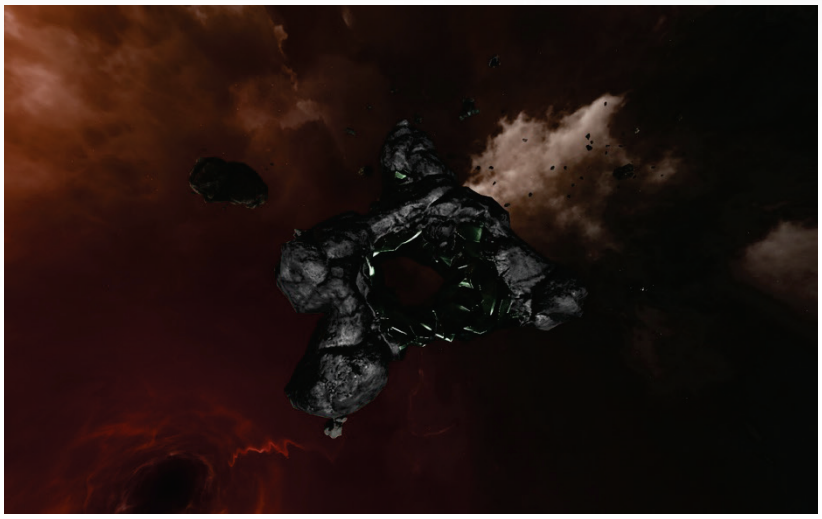
As can be seen below from the asteroid counts, it contains lots of smaller asteroids, which will leave you shifting targets and moving frequently.

The extra-large is 11.2mil m^3 which is more than twice the size of the large belt. Taking 70 man-hours to mine, this is truly an extra-large belt.

Cherry picking is worth it, taking 21.6 man-hours. This belt should be cherry picked for ABCM only.

Ore	Amount	Asteroids
Arkonor	40,000	4
Bistot	60,000	5
Crokite	60,000	5
Dark Ochre	60,000	5
Gneiss	80,000	6
Hedbergite	700,000	19
Hemorphite	300,000	10
Jaspet	420,000	11
Kernite	500,000	12
Mercoxit	15,000	1
Omber	0	0
Plagioclase	560,000	12
Pyroxeres	765,000	10
Scordite	660,000	8
Spodumain	200,000	8
Veldspar	930,500	11

Colossal Asteroid Cluster



The colossal asteroid belt is a monstrosity. It's big, so you will have to move a few times if you plan to mine this thing out, but you'll be spending hours at each spot. Each asteroid is very large which means it'll take a long time before you have to change targets.

Mining out the Bistot asteroid takes 7.8 man-hours by itself. The entire belt is 12.12mil m^3, making it the largest hidden belt in the game. It takes 76 man-hours from perfect miners to mine it completely. The ABC ores compose more than a quarter the volume, and well over half the value.

Cherry picking takes 26.5hrs. Mining this belt repeatedly may seem like a good idea, but you're still going to see more money if you cycle the large belt instead.

Ore	Amount	Asteroids
Arkonor	50,000	1
Bistot	80,000	1
Crokite	80,000	1
Dark Ochre	100,000	1
Gneiss	100,000	1
Hedbergite	200,000	2
Hemorphite	780,000	9
Jaspet	500,000	4
Kernite	600,000	4
Mercoxit	15,000	1
Omber	500,000	3
Plagioclase	0	0
Pyroxeres	0	0
Scordite	0	0
Spodumain	200,000	1
Veldspar	0	0

Belt Comparison

We've pulled all the data from each belt together for quick comparison. It's amusing to note that the moderate and large belts are smaller than the small. The large asteroid belt has the highest percentage of ABCM, which gives it the highest average income rate if mined repeatedly.

Now this is a perfect time to point out that mining only the ABCM is not enough to maintain the industry standing. Note that the belts are on a three-day respawn timer, thus you only mine the cumulative volumes. Below is a table of how sustainable each level is through only cherry picking. If you only wish to cherry pick, then a level II or level III system is ideal.

Size	Volume (m^3)	Time (Man Hrs.)	Percent ABCM
Small	7 663 200	47	13,57 %
Moderate	5 355 500	34	32,86 %
Large	5 385 000	34	44,57 %
Enormous	11 210 550	70	28,19 %
Colossal	12 124 000	76	32,66 %

The hidden belts are good at obtaining high-end minerals worth substantial sums. However, they are terrible at obtaining low-end minerals such as Tritanium and Pyerite. This is the great imbalance of hidden belts which limits their usefulness for deep space mining operations. You may be able to mine all the high-end minerals you need for construction jobs, but you'll still need to import low-end stuff. There is no good way to mine large amounts of low-end minerals, especially as Veldspar rocks evaporate within a cycle of two of being touched.

Mining Strategy

This may sound foolish, since mining is point and shoot, but there are a number of things to take into consideration when setting up mining systems. The size of your corporation and number of regular active miners is obviously the most important. 12 miners can easily maintain a level I system with regular work, doubling the miner count for each level after that. Finding 32 regular unique miners to maintain a level V system is very hard. Most high level systems will be easier maintained by a few multiboxers sporting many accounts each.

Maintaining a level V system is possible, but not realistically feasible, nor desirable. For ideally mining a level V system, you'll want to cherry pick the small, moderate, extra-large and giant belt, while cycling the large. To maintain the required 36mil m^3 to maintain level V every three days, you'll need to cycle the large belt five times, and completely cherry pick out the others. Doing this to minimally maintain level V is the most optimal way to milk the system, every three days while taking 237 man-hours (79hrs/day).

Great, but is there a better way? Yes there is. For the same amount of work of sustaining a level V system, you can sustain two level IV systems. Cherry picking the small, moderate, and extra-large, and cycling the large 2.25 times every three days, taking 233 man-hours.

Consequences

The higher your industry rating the more 'reds' will come to visit you. If you have a level V system they will permacamp in cloaked vessels all day just to spite you. We've personally created four level V systems during Dominion, and all of them ended up being permacamped until they decayed back to level III. At any given point, only one or two solar systems in the galaxy will be level V industry, and players will seek you out. If there is a station in your system, you will get twice as many reds.

Without a way to conceal the industry standing of your system this is unavoidable, and quickly renders any level V systems pointless. This is why you are much better off maintaining a series of lower level systems, which will not attracted unwanted attention. Level IV systems are common throughout the game because they are easy to maintain, and reds will not permacamp them. Level III systems are ignored entirely. Couple this fact with the increased profit from having many smaller systems this is obviously the way to go.

You work very hard to obtain your high level industry system, but you inevitably have to go to bed. If you're an American, expect all valuable ores to be poached long before you arrive. Downtime occurs in the middle of the night for Americans and middle of the day for Europeans. This gives a massive advantage to the European player base who can cash in on everyone else's work, while the people who actually maintain the system earn far less.

The industry index system levels are exponentially larger than the last, making it very difficult to achieve high levels. Recent Rorqual boosts have improved mining yields by ~8.5%, making this a prime time to create industrial systems. The best hidden belt is the Large Asteroid Cluster at level III. It offers the best money when mined repeatedly. Maintaining a number of level III systems is preferable to fewer level IV or level V systems. Having many level III systems offers better yields, and avoids the attention of reds who seek to disrupt your activities.

A level V system is not feasible to maintain because afk cloaked campers will occupy your system within days, rendering it too risky to mine in. Europeans receive the most benefit from the hidden belt system, as all belts respawn during their prime time, leaving them with the most accessibility to the valuable ores.

Important info

- The military and industrial indexes are linked to activity within a solar system and are thus not affected directly by sovereignty transitions. In other words, these indexes will persist at their current levels should sovereignty be lost.
- The current index levels in a system can be seen by opening up the Infrastructure Hub Management Interface, or by checking the sovereignty dashboard for the system.
- Indexes do not increase if there is no online Infrastructure Hub present in a system.

iHUB Upgrades

Infrastructure upgrades are bought directly off the market from NPC market orders. They can be installed in the iHUB if the appropriate conditions are met and the installer has the required roles. Installation can be done by dragging and dropping the upgrade from the cargo of the ship to the iHUB upgrade list.

General Information

- Can be installed by pilots possessing the Station Manager role.
- Can only be installed if the prerequisite Development Index level has been reached.
- Military and industrial upgrades come in five different levels. Each level has the prerequisite of the level before it. For the level five upgrade, an existing level four is a must, and so on.
- Military and industrial upgrades will only take effect after the next server downtime, strategic upgrades will be in effect immediately.
- Strategic upgrades increase the upkeep costs for maintaining a system.

Strategic Upgrades

Strategic upgrades allow alliances to anchor certain strategic structures in space. These structures can only be anchored at starbases (POSes). Each strategic upgrade module has a particular index level.

Supercapital Construction Facilities

As you can guess from its name, this strategic upgrade opens up the option of anchoring and onlining Capital Ship Assembly Arrays and Capital Ship Maintenance Arrays at starbases within the system. It is eligible for installation in iHUBs in systems with a strategic index level of one or higher.

Cynosural Navigation

This upgrade grants you the option for using Cynosural Generation Arrays. It requires a strategic index level of two or higher.

Advanced Logistics Network

This strategic upgrade gives the option of anchoring and onlining Jump Bridges at starbases within the system. It is eligible for installation in iHUBs within systems with a strategic index level of three or higher.

Cynosural Suppression

This upgrade gives the option of anchoring and onlining a Cynosural System Jammer at starbases within the system. It is eligible for installation in iHUBs in systems with a strategic index level of three or higher.

Military Upgrades

Military upgrades allow alliances to increase the rate at which wormholes and combat exploration sites spawn in a system. Each military upgrade module comes in five different levels, each level further increases the provided benefits.

Pirate Detection Array

This military upgrade adds a guaranteed number of at least four cosmic anomalies to a system per level. Each anomaly will re-spawn instantly upon completion. A system will therefore be guaranteed to have at least 20 cosmic anomalies at all times with a Pirate Detection Array of level five installed.

Entrapment Array

This military upgrade increases the chance of DED complexes spawning within a system. Every level of the upgrade increases the chance of the DED complex being a higher quality level.

Quantum Flux Generator

This military upgrade increases the chance of wormholes spawning within a system. Every level of the upgrade gives increased benefits compared to the lower levels. Don't forget: the wormholes aren't a one-way roads….

Industrial Upgrades

Industrial upgrades increase the quality of hidden asteroid belts and profession sites (Hacking, Archaeology and Salvage) in the system. Each upgrade has five levels and each level increases the efficiency.

Ore Prospecting Array

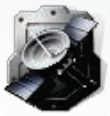
Each level of this array ensures a new hidden asteroid belt is added to the system. Such hidden belts can be found with exploration and they contain mineable asteroids. When you deplete one of these belts, it will be replaced by a new belt.

Note that the asteroids of such belts, if not depleted, will not grow at downtime. Improving the Ore Prospecting Array to the maximum of five provides five such permanent sites.

Ore clusters from Ore Prospecting Array are now scaled based on truesec of the system:

- For systems with truesec between -0.45 and -0.84: All ores in the Large, Enormous, and Colossal clusters will be the +5% upgraded variants
- For systems with truesec between -0.85 and -1.0: All ores in the Large, Enormous, and Colossal clusters will be the +10% upgraded variants

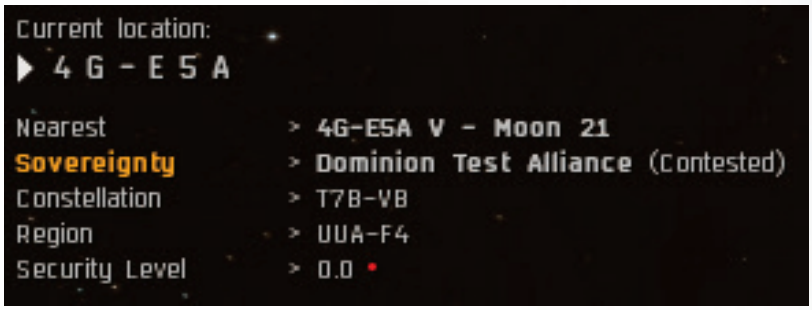
Survey Network



This upgrade generates Hacking, Archaeology and Salvaging sites. The higher the level of this upgrade the better the quality is of the site generated.

The Sovereignty Dashboard

Everyone can open the Sovereignty Dashboard for a given system. It is just a data sheet containing information about the system that displays who holds sovereignty there among other information. To access this, click on the Sovereignty link in the Current Location UI element at the top left in your client window.

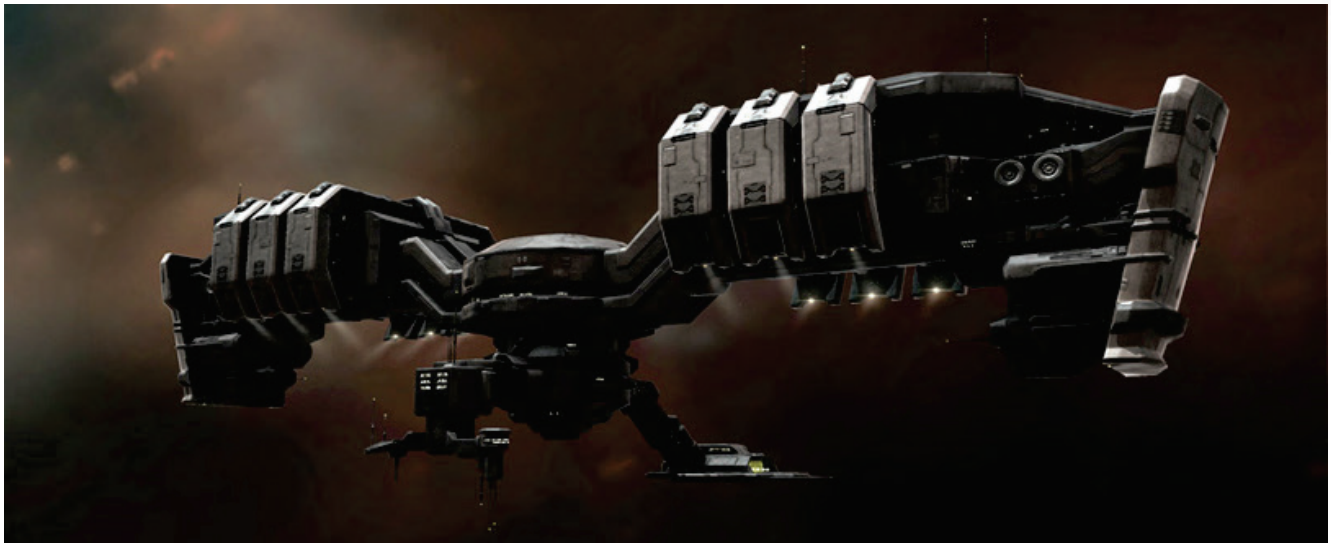


The various indexes about the current system can be seen here. Use the tabs at the top to look at information on the constellation, region, or the whole EVE universe. The Change tab shows information about sovereignty changes (lost and won territories).

Manufacturing Sovereignty Structures

The following modules can now be manufactured at stations, so they no longer need to be transported from high-sec in a freighter under dangerous circumstances:

- **Territorial Claim Unit (TCU)**
- **Sovereignty Blockade Unit (SBU)**
- **Infrastructure Hub (iHUB)**



Outposts

Have you always dreamed about owning your very own station? Now, here is the chance!

All you have to do is to open your market browser to order a few things. Well, it is not that simple, as an outpost is a player-built-station, and many, separately challenging conditions must be met. All outposts have some basic services (Market, Science & Industry, Repair Shop, Medical, Fitting, Bounty Office, and Insurance) and some race specific specialties.

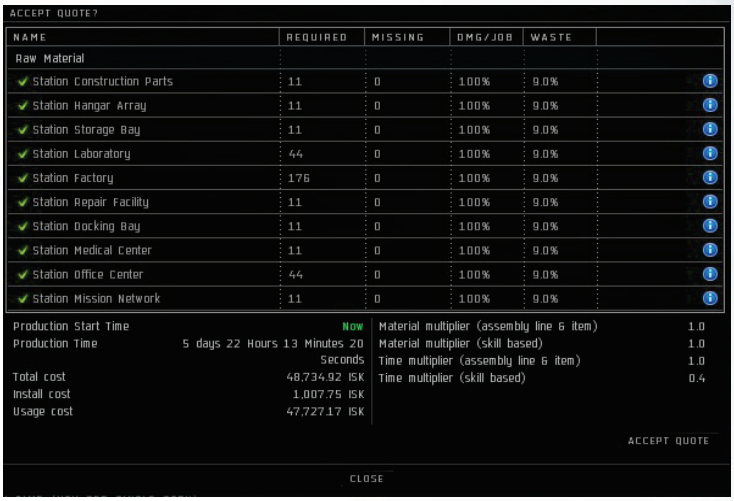
Below are some useful titbits regarding outposts:

- Outposts can be built only at the 'warp in' point of one of the planets in the system.
- Only one is allowed per system.
- Only alliances may build outposts. Independent corporations or pod pilots cannot anchor and online one for 'private use'.
- Once built, outposts cannot be destroyed, but can be conquered.
- The core structure of the outpost, called the egg, is the most vulnerable, especially while deploying and anchoring. In this state, it can be attacked and destroyed. One hundred million hitpoints can go fast.
- Outposts do not have weapons like NPC stations.
- Outposts do not require fuel, they are self-sufficient after completion.
- It is essential to own the territory, i.e. to have the sovereignty.
- Several freighters are required to carry some of the bulkier components and you will also need a defensive fleet to protect this operation.
- Outpost Construction level I is required to create the egg, and can be built on stations including other outposts.
- Anchoring level V is required to anchor the egg in space.
- You will need about 25-30 billion ISK to build one.
- Every upgrade costs a fortune.
- If you lose sovereignty, you might lose your outpost as well, but no less than an enemy fleet will be needed for this.

Outpost Construction

To begin creating an outpost you will need the following skills:

- Mechanic V
- Industry V
- Anchoring V
    - Outpost Construction I
- Outpost Construction I – V are required for upgrades



You do not have to buy the materials for the construction of the egg; you can manufacture these building blocks yourself. For example, the material requirements to build the Minmatar Service Outpost Platform and its Station Construction Parts are as follows:

Name	Bill Of materials (Perfect)
Station Construction Parts	11
Station Hangar Array	11
Station Storage Bay	11
Station Factory	22
Station Repair Facility	11
Station Reprocessing Plant	110
Station Docking Bay	11
Station Medical Center	11
Station Office Center	88
Station Mission Network	11

When the Outpost Construction Platform is ready on the station where it was built, you will need a freighter to carry it to its planned location. It is strongly recommended that you collect all the materials for construction as well, since it's very vulnerable while in space.

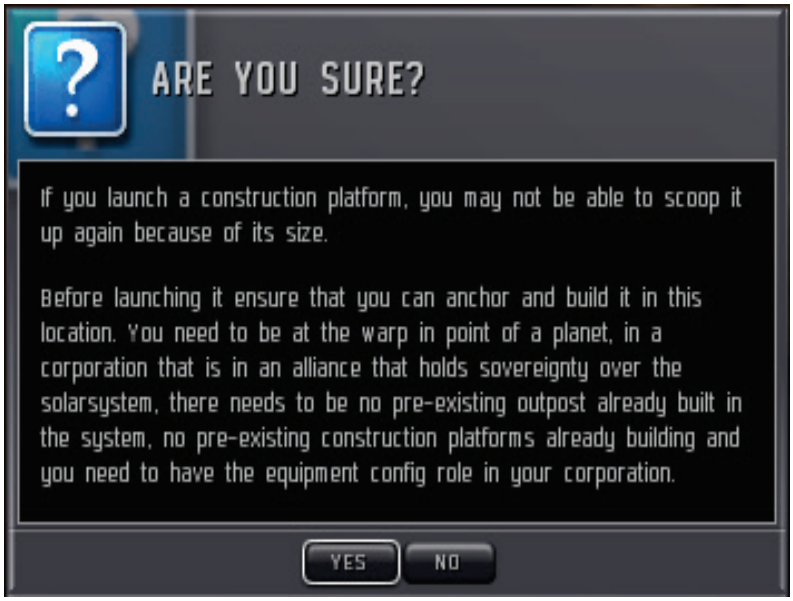
It is a great big 750,000 m^3 monster, so only freighters can carry it.

Anchoring Outpost

Creating a station from the egg requires a few more steps. Before you bring it to its planned location check:

- There are no other outposts (existing or under construction) in the system.
- Your alliance has Sovereignty.
- You have the required roles to anchor it (Equipment Config).
- You must have all the materials required to fully assemble your station.
- You can protect it while it is being built.
- You have enough freighter capacity to bring the egg and all the required materials to the construction site. You need at least four or five freighters just for the materials.
- Make sure you are in the right place where you want to anchor the station because once deployed it isn't possible to scoop back into your cargo.

If you are sure about everything listed above, you can right-click on the construction platform (the egg) and choose 'Launch for Corp'. You will see a warning message where you can confirm your intent to deploy the module.



If you have launched the egg and everything is right (you have sov, required skills, and roles) you can anchor the platform. It will take 60 minutes.

When it is done you should fill it with the materials required for construction. 'Show Info' on the construction platform will list the required materials.

As a side note, if you only start checking the required materials at this point, you have made a big, and I mean BIG, mistake. It is important to know, that you can buy these materials from the market.

Choose 'Access Resources' from the contextual menu to load building materials on the platform. Once fully loaded select 'Build' from the menu. Your outpost will be ready at the next downtime.

Most of them cannot be manufactured. Some of them might even be considered illegal contraband in certain empires! Pay attention to this to avoid surprises!

The following materials are required by the Minmatar Service Outpost Platform mentioned earlier:

Name	Amount Needed
Tritanium	387,522,911
Pyerite	32,293,575
Mexallon	6,055,045
Isogen	1,211,009
Nocxium	252,293
Zydrine	54,062
Megacyte	11,826
Carbon	5,587
Construction Blocks	155,649
Coolant	12,489
Electronic Parts	19,871

Name	Amount Needed
Hydrogen Batteries	23,574
Mechanical Parts	16,876
Miniature Electronics	7,465
Oxygen	25,468
Robotics	12,499
Silicate Glass	8,846
Silicon	5,489
Super Conductors	897
Synthetic Oil	17,874
Enriched Uranium	3,511
Plutonium	1,844

VERY IMPORTANT: Like with Secure Cargo containers, you can specify a password to access the contents of the platform, but, just like the containers, it is only possible while docked in station. You cannot specify a password if your platform is in your cargo hold! If you do not specify a password in time, you will not be able to do it before it is deployed.

The outpost construction process can take up to 24 hours, as it is always completed at the next day's downtime. When it is ready, your outpost will appear as a regular station on the overview. It will be visible for everyone.

While it is very hard to build an outpost, once it is built, it cannot be destroyed, only conquered.

Disabling Outpost Services

Various services available on outposts can be attacked independently, and the table above lists their hitpoints. You do not need to conquer the outpost or gain sovereignty to disable them. These services work like objects in space. They appear on the overview, they can be targeted, and they can be attacked.

When a service gets into structure damage it goes offline and cannot be used. To online it again, it must be repaired to 100% structure, 100% armor, and 50% shield levels with remote repair modules. These services cannot be destroyed; they are only disabled.

Upgrading Outposts

Upgrading an outpost is a two-step process. First, build and anchor an upgrade platform. Second, when your upgrade platform is ready you can build and install the planned updates. Like outpost construction, these steps always finish at daily downtime, so building a platform and installing an upgrade will be completed in two days.

As you can guess, constructing update platforms and individual upgrades work just like the outpost construction process. You build an egg, launch and anchor it, fill it with required materials, choose the build option and wait for the next downtime. There are three different levels of upgrades. Each level gives you a different number of upgrade slots. The three levels of upgrades are:

Foundation Upgrade Platform: You need Sovereignty level II to build it, and it allows building one Basic Outpost Upgrade (Tier 1).

Pedestal Upgrade Platform: You need Sovereignty level III and the Foundation Upgrade Platform to build it. It allows building one Intermediate Outpost Upgrade (Tier 2) and another Basic Outpost Upgrade (Tier 1).

Monument Upgrade Platform: You need Sovereignty level IV and the Pedestal Upgrade Platform to build it. It allows building one Advanced Outpost Upgrade (Tier 3), and an additional Intermediate Outpost Upgrade (Tier 2) and another Basic Outpost Upgrade (Tier 1).

The upgrade slots from various level upgrades stack, so if you have all levels of upgrades you will have six upgrade slots.

Upgrade Name	Sovereignty Index Need	Outpost Construction Skill Level	Slot Amount		
			Tier 1	Tier 2	Tier 3
Foundation Upgrade Platform	2	1	1	–	–
Pedestal Upgrade Platform	3	3	2	1	–
Monument Upgrade Platform	4	5	3	2	1

So, to sum up, the steps needed for Outpost upgrading are:

- Buy an Upgrade Platform
- Take it to the outpost and launch
- Pay attention to the size of the Upgrade as they can be 500,000 m^3 to 750,000 m^3. Since only freighters can be used to get the upgrade to the location, a freighter cannot take back the upgrade once it is launched into space
- Anchor and link it to the outpost
- Fill it with the required materials
- Choose 'build' to build the upgrade
- It will be ready after the next downtime

And the step(s) required for a fully upgraded Outpost (deep breath):

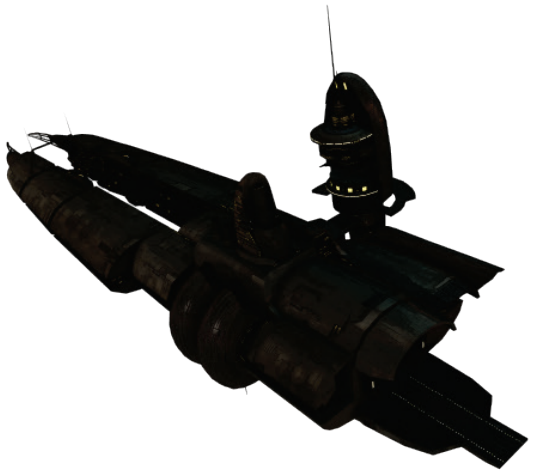
1. Gain Sovereignty Level I.
2. Build the outpost.
3. Wait for the next downtime.
4. Gain Sovereignty Level II.
5. Build the Foundation Upgrade Platform.
6. Wait for the next downtime.
7. Build the Basic Outpost Upgrade.
8. Wait for the next downtime.
9. Gain Sovereignty Level III.
10. Build the Pedestal Upgrade Platform.
11. Wait for the next downtime.
12. Build the Basic Outpost Upgrade.
13. Wait for the next downtime.
14. Build the Intermediate Outpost Upgrade.
15. Wait for the next downtime.
16. Gain Sovereignty Level IV.
17. Build the Monument Upgrade Platform.
18. Wait for the next downtime.
19. Build the Basic Outpost Upgrade.
20. Wait for the next downtime.
21. Build the Intermediate Outpost Upgrade.
22. Wait for the next downtime.
23. Build the Advanced Outpost Upgrade.
24. Wait for the next downtime.
25. Bonus: Ask our enemies to let us build..

You can choose to build the three upgrade platforms (Foundation, Pedestal and Monument) first and only add the individual upgrades later. But do not forget that while these modules are anchored or being built, they are vulnerable and can be attacked.

It is important to note that the various levels of upgrades of the same station service do not stack.

You only get the benefits of the highest level upgrade.

For example, the Refinery of a Minmatar Outpost. With the highest level of upgrade you may reach 60% refinery efficiency, but not more.



Outpost Upgrades

Each and every outpost type has five of the seven upgrade paths available in the game. The possibilities seem to be limited, but you still have plenty of options with the six upgrade slots on a fully upgraded outpost.

To build a Tier 3 upgrade you need the corresponding Tier 2 upgrade, which in turn requires the corresponding Tier 1 upgrade. This means an Advanced Platform Upgrade would instantly use up three points.

The available variations are as follows:

- One Tier 1 upgrade, one Tier 2 upgrade, and one Tier 3 upgrade is built with the prerequisite upgrades.
- Two Tier 1, and two Tier 2 upgrades are built (with the prerequisite upgrades also built).
- Four Tier 1 and one Tier 2 upgrades (with the prerequisite Tier 1).
- Five Tier 1 (but in this case there is an open slot for a Tier 2 upgrade).

The above options are only true if your outpost has all three Outpost Upgrade Platforms. You can choose to build fewer upgrades if the required upgrades are available.

The prices of upgrades:

- Tier 1: 1 Billion ISK.
- Tier 2: 4 Billion ISK.
- Tier 3: 16 Billion ISK.

The Improvements tab shows the available upgrades. If you check the development tree you can see which upgrades are available and what effects they would have.

You can also check this list of possible upgrades even if you do not have the upgrade platform built, but in this case you will be unable to install the upgrades.

Station Management

The greatest advantage of owning an outpost is simple: You're the boss. You can decide who can use the various services. In fact, you can even decide who can dock at your outpost and who cannot. If you click the Station Management button in the lower right corner, and you have the proper permissions (i.e. you are a CEO, a Director, or have the Station Manager Role and your corporation owns the station) you can configure the various settings.

Station Details

Here you can set up some of the basic settings of your outpost:

- **Name:** This name will be visible on the Overview and on the map.
- **Description**: This will be displayed in the 'Show Info' window of your station.
- **Docking cost per volume**: You can set up a cost for docking in ISK/m^3 (a bigger ship pays a higher fee).
- **Office Rental Cost:** The monthly rental fee for an office.
- **Reprocessing Stations Take**: If you have a refining facility at the outpost, you can set what percentage of the reprocessed materials will be taken as a fee for using the facility.
- **Reprocessing Output**: If you setup a tax on refining, you will need to specify which hangar division will be used as the destination for these reprocessed materials.
- **Reinforced Mode Exit Time**: You can specify the 'Reinforced Mode Exit Time' here.
- **Transfer Ownership***:* You can give the outpost to another corp.

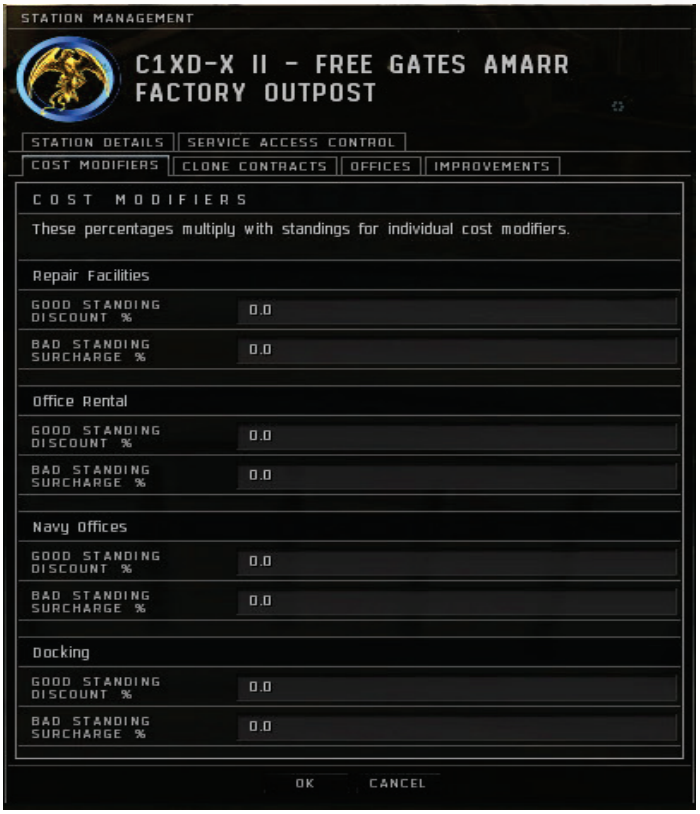
Service Access Control

With these five settings (you can set them up separately for individual services) you can control who can enjoy the benefits of the outpost. Some names are misleading since they refer to standing and not security status:

- **Min Standing**: this is the minimum derived standing required to use the service.
- **Min Character Security**: this is the minimum corp-to-character (from the corp owning the station) standing required to use it.
- **Max Character Security**: this is the maximum corp-to-character standing allowed to use it.
- **Min Corporation Security**: this is the minimum corp-to-corp standing required to use it.
- **Max Corporation Security**: this is the maximum corp-to-corp standing allowed to use it.

Cost Modifiers

This allows us to give discounts on cost of various services based on standings.



For example, you can add discounts to docking fees, reprocessing taxes, etc. based on standing.

It is often used to give discounts to corps who are close allies, but it can also be given to certain individuals as well.

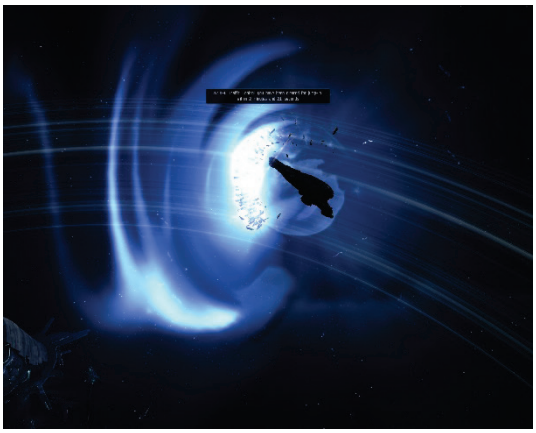
Do not forget this value is a calculated percentage. For example, if the base tax is 25%, and you set up 1.8% here, and someone has a 10.0 standing towards you, the discount will be 4.5%.

Clone Contracts

On this tab, you can see who has a normal clone at your station, but it does not list jump clones. You can terminate such clone contracts for users and corporations. This is a necessary action when you conquer an outpost and want to make sure the previous owners will not have clones at the outpost. The clone is not lost in this case, but moved to a high-sec school station according to the characters' bloodline. Do not forget, you cannot remove jump clones this way!

Offices

This tab is useful for viewing and setting up who can rent an office at the outpost. It will also display who has rented an office there already: Who rents the slot, when the rental term expires, and what the rental fee is.



The setting 'Publicly Available' can determine if others can rent that slot, and can be used to reserve a few office slots. If someone rents a slot and you unset this setting their rent will not be renewed after the end of the current term.

Conquering Outposts And Stations

Each and every outpost and conquerable station has its own set of special defences. When the alliance that owns the outpost has sovereignty in the system these stations cannot be attacked in that no damage will be dealt to them.

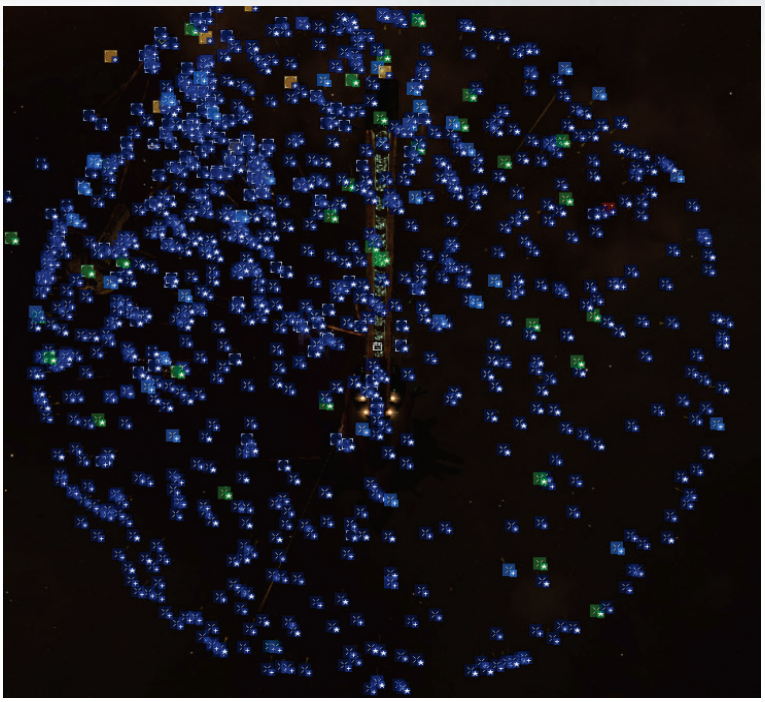
This defence can be negated if the attackers negate sovereignty. They usually use SBUs for this.

Since these stations are very important tactically and they have significant value they have another line of defence: Dual Reinforcement. This only applies if the owner of the station has sovereignty; if they do not, then stations can be attacked without the use of SBU.

Dual Reinforcement of outposts and conquerable stations work in the following way:

- When the shield of the outpost or conquerable station reaches 25%, it enters Reinforced mode. In this mode it cannot be attacked and cannot be repaired. At the end of reinforcement mode, the shield drops to 0% and the station will become vulnerable and repairable again.
- When the armor of the outpost or conquerable station reaches 50% armor, it enters reinforced mode for the second time, and at the end of this mode it will have 25% armor.
- When the outpost or conquerable station reaches 0% structure it will become the property of the last attacker (the corporate entity who laid the final blow).

A player with the Station Management role in the corp can decide when the reinforcement mode will end in EVE time. The mode will end in the selected time + 48 hours give or take a two-hour timeframe.



While the station is in reinforced mode it is invulnerable. If the selected time is 18:00 EVE Time (ET), and Reinforcement mode starts at 19:00 ET, then it is 23 hours base time. It is modified by 48 hours and +/- two hours. So the reinforcement time will last 23+48+/-2 = 69-73 hours.

After this time the outpost/station will be vulnerable again. If the reinforced mode exit time is not specified, the default exit time of 12:00 ET will be used.

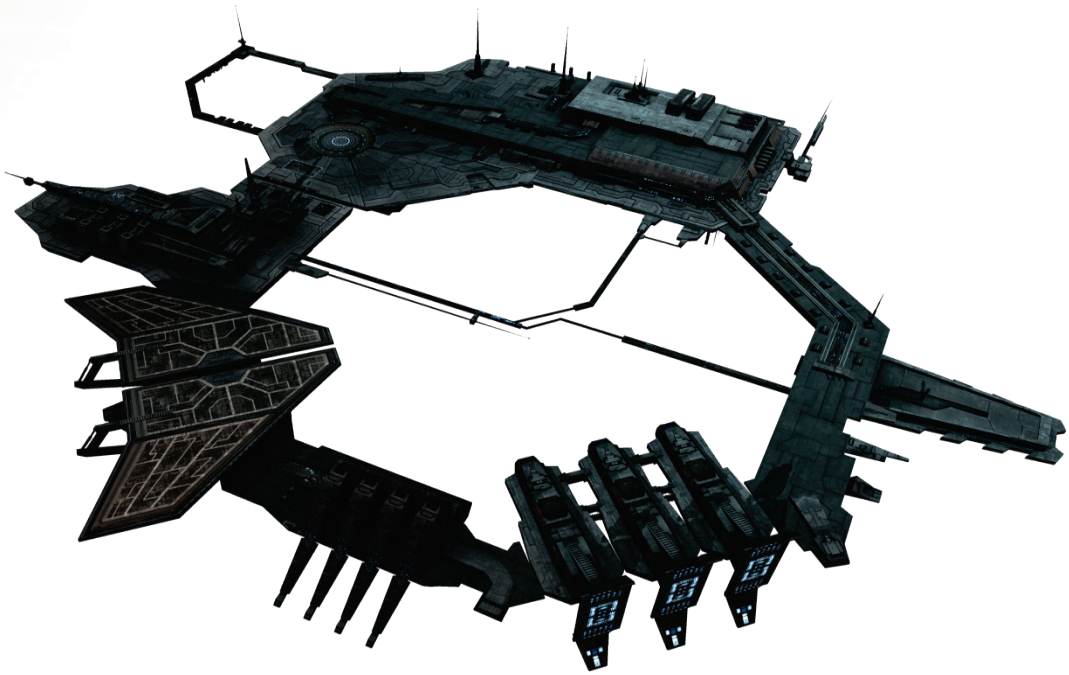
If a station is conquered, its structure and armor will be fully recharged.

If the station is invulnerable, it can still be targeted and attacked, but all damage against it will be zero, regardless of the kind of attack.

In this state, remote repair systems (and Remote Shield Booster systems) can be used to repair its structure, armor, and shields.

This state lasts as long as:

- The owner of the station has sovereignty.
- The system is not under an SBU siege, so the number of online SBUs in the system is less than 51% of the amount of gates.



Supercapitals

The biggest ships in the EVE universe belong to the supercapital ship class. There are two kinds: supercarriers and titans. In addition to the cost of building these ships, there will be additional challenges once you are in the ship. The biggest dilemma is where to stow the thing, since it cannot be docked. If you store them at a POS without adequate protection, your enemies could destroy them easily. So once you have boarded one, leaving it is not an easy option.

Because they represent a significant ISK investment, they are also tempting targets, so you need a lot of support to move and defend one. Most supercapital pilots wouldn't trade their ships for the universe despite these challenges. Below, we look at the first of the supercapitals, the supercarrier (or 'Mothership'). We'll cover the mighty titans in the next chapter.

SuperCarrier (Mothership)

Supercarriers are the second biggest ship type in the EVE universe and the third biggest item you can build. They are huge ships capable of carrying and using fighter and fighter-bomber drones. They are pretty much like a normal carrier except for the fact that they are much bigger and much more expensive. Here are some other noteworthy differences you should be aware of:

- They have a bigger hangar and drone bay.
- They cannot be built in stations, and cannot dock.
- They are immune to nearly every form of electronic warfare (ECM, normal Warp Disruptor, Stasis Webifier, etc.).
- They are affected only by Interdictor Bubbles, Mobile Warp Disruptors and Focused Disruption Generators (from heavy interdictors).
- They have six high slots instead of the five a carrier has.
- They use 99% less CPU for Warfare Link modules, and each Carrier skill level allows using one additional Warfare Link module.
- They can be fitted with Projected Electronic Counter Measures (Remote ECM Burst).
- In addition to the normal number of drones, you can fly one more Fighters or Fighter Bombers per Carrier skill level.
- They have a +200% bonus to the Fighter or Fighter Bomber control range.
- They have a very impressive 100% bonus to Fighter, Fighter Bomber hitpoints and damage bonus
- Please note that: Supercarrier drone bays can only hold fighters and fighter bombers.

Uses

Basically, besides carrying things, these ships are designed for fleet support roles. The EW immunity and the increased range for capital-sized remote repair modules make them ideal for this.

They can be useful when defending a sieged POS if no one bumps it out of the forcefield. The POS forcefield helps protect it from a titan's doomsday attack.

A supercarrier can then repair the defending fleet or the POS's defences as needed. Of course, they can also remote repair each other which makes these ships durable since they can repair significant amounts of hitpoints per seconds. But do not forget that even a supercarrier is vulnerable and can be destroyed.

Fighter Bombers

This kind of drone is a fighter boosted with more hitpoints and much stronger weapons. They may only be commanded by the pilot of a supercarrier.

While they can be set to assist others, they cannot be delegated like fighters. With their increased amount of HP and their compact citadel torpedoes they are lethal. As with everything, using them comes with a price.

Training the required skills (Fighters level V) takes a long time, not to mention that you need a supercarrier and all the skills to fly it in order to use the drones.

Races

Every race has its own supercarrier, with a race-specific specialty and additional bonuses that makes them ideal for some roles.

Aeon:

- 4% bonus to all Armor resistances per level
- 50% bonus to Capital Energy and Armor transfer range per level

Wyvern:

- 4% bonus to all Shield resistances per level
- 50% bonus to Capital Energy and Remote Shield Booster range per level

Nyx:

- 5% bonus to deployed Fighters or Fighter Bomber damage per level
- 50% bonus to Capital Shield and Armor transfer range per level

Hel:

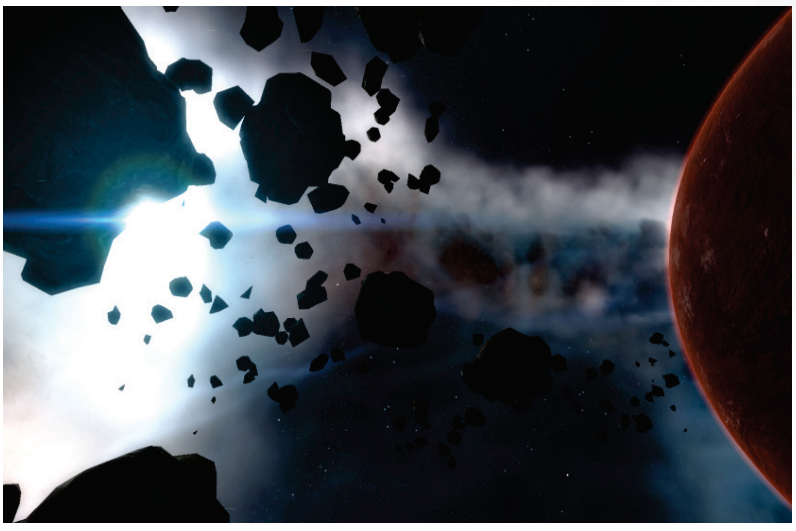
- 7.5% bonus to Shield and Armor transfer amount per level
- 50% bonus to Capital Shield and Armor transfer range per level

Clash Of The Titans

In the Amarr language, their name is Imud Hubrau, or 'Beast of Heaven'. To the Gallente, they are known as Soltueurs, or 'Sun Slayers'. The collective name for these behemoths is titans, the largest space faring vessels ever constructed. The sheer cost in resources, manpower and time, as well as the necessary technological knowledge, makes construction of a titan-class vessel a venture only great alliances can usually fathom.

They are of great value to a fleet. Not only does a titan make an impressive flagship, but it functions as a mobile base of operations as well. Titans can turn the tide of war with their mere presence. Aside from their blistering armament and many-meters-thick armor, they boast the ability to transport entire fleets within their hulks across the expanses of space.

One notable incident occurred on the small, agricultural world of Goral, where a Gallente titan moving into orbit caused an abrupt shift in tides, which flooded crop fields and farmland. The decrease in food production meant that the entire system, which depended on Goral for food stock, had to be supplied by merchants or face starvation. Since then, titan navigation systems have been programmed with fail-safes to prevent them from approaching a planet so closely.



The construction of a titan has, in recent years, become an option available to more than just the richest of alliances. With the advent of exploration, new resource-rich worlds have been discovered.

For the construction of an Amarr corporation's newest fleet addition, a lush, tropical moon was decided upon as a prime source for resource extraction.

After decades of aggressive strip-mining, the moon's surface had been mostly torn away. At the cost of tens of thousands of Minmatar slave lives, the titan was complete, leaving the moon a devastated, tectonically unstable hell.

Titan Roles

Titans are the biggest and meanest ships in the EVE universe, and they fill fleet roles:

- **Logistical Roles**
  - **Jump Portal Generator:** The jump portal generators capable of transporting large fleets to distant solar systems within their range.
  - **Fleet Hangar:** The on-board corp hangars can be used as a mobile warehouse.
  - **Clone Vat Bay:** The clone vat bay makes creating jump clones possible, if this module is installed and online on the ship.
- **Combat Roles**
  - **Doomsday Device:** The so-called 'Doomsday Device' is an ultimate weapons of mass destruction (or 'super weapon') that can do significant damage. Anything with less than two million HPs (damage can be increased by skills and reduced by shield/armor/hull damage resistances) is destroyed instantly by a doomsday device attack. Titan super weapons can now only fire at other capital ships. It can no longer fire its superweapon at any structures.
  - **Raw Firepower:** The race-specific titan skill level significantly increases the damage of the heavy weaponry fitted to the ship. (Titans can lock a maximum of three targets.)
  - **Fleet bonus:** Titans provide significant bonuses to their fleet members just by their presence (ok, you also need to be a 'fleet booster' too). And they can use many gang modules at once.
- **PR Roles**
  - Only the strongest alliances can afford to build or buy a titan, and can then put it to use. It is a great ego and morale boost to know your corporation can field one or more of these monstrosities.

Titan Abilities

Each race has a titan class ship, every such monster has a totally unique characteristic and is able to provide unique bonuses to the fleet it is part of. They do have one feature in common: they are very useful for either combat or logistics on the field of battle. The following bonuses are the same in the case of all four races:

- Immune to almost every form of electronic warfare (ECM, normal Warp Disruptor, Stasis Webifier, etc.).
- It is affected only by Interdictor Bubbles, Mobile Warp Disruptors and Focused Disruption Generators from heavy interdictors.
- 99% less CPU use for Warfare Link Modules, and each titan skill level allows use of one additional Warfare Link module.
- Can fit and use a Jump Portal Generator.
- Can fit and use Clone Vat Bays (just like Rorquals)

Avatar

- 100% bonus to Capital Energy Turret damage per level
- 7.5% bonus to fleet members' capacitor recharge rate per level
- Can fit Judgement Super Weapon

Leviathan

- 125% bonus to Citadel Missile kinetic damage per level
- 7.5% bonus to fleet members' maximum shield HP per level
- Can fit Oblivion Super Weapon

Erebus

- 100% bonus to Capital Hybrid Turret damage per level
- 7.5% bonus to fleet members' maximum armor HP per level
- Can fit Aurora Ominae Super Weapon

Ragnarok

- 125% bonus to Capital Projectile Turret damage per level
- 7.5% reduction in fleet members' signature radius per level
- Can fit Gjallarhorn Super Weapon

HINTS AND IDEAS

CHAPTER 12

EVE

INDUSTRIAL
BLACK BOOK

ISK VOL I

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"Make war, not love!" - What should I do if we got a war declaration?

"Big Evil Company has declared war on Little Poor Newbies. Within 24 hours fighting can legally occur between those involved. "

This is the dreadful mail that many of the peaceful (?) High–Sec-resident miners, agent runners or trader players fear of. You should be proud since you got somebody's attention, and you are not "one of the many" any more. They do not want anything bad; they just want to see you and your corporation members in newbie-ships.

The quote from CONCORD above means that after 24 hours you received this notification the involved parties can legally fight anywhere in the universe of Eve-Online. They can shoot each other. There is no safety; everyone can be a target, no matter where he is: in High-Sec, mining in a Hulk or travelling in a shuttle.

So many corporations were torn apart by this "fantastic feature". When they noticed the war declaration, jumped into ships, lost many battles they gave up their previous life. In the eyes of many people, war seems evil and condemnable, but unfortunately (?) it is part of the game, your only choice is to survive. If you receive a war declaration while your plan was making money over the weekend, then you should grab the two largest guns you can use, information and the military force (your corp mates, mercenaries, neighbours and friends).

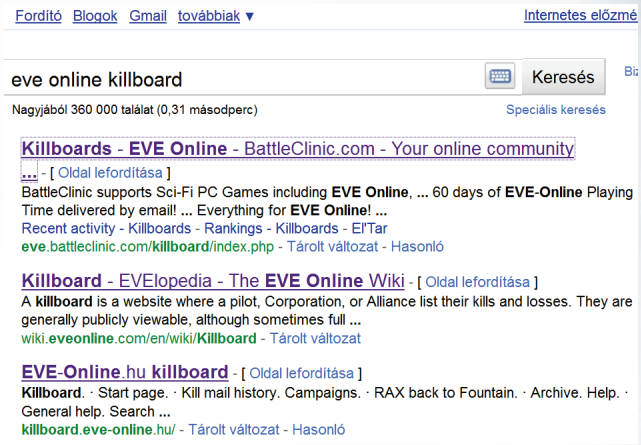
The necessary information

Always check who you have war against; to answer this question click on the Corp icon at the side and select "Wars" tab. If there is no active war just then, this image appears. If you are declared war on, on one hand the actual dispute will be seen, on the other hand you receive a mail from Concord.

Before you do anything rush, the diplomat or the CEO should try to make contact with the CEO of the aggressor corporation. Try to find out the reason of the attack (avoid patronizing or cursing) Most likely you will not get an answer, or if any, that would be condescending and / or disappointing, but at least you have tried to solve the problem peacefully.

Important question: Where the aggressor is most active (which system/area)?

With the help of locator agents, corporation info and Google it is worth to check:



- How many members does the aggressor corporation have?
- Where is their main area of activity?
- How long has the corporation been existed?
- How "old" are the members? (EVE age)
- Based on the characters names use Google to find information about their killing statistics:
    - Ships flown by the corporation members
    - Effectiveness of the pilots and their fighting skills
    - Expected fitting setup tactics

The most troublesome is if the enemy is active in the same area where you / your corporation live, because in this case they either live there as well or go there "having fun". In both cases it is unavoidable to decide whether:

- You will fight the enemy
- You will leave the area and hope they will not follow you
- You will try to make an agreement with them and end the war

The easiest solution might be to make an agreement, but do not forget that if you are considered powerless, they might refuse agreement and / or the price of the peace will be high.

Leaving the area can be an option also, but it is hard to find a new place suitable for all expectations.

If you decide to fight against the aggressors, the first step should be (after Google) gathering Intel about the enemy. For this use a ship fitted by cloak or a ship that is easy to replace. Find their main activity system and observe when and where they are active (missions, mining etc.), what ships are used. This kind of information will be required either when you are fighting them alone or in fleet.

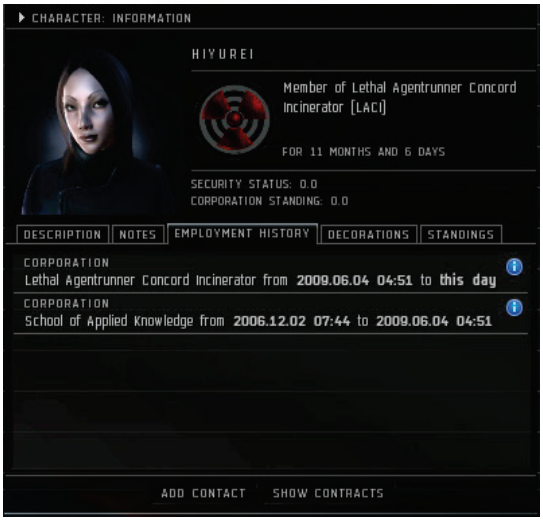
The best is to get 1-2 ships fitted for combat as soon as you receive the war declaration.

In all three cases it is important to know:

How old is the aggressor corporation?

The foundation date of the corporation is useful information. If it is fairly new, you might be lucky (except if "old" players created a new corporation). Under the corporation information you can see the member number. This is also important since you will know if only a few big mouthed pirates try to disturb your peaceful life, or if you will play the role of the "last starfighter" when hundreds of enemies are waiting to tear your ship apart.

How old is the CEO and the other members?



If there are fairly enough young characters (3 months old), there is a good chance that not many T2-T3 ships fitted by T2 weapons are used. However, if they have been playing for several years, then you can start worrying, that things might be turn unpleasant. To check how old a character is, do not look at the time he/she has spent with the current corporation, but the full employment history. You can do that by selecting the Employment History of the Character information window. As you can see on this picture if only the first line of information was considered, the character would be "only" 11 months. The truth is however, (if you check the full history) that the character is 3 and half years old.

Is the given corporation a member of an Alliance?

If the answer is yes, then it is really bad news… That can mean that the aggressor corporation has the financial and knowledge background to cause you a lot of trouble. It is really does matter if the enemy is a group of new players or an old gang of elite PVP pilots who not only has the assets but also the knowledge as well to pod you back into Stone Age.

Is there anyone who can help?

In some cases external help would be required to force the enemy leaving your area:

- If you know someone, whose corporation can help you, ask them to declare war on your enemy, by showing them what they can expect, if they will not leave you alone.
- Hire a mercenary corporation if it is possible, to do the dirty job.
- Employ experienced PVP pilots and let them handle the problem.
- Find other corporations in the area who had or have war declaration from the corporation that is fighting with you.

But I have a POS, what should I do?

It is common practice that certain companies give a try to declare war on you in the hope of rich loot. The following advices are well worth taking into consideration:

- ALWAYS have the strontium bay of your POS full, even if there is no war currently going on!
- Always have enough jammers, hardeners and/or guns what you can put online on the tower. It does not matter if it is a research POS.

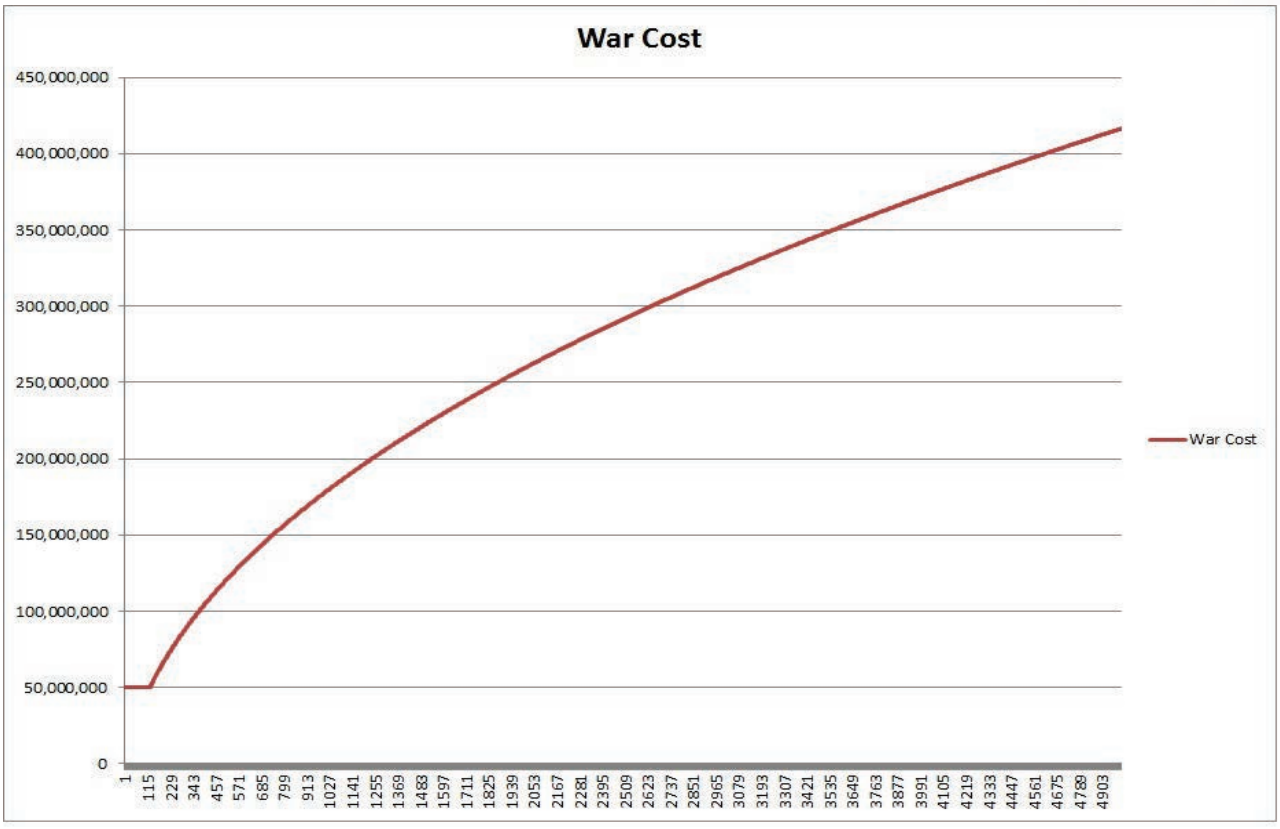
There are two possible ways, as you can see, to make them think twice before they attack your POS. Do not forget to install a fighting gear on the POS and if you do not put online them, they will not consume any resources.

Put it out to scare your enemies away rather than be surprised when they attack an unarmed POS. This way you can also switch the research modules off and the military on when it is necessary.

How much?

It costs 2 million ISK for a corporation to declare war on another corporation. It costs 50 million ISK for a corporation or alliance to declare war on an alliance. It costs 50 million ISK for an alliance to declare war on a corporation.

This base-cost can be increased by the number of wars you currently have ongoing (where you are the aggressor) and the number of wars the target corporation already has against them. As you can see in the formula below:



EVE-Math

Effective Attribute
Effective_Attribute = Base_Attribute +Implant
Base_Attribute: is the attribute level that you got during the character creation.

Effective Refining Yield
Effective_Refining_Yield = Min(Station_Equipment_Yield + (1 + (Refining_Skill_Level * 0.02)) * (1 + (Refining_Efficiency_Skill_Level * 0.04)) * (1 + (Ore_Specific_Processing_Skill_Level * 0.05))), 1.00)
Station_Equipment_Yield: Base Yield of the station

Effective Standing
Effective_Standing = Your_Standing + ((10 - Your_Standing) * (0.04 * (Connections_Skill_Level | Diplomacy_Skill_Level)))
Your_Standing: Your standing with the entity.
Connections_Skill_Level: is used when Your_Standing is larger than 0.0
Diplomacy_Skill_Level: is used when Your_Standing is less than 0.0

Blueprint Material Requirement
Required_Amount = Round(Base_Amount * ((1 + (Default_Blueprint_Waste_Factor / (1 + Blueprint_Material_Level))) + (0.25 - (0.05 * Production_Efficiency_Skill_Level))), 0)

Invention Chance
Invention_Chance = Base_Chance * (1 + (0.01 * Encryption_Skill_Level)) * (1 + ((Datacore_1_Skill_Level + Datacore_2_Skill_Level) * (0.1 / (5 - Meta_Level)))) * Decryptor_Modifier
Meta_Level: of the base items used. No base items is the same as metalevel 0 = useless.
Decryptor_Modifier: is optional :-)

Reverse Engineering Chance
Reverse_Chance = Base_Chance * (1 + (0.01 * Reverse_Engineering_Skill_Level)) * (1 + (0.1 * (Datacore_1_Skill_Level + Datacore_2_Skill_Level)))

Research Points Per Day
Reseaerch_Points_Per_Day = **((1 + (Agent_Effective_Quality / 100)) * ((Your_Skill + Agent_Skill) ^ 2))**
Your_Skill: is your skill level in the research field.
Agent_Skill: is the agent's skill level in the research field.

Skillpoints: Level & Rank
Skillpoints_At_Level = 250 * Skill_Rank * (32^((Skill_Level - 1) / 2))
Note that the there can be a ±1 skillpoint difference for some rank and level combinations, due to rounding issues.

Skillpoints Per Minute (SP / min)
Points_per_minute = Effective_primary_attribute + (Effective_secondary_attribute/2)

Station take when refining/reprocessing
Station_Take = Max((5 - (0.75 * Your_Standing)), 0)
For the station to take 0% you need a standing to the station owner of at least: 5 / 0.75 = 6.67
Please note: You must have this standing toward the station owner corporation not the Faction!

Effects of the faction and pirate sets

There are special implant sets called pirate or faction sets, which give two bonuses, the first being a +2 (Low Grade), +3 (Mid Grade) or +4 (High Grade) boost to an attribute and the second one is a special bonus that differ from set to set.

Primary Bonus

Implant suffix	Implant Prefix		
	Low-Grade	Mid-Grade	High-Grade
Alpha	+2 bonus to Perception	+3 bonus to Perception	+4 bonus to Perception
Beta	+2 bonus to Memory	+3 bonus to Memory	+4 bonus to Memory
Delta	+2 bonus to Willpower	+3 bonus to Willpower	+4 bonus to Willpower
Gamma	+2 bonus to Intelligence	+3 bonus to Intelligence	+4 bonus to Intelligence
Epsilon	+2 bonus to Charisma	+3 bonus to Charisma	+4 bonus to Charisma
Omega	10% bonus to the strength of all secondary effects.	25% bonus to the strength of all secondary effects.	50% bonus to the strength of all secondary effects.

The secondary effects are boosted with each implant in the set, and the sole purpose of the Omega piece is to further increase this effect.

If you happen to have all, the set bonus would be (for an example) = 1.15 x 1.15 x 1.15 x 1.15 x 1.15 x 1.5 = 3.01703578125 (the last 1.5 is the Omega implant effect).

Secondary Bonus (Full Set With Omega)

Set Name	Set Bonus			Set Value			Omega Value		
	Low-Grade	Mid-Grade	High-Grade	Low-Grade	Mid-Grade	High-Grade	Low-Grade	Mid-Grade	High-Grade
Ascendancy		36,87%	62,17%		1,100	1,150		1,350	1,700
	bonus to warp speed								
Centurion	20,03%	33,83%		1,025	1,100		1,100	1,250	
	bonus to optimal range of ECM, Remote Sensor Dampers, Tracking Disruptors and Target Painters								
Crystal	20,03%	33,83%	53,63%	1,025	1,100	1,150	1,100	1,250	1,500
	bonus to shield boost amount								
Edge	-17,39%	-26,93%		1,025	1,100		1,100	1,250	
	reduction to booster side effects								
Grail	29,17%		75,63%	1,000		1,150	1,400		2,000
	to ship's radar sensor strength								
Halo	-9,00%	-14,23%	-20,70%	1,025	1,100	1,150	1,100	1,250	1,500
	reduction in ship's signature radius								
Harvest	20,03%	33,83%		1,025	1,100		1,100	1,250	
	bonus to the range to all mining lasers								
Jackal	29,17%		75,63%	1,000		1,150	1,400		2,000
	to ship's ladar sensor strength								
Nomad	-17,39%	-26,93%		1,025	1,100		1,100	1,250	
	bonus to ship’s agility								
Slave	20,03%	33,83%	53,63%	1,025	1,100	1,150	1,100	1,250	1,500
	bonus to armor HP								
Snake	10,46%	16,02%	24,74%	1,050	1,100	1,150	2,100	2,500	3,000
	bonus to maximum velocity								
Spur	29,17%		75,63%	1,000		1,150	1,400		2,000
	to ship's magnetometric sensor strength								
Talisman	-17,39%	-26,93%	-38,11%	1,025	1,100	1,150	1,100	1,250	1,500
	reduction in the duration of modules requiring the Capacitor Emission Systems skill								
Talon	29,17%		75,63%	1,000		1,150	1,400		2,000
	to ship's gravimetric sensor strength								
Virtue	20,03%	33,83%		1,025	1,100		1,100	1,250	
	bonus to scan strength of probes								

What can you do if your account has been hacked?

Unfortunately, these actions are becoming more frequent. The reasons can be many: weak passwords, hacked or virus-infected computers, stolen email passwords, etc. When this occurs, generally the first thing that will happen is for all of the player's item to be sold (including any from his corporation). After that, often even the character will be then sold as well. The perpetrator's purpose is to get more ISK, as much as he can, so that he can then sell the ISK for real money. The damage these people do is significant, and usually cannot be repaired 100%.

Common Mistakes

There are several ways to get to your account details in order to enter your account. The most frequent mistakes players make are:

- The details will be given by YOU to your friends. That's why Account Sharing is forbidden. Usually, the perpetrator is not the person who got this data from you but another one, who has already stolen details from two computers (and unfortunately, even a 'friend' can be the perpetrator himself).
- If you visit a forum with your EVE username and password.
- An illegal ISK trader can use your details, but how? First of all, he will know your email address and when you're playing EVE. Then, you'll get a message with the following possible subjects: You have been given five days game time as a gift; Your account has expired; Your details have to be more accurate. If you answer any of these, you've helped the hacker's job.
- Always check the sender and the link inside. Has it really sent by CCP? CCP is uses its own website to let you enter your account. If you found a different link in the email, be careful! (You may write a Support ticket to be sure!)
- Standing increasing service: if you give your account/password details to strangers, don't be surprised if they use it.
- You have installed a hack/script/bot program (by the way, these programs are illegal). Sometimes, these programs are doing completely different things. Instead of activating the cheat (remember, illegal!), they'll steal your assets, contracting them to someone for nothing. And while you think the program is working, actually it's stealing.

Damage Control

How can you decrease the possibilities of the damage?

- Share your corporation wallet among three or four people. Keep the BPOs locked, so they can't be stolen. Moving a locked BPO without voting is impossible.
- Everybody has limited roles and rights, and no more than necessary.
- Password protected systems have to be changed time to time, use more characters, CAPITALS, numbers, and special keys such as "+)(=%. Never use simple words!
- Everybody is trying to be comfortable, using the same passwords for mailboxes, forums, games, etc. Try to use different passwords for each type of activity, otherwise when one is stolen all are lost.

Next Steps

What can I do, if this accident happened?

- Write a 'STUCK' petition immediately, and ask that your character be banned until the investigation ends. Usually the hacker is going to change the password, so you won't be able to log in.
- Make notes (everything you know about this case), otherwise a daily one answer will increase the delay between the questions and answers. Do not think some information is useless: anything can be useful in the investigation.
- Inform your CEO and your corp mates immediately, ask them to take your rights away! CCP needs lots of time to ban your account and it has to handle other users' problems too. Be patient!
- Change the passwords, use another computer in order to do this if it's possible.
- In case of emergency, reinstall your operation system (finding the infection takes more time than the reinstall).
- Keep the first email address (the one you used when you first created your account). Only this email address will be acceptable.
- If you make a new account and you type a random date of birth, memorize it! You might need it.
- If you have a new bank card, make a note of the last six digits of the old card. Although CCP can get information about your account, it takes time. If you know these details already, that's a great advantage.

Summing Up

To summarise, here's what you may need to do to get back your account, as well as some useful hints by CCP itself:

- Do not accept unknown links from unknown persons, even if you use the in-game browser.
- Do not download bots, macros, or any other (illegal) stuff.
- Do not download Evemon or the EFT from unknown locations.
- The best protection against key-loggers: store the passwords in a file, named something else (i.e. do not use 'password.txt or password.doc').
- Copy and paste the password, do not type it.
- Keep your anti-virus program up to date.
- Use safe browsers, or a browser with safe support!
- Never give out your account name and/or password or your email address (that you've used to create the account).

Useful Links

We've collected a number of useful links which can make your life significantly easier in EVE.

Battleclinic – EVE Online

Publisher-sanctioned tools and guides provided free to players. Battleclinic encourages an active community friendly to all.

http://eve.battleclinic.com/

Dotlan Evemaps

Maps with the most important info for fleet planning. Daily sov and outpost info, plus occupancy info for Factional Warfare.

http://evemaps.dotlan.net/

JMU Homepage

The website for the corporation and pilots who created this book, with loads of information. (Hungarian)

http://jmu.hu/

EVE-Online.hu

This is the greatest EVE-Online community site of the mighty and dreaded Hungarians. You might guess that Hungarians are involved with the making of this book!

Home of the "Mustache Killer AT-X Team"!

http://www.eve-online.hu/

2D EVE Maps By Ombey

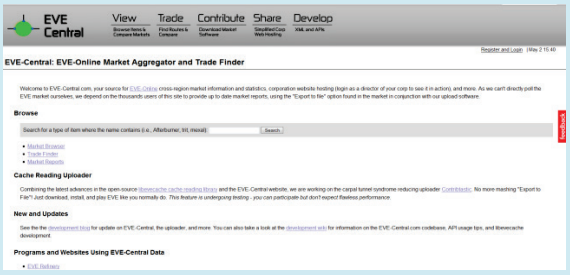
A useful map, which contains the systems of EVE and a lot of info about each system's security status, number of asteroid belts, etc.

http://www.ombeve.co.uk/

Eve-Central

The best price-checking website we're aware of so far. Use it with caution, since there can be differences between the live game and the listed price. Always check the date of the last update to the site.

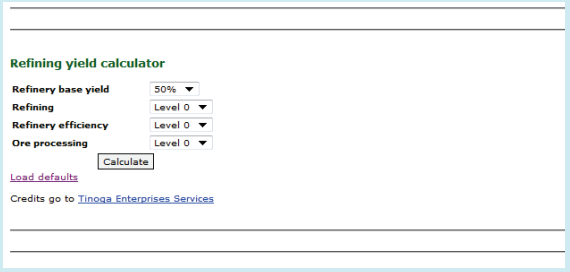
http://eve-central.com/



Refining Yield calculator

To check how well you can refine when the in-game refining tool is not readily available.

http://eve.podzone.net/refining.php



EVEmon

A very good character-monitoring and skill planning tool. It is important to know how long it will take to complete a skill, or what the prerequisites are. EVEmon gives you access to this information when not in game.

http://evemon.battleclinic.com/

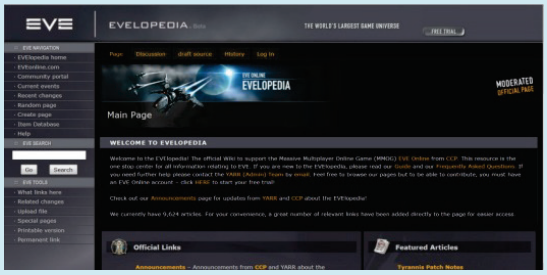
EVE Political Map

A relatively accurate political map. It is good to know who is going to kill you in a certain region.

http://go-dl1.eve-files.com/media/corp/Verite/influence.png

EVElopedia (EVE-Wiki)

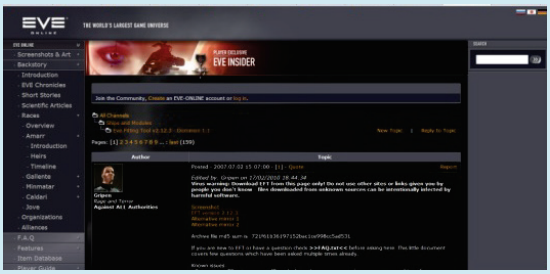
The Wiki site by CCP. Very useful, especially for new players. All players can add or update information on Eve here.



http://wiki.eveonline.com/en/wiki/Main_Page

EVE Fitting Tool

The best ship fitting and testing tool, it provides detailed information on fitting your ship.



https://forums.eveonline.com/default.aspx?g=posts&m=226033#post226033

EVE-HQ

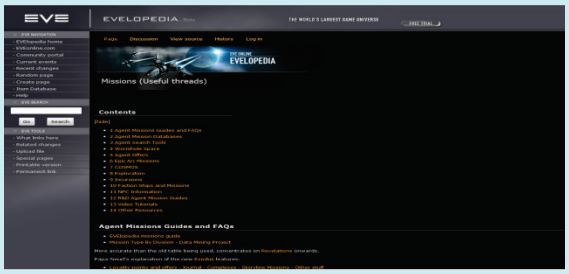
A really well-organized guide which includes lots of useful tools.

http://eveit.net/

EVEonline.com Useful links for agent mission running

Useful links for agent missions. A good place for mission runners to that also includes a lot of great information on COSMOS missions.

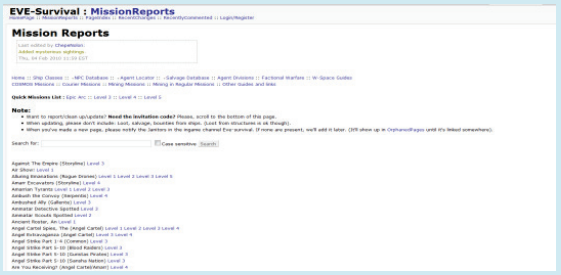
http://wiki.eveonline.com/en/wiki/Missions_%28Useful_threads%29



EVE-Survival.Org

The haven of Mission runners, it provides detailed descriptions about missions including Epic Arc missions. Definitely visit this site!

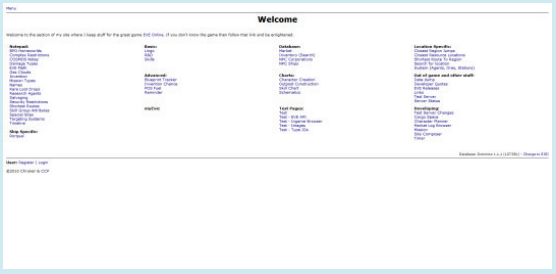
http://eve-survival.org/wikka.php?wakka=MissionReports



Chruker's Eve-Online

A very good site with tons on information, including a success calculator for inventions, and some non-public information about items, like the Hit Points of POS Control Towers.

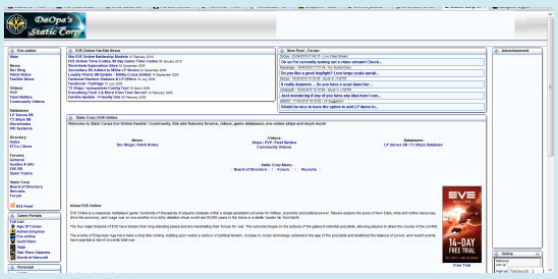
http://games.chruker.dk/eve_online/



DaOpa's Eve-Online

A superb site with information on what Loyalty Point (LP) stores offer, a wormhole (WH) database, a WH system list, etc.

http://www.ellatha.com/eve/



EVE-Specific Glossary

Based on the „Encyclopedia Galactica Wiki"

Abbrevation	Original Expression	Meaning
'phoon	Typhoon	Minmatar battleship
AB	AfterBurner	An afterburner increases the velocity of your ship
AF	Assault Frigate	Second generation of the frigate class
AFK	Away From Keyboard	Used to designate when you are not at the computer. If you need to go to the bathroom or you want to butter some bread, then just say AFK
AFAIK	As Far I Know	Acronym, useful in chat
AP	Autopilot	We can travel without human interaction. Keep in mind that it will not use any modules and warping to 15km from the gates.
Apoc	Apocalypse	Amarr battleship
Ark	Arkonor	This valuable ore can only be found in 0.0 (do not confuse it with the Ark which is an Amarr jump freighter)
BB	Blackbird or Bye-Bye	Caldari cruiser, or the way to say goodbye in chat
BCS	Ballistic Controll System	It increases the damage of missile based weapons (torpedoes included)
BD **BSD**	Blue Death Blue Screen of Death	The well-known fatal exception of Windows
Bist	Bistot	Valuable Ore
BM	Bookmark	A spot in space. The coordinates are saved on the Places tab of your People & Places NeoCom tool
BP	Blueprint	A blueprint is a requirement for manufacturing
BPC	Blueprint Copy	Copy of the original blueprint with limited production runs
BPO	Blueprint Original	The original blueprint that can be copied and it has infinite production runs

BS	Battleship	One of the largest ship classes in the empire space
BRB	Be Right Back	For use in chat when you will be AFK for a very short time
BYOB	Bring Your Own Blueprint	Bring your own blueprint for production of the item, the minerals and components are already there
BYOM	Bring Your Own Minerals	Bring your own minerals for production of an item, the blueprint is already there
Bubi	Bubble	Mobile warp disruption generator or an interdiction bubble
Kerber **CB**	Carebear	Most of the time it refers to someone who does not engage in any PvP, mission running or, or fighting of any type. A pilot who is not PvP-oriented
CAP	Capacitor Capital	The energy reserves of the ship or POS, or alternately, any ship that is bigger than a BS
CCP	Crowd Control Productions	The name of the company that created EVE Online
CCD **Con**	CONCORD	The high-sec NPC police of EVE
Conquerable Station	Conquerable Station	Designates that a station in space can be taken over
Corp	Corporation	A player-run (or NPC) 'business' (similar to 'clans' or 'guilds' in other MMOs)
Cosmos	Cosmos	A special constellation containing agents and complexes which give special rewards or resources. Each race has their own COSMOS constellations
CPU	Central Processing Unit	The core of all computer systems in a ship or POS. Every module requires an amount of CPU to fit and activate it on a ship or POS
CSM	Council for Stellar Management	A player-run council that provides recommendations to CCP. The purpose of the CSM is to represent society interests to CCP
CTD	Crash To Desktop	Crashed to desktop/game crashed
Cyno	Cyno	A special jump in point for ships with jump drives. Can be opened in low-sec or 0.0 spaces only
Dev	Developer	A developer of the game. You do not meet them too often, but you can read their blogs

DD **DDD**	Doomsday Doomsday Device	The main weapon system of a titan-class ship. It can kill almost anything in a blink of an eye
Dom **Domi**	Dominix	Gallente battleship that has a large drone capacity (Mr Potato)
Dictor	Interdictor	Tech II version of the destroyer class. Capable of dropping Interdiction bubbles
DPS	Damage Per Second	How much damage a ship can do to its target every second
DT	DownTime	Anytime that EVE is unavailable. Typically, it means that the game server is down for maintenance and is unreachable. Can be for daily maintenance or for major updates or patching
ECCM	Electronic Counter Counter Measures	A module designed to counter ECM jamming
ECM	Electronic Counter Measures	Defensive modules (?) used for preventing enemy attack, such as keeping the enemy from targeting anything
Eff	Efficiency	Efficiency of a module or process
Emp	Empire	Usually a High-Sec area of space belonging to one of the four major races or empires
EW	Electronic Warfare	Everything pertaining to electronic warfare (ECM, Dampeners, ECCM, etc.)
Faction	Faction	Mostly outlaw corporations from each empire which stand against all authorities. (Blood Raiders, Sisters Of Eve, etc.)
FB	Fighter Bomber	The next generation of fighters mainly used against capital ships
FF	ForceField	The shield that surrounds a POS
Fit	Fitt	The full rack of modules fit on a ship
Fitting **Fittelés**	Fitting	The process of fitting your ships with modules, weapons and rigs
Freighter	Freighter	Hauling ships with the biggest cargo capacity available
Frig	Frigatte	Small-sized ship, cheap, fast, and expendable

Gang	Gang	Several players in one fleet
Gank	Gank	Refers to the situation where an enemy or enemy fleet blows up your ship
Glasscannon	Glasscannon	The new Tier 3 BCs: huge dps, with next to none tanking ability
GM	Game Master	Supervisor of a game, usually invisible to everyone
Grid	Grid	Section of known space where all parties and objects are visible to each other. Usually less than 1000 km across
Hac	Heavy Assault Cruiser	The Tech II version of the cruiser class with more damage potential, better tanking capability and velocity
Hed	Hedbergite	Mediocre ore
HeavyDictor	Heavy Interdictor	The combination of the HAC class and the interdictor class, can be a deadly trap for anyone
Hem Hemo	Hemorphite	Mediocre ore found mostly in low-sec
HG	High Grade	The prefix of pirate implants which have +3 attributes
HS	Heat Sink, High Sec	A module that increases the damage output of energy based weapons
High Sec	High Security Space	Anywhere in the EVE universe where a system's security status is between 1.0 and 0.5. It is always under sovereignty of one of the factions. CONCORD supervises these systems
HotDrop	Hotdrop	The act of opening up a cyno to allow one or more ships to jump into a system, usually directly into a combat
IC	In Character or I See	A player is playing a role (role-playing) or "I understand"
IGB	InGame Browser	The built-in web browser in the EVE Online game client
iHUB HUB	Infrastructure Hub	Access to a Nullsec system can be upgraded with this structure
Indy	Industrial Ship	Cheap hauling or transport ship. Mostly Harmless (Hint: Youtube: Badger vs Vagabond, Iteron vs Megathron

Inty	Interceptor	Interceptor is a Tech II variant of the frigate class, usually very fast
Ingame	Ingame	Everything that is happening inside the game
Insta	Instant Bookmark	A bookmark that allows you to warp immediately to a spot after undocking
ISK	Interstellar Kredits Industrial-Sized Knowledgebase	The currency used in the game (and Iceland) or the title of this book
Jam	Jam	When a ships sensors are jammed, which means it cannot lock any target and will lose lock on any targets it previously had
JetCan	Jettisoned Can	You can throw out anything from your ship's cargo to space in a container. Anyone can steal form these containers and they will disappear after two hours on their own
Jumpdrive	Jumpdrive	Special drives on certain ships that enable them to jump to a friendly cynosural field, even from several systems away
KB.	KillBoard	Webpages containing killed and lost ships statistics for corporations, alliances, or individual pilots
Kern	Kernite	Valuable ore
Lag	Lag	The unfortunate situation when things happen on a delayed basis, mainly due to internet/server issues
LG	Low Grade	The prefix of pirate implants which have +2 attributes
LS **LowSec**	Low Security Space	Every system in-game that has a security status between 0.4 and 0.1 and typically belongs to one of the four main factions
M1, M2	Miner1, Miner2	Usually the marking of mining lasers
ME	Mineral Efficiency	One of the attributes of a blueprint. The higher the value, the fewer raw materials are required. Above a certain limit, the number of materials required will no longer improve, which is called 'perfect ME'
Mega	Megathron Megacyte	Gallente battleship or a valuable ore
Mex	Mexallon	A common mineral which is fairly low priced
Mommie **Mammie** **Mami** **SuperCarrier**	Mothership (SuperCarrier)	Capital ship of high capacity, currently mainly suitable for transporting and controlling fighters and fighter bombers. The name is obsolete. The ship is now known as a supercarrier

MWD	Micro Warp Drive	A module that significantly increases the velocity of a ship, its disadvantage is heavy CAP usage
Nerf	Nerf	When something is considered too strong and causes an imbalance in the game, it will be altered by CCP (usually reducing certain attributes or bonuses). Players benefiting from this strength typically do not like this
Noobship	Noobship	Every race has a starter ship which is provided to you free. You also receive one whenever you dock at a station in a pod if there are no other ships in your ship hangar there, the official name is: Rookie Ship
Nocx **Nox**	Nocxium	Common mineral, fairly cheap
NPC	Non-Player Character	Non-Player Character coded to act/react in a particular manner
OD **ODI**	Overdrive Injector	Passive module that increases the velocity of a ship
OMG	Oh My God	Used in chat to say, “Oh My God!”
OMW	On My Way	Used in chat to say, “On my way!”
OOC **OUT**	Out Of Character	When a role-player is saying his real thoughts and not his character’s opinion
Outpost	Outpost	A station built by players out in Nullsec. An important attribute is that it can be conquered!
P&P	People & Places	Part of the NeoCom where you can search and keep track of pilots, systems, and bookmarks
PDU **PDS**	Power Diagnostic System	A passive module which gives a slight boost to power core output and a minor increase in shield and capacitor recharge rate
Pipe	Pipe	A chain of systems which create a route between point A and point B where there are no alternate routes
Plag	Plagioclase	Common ore, fairly cheap
Plex	Complex	A place where NPCs congregate. Much like mission deadspaces, but can be seen on the overview and is always there in a fixed spot.
PoS **POS**	Pod On Sight Player Owned Structure	Pod On Sight (rarely used) or a starbase owned and controlled by players that is anchored to a moon
Pod **Pod-kill**	Pod, Podding	The escape pod of a ship that you always are in; can warp instantly but cannot be fitted and is highly vulnerable. If it is destroyed, you will lose the implants (if any) in your head
Point **Pont**	Point	The strength of a Warp Scramble or Disruptor module. It can be used as a descriptor (this ship has two points) or as a verb (“point that ship!” – meaning, activate a warp scramble or disruption module on that ship)

Probe	Probe	A frigate-class ship, or the device used to scan space to locate exploration sites or even ships (providing they're not cloaked)
Prod	Production	Manufacturing a ship, module or other item for use by oneself or other pilots
Pri	Primary	The primary target
PE	Production Efficiency	One of the attributes of a blueprint. The higher this value, the more the production time of one unit is reduced. Works the same way as described with ME
PG	Power Grid	The amount of power available in a ship or POS used to fit and activate powered modules
Pye	Pyerite	Common mineral, fairly cheap
Pyro	Pyroxeres	Common Ore, fairly cheap
PVE	Player Versus Environment	A player fights against NPCs
PVP	Player Versus Player	Players fighting against each other
Rat	Rat	NPC character. Most commonly the pirates in asteroid belts
Rax	Thorax	Popular Gallente cruiser and the ancient weapon of the HUNs
RCU	Reactor Control Unit	A module that increases the power grid of the ship
RE **Ref Eff**	Refining Efficiency	How much yield one gets from breaking down raw ore into the minerals that comprise it
Ref	Refining	Turning raw ore into the minerals that comprise it
RoF	Rate of Fire	Time between two shoots
SBUs	Sovereignty Blockade Units	The structure required to gain ownership of a system
Scord	Scordite	Common Ore, relatively cheap
Scorp	Scorpion	Caldari battleship most often used for EW, that is often called as primary target in fleet actions
Scram	Scrambler	Prevents warp drive activation of the target ship
Sisi	Singuality	The test server for EVE available for the players as well
Slot	Slot	The hardpoints on the ships where you can install modules or weapons. On POSes/stations this is a place where you can manufacture, research, invent or perform some other science job.
SOON™	Soon™	Duke Nukem Forever; Check the related Wiki pages!

SOV	Sovereignty	Indicates who owns the given system
SPR	Shield Power Relay	Passive module affecting the ship's shield recharge rate
SPM	Spin Per Minute	Just walk into your hangar, grab the ship and…
Stab	Stabilizer	Short for a Warp Core Stabilizer (WCS). It gives you a point of immunity against warp disruption or warp scrambling
SC **SuperCarrier**	SuperCarrier	A capital ship with high cargo capacity for fighters and fighter bombers (formerly known as Mothership)
Tackler	Tackler	The pilot(s) in the fleet whose role is to intercept the enemy and apply points and webs to their targets
Tank	Tank	The defensive capabilities of a ship, or in a fleet, the ship which has the best tank
T1	Tech Level 1	The first generation of ships and modules
T2	Tech Level 2	The second generation of ships and modules
T3	Tech Level 3	The third generation of ship hulls and subsystems
TCU	Territorial Claim Unit	The structure that claims sovereignty for a corp or alliance over a system
Tier 1, 2, 3	Tier 1,2,3	The classification of ships and modules in a given class. The higher the number the better the attributes
TQ	Tranquility Server	The main server of the game
T-rax	Thorax	Popular Gallente cruiser and the ancient weapon of the HUNs
Trit	Tritanium	The most common mineral
Veld	Veldspar	The most common Ore
WCS	Warpcore Stabilizer	Nullifies one point of warp disruption or scram.
WDA	Warp Drive Active	Honey, I am warping! Eve-related comic and blog. http://www.warpdriveactive.com/
WH	Wormhole	Wormhole, see: exploration
Zyd	Zydrine	Valuable mineral

Editors

Editing, article writing, tables, layout, information „gathering”.

Favourite Ship:
Rorqual

Favoured Activity:
Carebearing

Eve “birth” date:
2004.12.03.

Motto: “Drones are like Childrens, small, annoying, destructive and never listens to you”

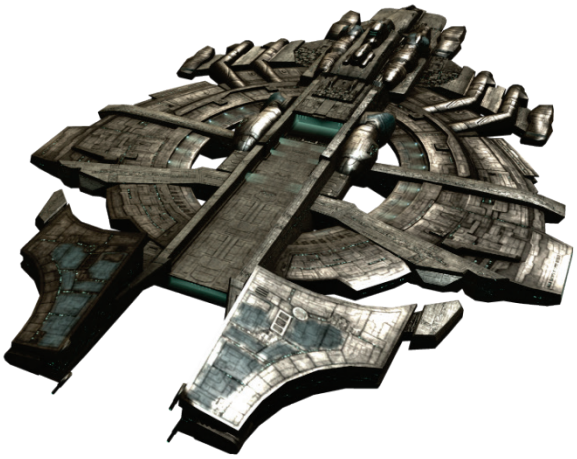
Designer, advisor, article writing, homepage.

Favourite Ship:
Nyx

Favoured Activity:
PVP

Eve “birth” date:
2006.12.19.

Motto:
Mermalior: How many Serpentis could be refined from 1 Snake Ice?
5n4keyes: About 20-30 for a batch



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	Halada	Editor of the original “The Complete Miner's Guide”.
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	Aikhiko Somotho	Article Writer (GUI, Advices for beginners) (**http://enerla.net/**).
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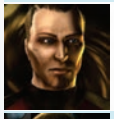
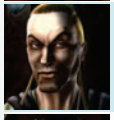
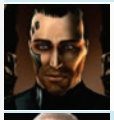
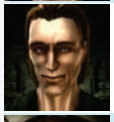
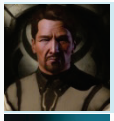
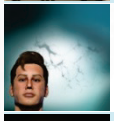
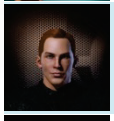
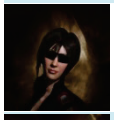
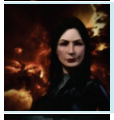
	**CaptPerseus**	Proofreader, translator.
	**CsaBx**	He has “Big face” on Bloodscalp, before the “EVE Infection”
	**ValenHUN**	He invited me to the EVE universe, he is the “source of all evil”
	Letum Omnis	We laughed together at Oveur’s Ship in a galaxy not too far away.
	**Davik Rendar**	EVE ship Charts : **http://www.eveonline.com/ingameboard.asp?a=topic&threadID=1360331**
	**Tasman Devil**	Article Writer: Certificates
	**Zapatero**	EON Magazine editor, PictureMaker
	**Ahar Sirayin**	Article Writer, Wormholes
	**Nethyrrean**	Article Writer, Mustache Killer
	**Kaori Ohtori**	Proofreader
	Zargan Nahrnid	Proofreader

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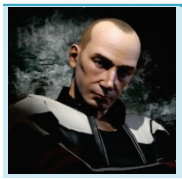	**X'ret** (2x Diamond Grade Sponsor)		**Patikus** **(www.eve-online.hu)**
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- **Nekerjelnezest, Ragna Rock, YChin Mei, Ergil, Lost Hamster, Lazarus Bregg**
- **For all hints and ideas on eve.com forum**

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Editors: Laci & Mermalior

ISK

INDUSTRIAL BLACK BOOK

VOL. 1

I would have never thought that such a detailed and all-out guide was composed of the initial tables. I want to express my gratitude to everyone who helped, be that either a suggestion or articles. This book is not made by the EVE developers; it is only the collected experience of years. Because of it, this the guide reflects the opinions of me and other contributors.

The secret of success is teamwork. Regardless that you are alone or work for a corporation; you will always need friends and people on your side. I hope that you received many useful information and that will be profitable. Do not let anyone to label you; create your own style. It is very important to be able and want to play with others, since this game is an MMO and not a single player game. Regardless you will have a Hulk, or compress ore in your Rorqual; perhaps work for agents, what matters is that you enjoy the game!

This cannot be replaced by any skill or other in-game items. It does not matter what ship you fly, does not matter how you play, even the skilling of your character has no meaning if you do not enjoy meanwhile what you do. Sometimes you have to do what you do not want to, but believe me, you could be left on your own on the long term if you are not a team player.

Do not be narrow-minded, the EVE is not solely about mining, mission running or manufacturing. Yes, these are the vehicle that operates the economy; however, you can also train your PVP skills as well, or go and explore the unknown. The most wonderful thing is the diversity; do not get tired of what you do. Do not become an old fox that lives only his own burrow and do not recognize anything else apart their own play style. It is not a problem if you do not know other styles but if you do not wish to know.

Do not be afraid of 0.0.! In many cases it is far more secure than the High-Sec systems, granted that you keep the rules of the wild lands and do not venture there alone. Not to mention that even mining, ratting in belts or mission running is more profitable there. And the feeling is nothing to compare with when you gain your first PVP experience. This adventure is highly recommended as you are going to need it very often in 0.0.

In EVE Universe the most valuable thing is the experience, which is not coming by itself, cannot be bought, cannot read or watch, you just simple live it through. You will lose things, many. But it is only up to you, whether you are going to enjoy it, and only some frigates or a cruiser will be the victim, or a ship worth's of several billions of ISK due to the lack of PVP experience.

I hope I was able to share with you some of what I gained from those who had taught me.

I wish you all a long and fruitful „life" in Eve.

Fly Safe o7

- Laci