



BattleClinic's



EVE Online Player Guide

April 2009

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Ruprect Belganor, Player Guide Editor

∞

...and I—

I took the one less travelled by,
 And that is what %\$#!led me up
 —Ruprect Belganor

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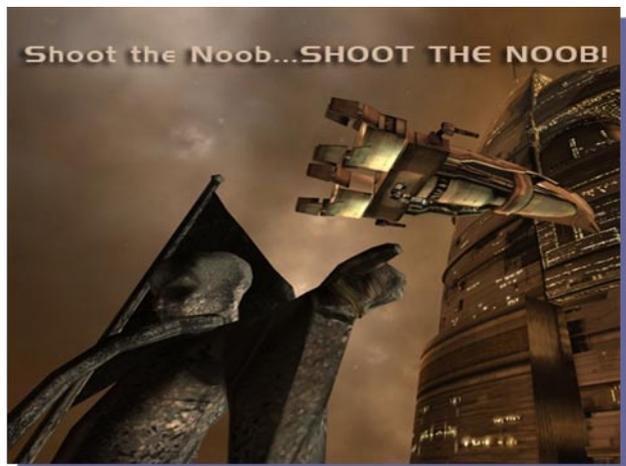
1 Introduction

The following information has been obtained from numerous sources including our own personal experience, the BattleClinic forums, and other EVE-related message boards. We've updated this guide from its original publishing in 2004 and subsequent update in 2008 to the current version merged with a guide by Ruprect. We hope you enjoy this information as much as we have had compiling it for you. And don't forget, for additional on-line help, guides, tutorials, tools, and forums, visit www.battleclinic.com.

You will find additional new-player guides at the Eve-Online official site, and of course the in-game tutorial is now an excellent source of information for new players. We strongly recommend that you invest time in the game's tutorial. Who knows...you might find a reward waiting for you at the end!

Welcome to EVE, the most in depth and yet exciting MMO we have encountered. This game is a sandbox; you are not limited as to what you can do and how well you can do it. Once you understand the basics, you can do anything given time. Time literally rather than just time at the keyboard. This game is not for the immature or the impatient - you need to be prepared to wait for things. In three months you will be just scratching the surface of what you can do, but you will have enjoyed everything you have done and look forward to the things you can do.

This guide is intended to introduce new players and enhance more experienced player's knowledge. Even those with a year in game may find a few handy hints. This guide is a work in progress and will be updated regularly. In fact, there are many more things that can be included. The size of the guide already shows the scope of EVE.



A quick reference sheet for commonly used information is at the back. [See Appendix I.](#)

1.1 Ultra-Quick Start for New Players

Here's a compilation of advice from new players for those of you who are completely ADD.

- After you learn how to fly frigates, jump into a cruiser and leave the destroyers for people that will be killed by cruisers. ~ spanishleo
- Go through the Tutorial and starter agents with your first Character. Then start thinking about what you want to do... ~ somas
- Don't be afraid to try, even if it means you lose a ship. The best time to learn is early. ~ metalmonkeymood
- Find yourself a decent player corporation as soon as possible. It will transform the game for you. ~ Mr Scrapie
- Your first priority in game should be to get all 6 basic Learning skills. Get them all to at least level 3 before you do ANYTHING else. This will also give you time to choose a direction you want to go in the game. ~ Llanthas Freedark
- Watch local! ~ taB
- Combat = 25% skills, 25% ship setup, and 50% tactics. You can take down a 3 year old player in a battleship by using a frigate - see the above formula. ~FragSyndrome
- A bad ship loadout will lose you the fight before you ever undock. ~ MrCue
- Ask questions, lots of them. You would be surprised the number of people that like to answer questions. ~ Xaintrix
- If you get into a fight and click default orbit you might get a nasty shock, if you haven't set it correctly, when your ship turns away from the target and goes off in some random direction out of your weapon range. Your sudden change or direction and slower speed as you turn will make you a lot easier to hit and if you're easier to hit you're easier to kill. ~ Merrick Tolkien
- Don't sell anything until you have checked you can't make more money by processing the item to ore first. ~ Rommy
- Download, install, and use EVEmon and EFT. They will give you a better understanding of the game. ~ ZMaster
- Don't fly in anything you can't afford to lose, starting again with no savings suxs. ~ Knighteyes
- Don't try to get into the larger ships/weapons too quickly. What you fly should not be dictated by what your skills allow you to fly but what your skills allow you to fly effectively. Also remember the bigger the weapon the lesser its effect against smaller vessels such as frigs. ~ Smeghead
- Once you're in your first corp, always be willing to help in corp events, don't be selfish. It won't go unnoticed. ~ Christoffski
- Before undocking and moving into 0.4 and below make sure your clone is up to date. There is nothing worse than getting podded and losing skill points. ~ josh_1143
- Plan not only to be able to fly a new class of ship, but the weapons and other modules required for it. The best way to lose a ship is to fly one you can't skill properly. ~ Horace Harkness
- Just because no one is around doesn't mean you should loot a can that is not yours, looting will get you flagged--meaning that whomever owns the can, can attack you without worrying about CONCORD until the timer runs out. ~ Maior Interfeci
- Right-clicking weapons or modules in space provides options like auto-repeat on/off.
- Don't take anything from a floating space can that isn't yours or your corp-mates.

2 Character Creation and Training

Each race is capable of doing any kind of profession and any pilot can fly any ship he/she wishes to, so long as the player has the skills. When you first roll your character, you'll be able to fly your faction's frigates and nobody else's, so if you chose an Amarr character but you really want to fly a Megathron, you'll need to cross-train. The design of ships for each race is quite different, however, and reflects the philosophy of the designing race. It is possible to train to fly the ships of a race other than your own. There is no "racial bonus" for a ship; that is, you don't get a bonus if you're a Minmatar flying a Minmatar ship.

The March 2009 upgrade to Apocrypha made the character creation process much simpler. It removed the School, Career and Specialization elements of creating a character and the high starting skills and skill points. You now start with around 50k in skill points.

2.1 Race - Which Race is best?

We at BattleClinic get this question all the time, and our answer is a uniform, "no one race is any better than another." We say this because "better" is relative to your style and preference of play. Many players pick a race because they identify with the race's philosophical approach. In any case, many players pick Caldari because Ravens are excellent mission-running ships. Others pick Amarr because the ships look cool. Some pick Minmatar because the female avatars are cute. Still others prefer Gallente because ... well ...we really don't know why. LOL, I'm sure we'll get lots of email about that comment. All in good fun. Just note: No race starts out any better or worse than the others, so pick one that looks good and might embody your personal philosophical leanings, and go for it.

Generally,

- Caldari are shield-tanking missile chuckers and sniping rail-gun users.
- Minmatar are shield or armor tankers with fast ships and (typically) autocannons.
- Gallente are armor tankers, fire blasters, and are adept with drones.
- Amarr are armor-tankers and use lasers.

2.2 Bloodlines

	Civire	Civire can handle pressure extremely well, an invaluable aid in combat or other stressful situations. Many of the best bounty hunters around are Civire.
	Deteis	The Deteis are commonly found in positions of authority, both in administration and the military.
	Achura	The Achur are reclusive and intensely spiritual; the average Achur has little interest in the material world.
	Intaki	The Intakis are especially good at human interaction and are very prominent in the federal bureaucracy.
	Gallente	Gallenteans value freedom and individual liberty above all else.
	Jin-Mei	The Jin-Mei have a very rigorous caste-system, which sometimes clashes with the liberal ideals of the rest of the Federation.
	Amarr	True Amarrians are proud, with great sense of tradition and ancestry.
	Ni-kunni	Most Ni-kunnis are tradesmen and artisans.
	Khanid	The name means "little lord" or "lordling" and is an affectionate term generally given to a cherished friend.
	Brutor	The Brutors are strong willed and have a great sense of individuality.
	Sebiestor	The Sebiestors are ambitious and driven.
	Vherokior	They roam between the other Minmatar tribes in large caravans, living as merchants, healers, scholars and fortune tellers.
	Statics	Male Statics are often aloof and condescending. Female Statics are more open and friendly to outsiders.
 Currently Non-playable	Modifier	Male Modifiers are constantly in search of something new and different. Female Modifiers are renowned within the Jovian Empire for their constant body enhancing experiments.

2.3 Attributes

Every character has 5 attributes: Intelligence, Memory, Perception, Willpower and Charisma. These attributes do not affect how or what you can do in any way other than they determine how long it takes to train skills. The higher the attributes the quicker skills take to train.

Initially you won't know what you want to get out of Eve so having a character with balanced attributes is handy. However, the Apocrypha upgrade to Eve now allows you to take 14 attribute points and re-allocate them once a year, so don't be too worried about "getting it wrong". A quick breakdown of attributes and skills follows (there are some variations with advanced skills). Read the section below on Skills to understand how to use this table:

Skill Category	Primary Att	Secondary Att
Corporation management	Mem	Char
Drones	Mem	Per
Electronics	Int	Mem
Engineering	Int	Mem
Gunnery	Per	Will
Industry	Mem	Int
Leadership	Char	Will
Learning	Mem	Int
Mechanic	Int	Mem
Missile Launcher Operation	Per	Will
Navigation	Int	Per
Science	Int	Mem
Social	Char	Int
Spaceship Command	Per	Will
Subsystems	Int	Mem
Trade	Char	Mem

Keep Charisma lower than your other attributes. Currently, it's not nearly as helpful as the other attributes.



Implants

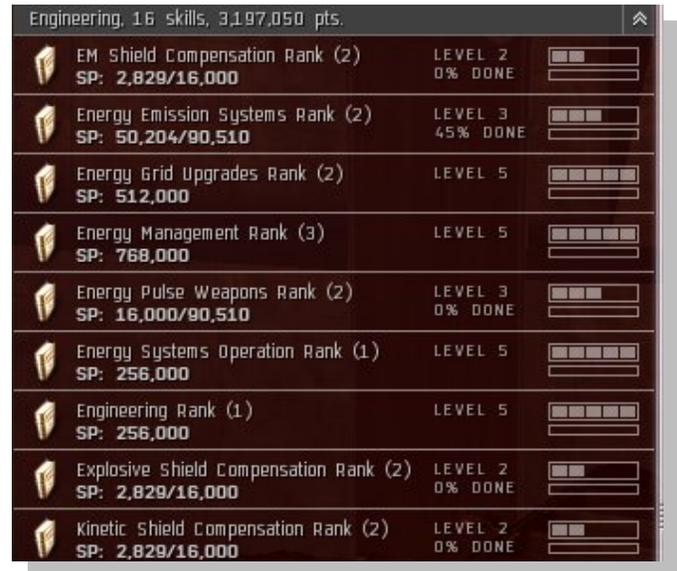
Implants exist in two varieties: implants that affect skills, and implants that affect attributes. Implants that improve skills are not as powerful because attributes influence skill training time.

You want attribute-enhancing implants if you're doing anything except PvP. There are implants for all the attributes, and they raise them by n points, where n is currently a number between 1 and 5. Each implant takes one slot, and the same type of implant can't be fitted a second time in another slot. So, if you want to use that +3 Memory implant, while you still have the +2 Memory implant, you can't use it, unless you unplug the +2 Memory implant, in which case it is lost. That brings up a second point about implants... the bigger the bonus, the more expensive they are, and they can't be insured. When you get killed you will lose your implants. For +3s and higher, this can get expensive.

2.4 Skills



In Eve, you learn skills through buying (or obtaining) a skill book. You then train in that skill. This is real time based. You can only train in one skill at a time, but you will continue training in that skill even when you are off-line. You can pause your training in a skill and train another skill. You will not lose the progress you have made in the one that you paused, but it will not automatically continue once the new skill has completed training. You will need to re-select it to continue, or select another skill to train up.



Engineering, 16 skills, 3,197,050 pts.			
EM Shield Compensation Rank (2)	LEVEL 2	0% DONE	
SP: 2,829/16,000			
Energy Emission Systems Rank (2)	LEVEL 3	45% DONE	
SP: 50,204/90,510			
Energy Grid Upgrades Rank (2)	LEVEL 5		
SP: 512,000			
Energy Management Rank (3)	LEVEL 5		
SP: 768,000			
Energy Pulse Weapons Rank (2)	LEVEL 3	0% DONE	
SP: 16,000/90,510			
Energy Systems Operation Rank (1)	LEVEL 5		
SP: 256,000			
Engineering Rank (1)	LEVEL 5		
SP: 256,000			
Explosive Shield Compensation Rank (2)	LEVEL 2	0% DONE	
SP: 2,829/16,000			
Kinetic Shield Compensation Rank (2)	LEVEL 2	0% DONE	
SP: 2,829/16,000			

A portion of a highly skilled player's skill list.

The Apocrypha upgrade now allows you to queue skills that could start within 24 hours. For example, say you are currently training a skill that takes 3 hours, you have 3 skills that take 6 hours, and another one that takes 5 days all of which you want to do in order. Three hours of the 24 hour queue are taken up by the skill you are currently training. You can add the 3 six hour skills to the queue taking up another 18 hours (21 total) and then add on the end the 5 day skill because it would start before the 24 hours is up. You can come back and adjust this queue at any time. You can add skills to the queue if they are partially completed and even add the same skill several times so that it increases several levels (assuming each level starts within the 24 hour timeframe).



24 HOURS			
Armor Rigging (3x)	LEVEL 3	9H 34M 33S	
Frigate Construction (2x)	LEVEL 2	1H 19M 53S	
Remote Hull Repair Systems (2x)	LEVEL 2	1H 19M 53S	
Nanite Operation (2x)	LEVEL 2	1H 19M 53S	
Industrial Construction (3x)	LEVEL 2	1H 59M 49S	
Ice Harvesting (1x)	LEVEL 3	1H 38M 13S	
Gallente Frigate (2x)	LEVEL 2	1H 11M 46S	
Minimatar Encryption Methods (5x)	LEVEL 2	3H 19M 43S	
Minimatar Starship Engineering (5x)	LEVEL 2	3H 19M 43S	

The Skill List

If you have alternate characters, note that only one of them at a time can train skills.

You will start off with around 50,000 skill points that will have been allocated to specific skills based on the character creation settings you made. All skills will train quicker depending on your character attributes etc. Each skill uses a primary and a secondary attribute to determine the amount of time taken to train that skill. So the higher your attributes in those areas the quicker the skill will train. Most skills will have pre-requisite skills that need to be trained to a certain level before you can train in that skill.

Skill Category	Usage
Corporation management	Creating a Corp and Being CEO. Anchoring useful for mining
Drones	Using/stats of Drones
Electronics	CPU stats, Targeting and Scanning
Engineering	Powergrid and cap stats, shields
Gunnery	Using/stats of Turret weapons
Industry	Mining, Production and Refining
Leadership	Give gang bonuses
Learning	Increase attributes and speed of training
Mechanic	Armor/Hull Stats, Rigging, Salvaging
Missile Launcher Operation	Using/stats of Launcher weapons
Navigation	Using/Stats of AB's, MWD's and ship speed and agility stats
Science	Blueprint Researching, Copying and Invention, Scanning, Jump clones, Mining
Social	Agent/Corp Standing, LP and Security
Spaceship Command	Using/Stats Ships
Subsystems	Using Tech 3 modular subsystems
Trade	Market/Contracts – order limits, range to setup/change, transaction costs, escrow

Drones, Gunnery and Missile Launcher Operation are fairly specific to increasing your damage output. Electronics, Engineering, Mechanic and Navigation are to large extent general abilities for all other ship stats and modules. Industry, Science and Trade are used for careers that don't focus on fighting.

Each skill has a rank and a level. The rank is a multiplier that determines how many skill points you need to increase rank. For example, Small Projectile Turret is a rank 1 skill; it adds 5% damage to these turret types per level, and to increase levels requires the following skill points (as with all other rank 1 skills):

- Level 1 – 250
- Level 2 – 1,414
- Level 3 - 8,000
- Level 4 – 45,255
- Level 5 – 256,000

At level 1 you will have 5% extra damage, but at level 5 you will have 25% extra damage.

Other skills are rank 2 or 3 - all the way up to rank 16. Multiply each of the above levels by the rank of the skill to determine how many skill points are required. For example the skill to fly Battleships is a rank 8 skill, assuming you have the pre-requisite skills etc. You can train to level 1 with just $250 \times 8 = 2,000$ skill points. But to take it all the way to level 5 will require 2,048,000 skill points.

That is a lot of skill points; scary eh? It's not so bad. So how long does it take to train skills? This is where your attributes come into play. Each skill has a primary and secondary attribute determinant. The small Projectile Turret skill is primary = perception and secondary = willpower.

The base aspect is that 1 skill point takes 1 minute and your attributes then reduce this. Training skills in the learning category will increase your attributes. Attribute Implants can increase your attributes further. Finally, the Learning skill itself will decrease training times generally. In actual fact your attribute point levels are displayed with the Learning Skill adjustment taken into account (adds 2% to each attribute):

Seconds per skill point = $60 / (PA + SA/2)$

Where:

PA/SA = Primary and Secondary Attribute respectively as adjusted by the skills in Learning Category and Implants.

Example: Small Projectile Turret skill to level 5

Say your attributes for these are 10 Perception and 12 Willpower and you have no learning skills trained at all. (I.e. base stats):

$$256000 * 60 / (10 + 12/2) = 11.1 \text{ DAYS}$$

Now let's say you have trained both the Perception Skill (Spatial Awareness) and the Willpower skill (Iron Will) to level 4 which means that your attributes have increased to 14 and 16 respectively. You also train the Learning skill to level 4:

With Spatial Awareness, Iron Will and Learning at level 4 and +2 implants:
 $256,000 * 60 / (17.28 + 19.44/2) = 6.6 \text{ days}$

This is just an example and you can increase your attributes much more than this with the learning category skills. 10 attribute points per Attribute in total. Implants can increase them up to another 5 points each and finally, the Learning Skill level adjusts the total by up to 10%.

Remember that you can re-allocate up to 14 attribute points every year.

EVE Mon

If you're serious about EVE, consider getting EVE Mon, which is a free, open-source program that tracks your skills and tells you when to log into the game and change your training. Get it here:
<http://evemon.battleclinic.com>



Here's the basic skill training process:

1. Identify what you want to do
2. Identify the hardware you need to do it.
3. Identify the skills required to install and use the hardware.
4. Buy and train skills until you have all the skills you need.
5. When you have the last skill you need, start saving for the hardware.
6. Keep training your skills while you save for the hardware.
7. Update your [skill point clone regularly](#)

2.4.1 Learning category skills

You need to get these trained up as soon as possible. As soon as you can afford them, get the rank 3 skills which cost a measly 4.5m ISK each. The most efficient order is:

Step	Skill	Skill Rank	Attribute	Train Levels:
1	Analytical Mind	1	Intelligence	1 - 4
	Instant Recall	1	Memory	
	Learning	1	N/A	
	Cybernetics	3	N/A-Implant	
2	Logic	3	Intelligence	1 - 4
	Eidetic Memory	3	Memory	
3	Analytical Mind	1	Intelligence	5
	Instant Recall	1	Memory	
	Learning	1	N/A	
4	Logic	3	Intelligence	5
	Eidetic Memory	3	Memory	
5	Iron Will	1	Willpower	1 - 4
	Spatial Awareness	1	Perception	
	Empathy	1	Charisma	
6	Focus	3	Willpower	1 - 4
	Clarity	3	Perception	
	Presence	3	Charisma	
7	Iron Will	1	Willpower	5
	Spatial Awareness	1	Perception	
	Empathy	1	Charisma	
8	Focus	3	Willpower	5

	Clarity	3	Perception	
	Presence	3	Charisma	

This is pretty boring though as it will take a few months full time to train up. The idea is to have some fun as well, so you may want to consider mixing in other skills! We suggest you train the following as soon as possible:

1	Analytical Mind	1	Intelligence	1 - 4
	Instant Recall	1	Memory	
	Learning	1	ALL	
	Cybernetics	1	N/A Implant	
2	Iron Will	1	Willpower	1 - 3
	Spatial Awareness	1	Perception	
	Empathy	1	Charisma	

Train a few non-learning related rank 1 skills BUT as soon as you can afford it, buy all the rank 3 Learning skills and train the following straight away. The rank 3 skills cost several million each, so start saving.

3	Logic	3	Intelligence	1 - 3
	Eidetic Memory	3	Memory	
	Cybernetics	3	N/A Implant	
4	Iron Will	1	Willpower	4
	Spatial Awareness	1	Perception	
	Empathy	1	Charisma	
5	Focus	3	Willpower	1 - 3
	Clarity	3	Perception	
	Presence	3	Charisma	

The above plan will increase your attributes and decrease learning times quickly without devoting your entire time just to this and will thus allow you to increase other skills. You will see significant benefits very quickly.

Intelligence and Memory skills are trained first because they speed up all other learning skill training as well as many non-learning skills. Learning is trained up at the same time because it benefits all training times.

You will want Cybernetics at Level 1 initially so that you can fit +1 or even +2 Implants as soon as you get them. You will get provided some +1 implants from storyline missions so save your money and don't buy them. Also, +2 implants are more expensive and you are better off saving for the rank 3 learning skills as they will provide more benefit to your attributes. +3 and higher implants will need to increase the Cybernetics skill only to level 2 but are much more expensive. Still, you should try and get into these sooner rather than later.

The last few levels in learning skills as described below should really only be considered if you are planning on being a long term player. At this stage you will get more benefit from implants and by devoting training time to the following will take a long time to see any benefit, especially from the rank 3 skills from level 4 to 5.

6	Logic Eidetic Memory	3 3	Intelligence Memory	4
7	Focus Clarity Presence	3 3 3	Willpower Perception Charisma	4
8	Analytical Mind Instant Recall Learning	1 1 1	Intelligence Memory N/A	5
9	Iron Will Spatial Awareness Empathy	1 1 1	Willpower Perception Charisma	5
10	Logic Eidetic Memory	3 3	Intelligence Memory	5
11	Focus Clarity Presence	3 3 3	Willpower Perception Charisma	5

2.4.2 Other Skill Training Advice

- As a general approach, put skills in your skill queue that take minutes or a few hours and then throw in a longer term skill at the end, so if you don't get back on-line within 24 hours, your character will continue to train.
- You should always be training. If you are going away for a week, make sure you have a skill ready to learn that takes that long or longer.
- In the options menu of the skills section, show "all skills available to learn". This will show you not just skills you already have (and can enhance) but all the skills that you could start learning straight away if you obtain the skill book for that skill.
- If you have been given hardware, check the skill requirements and if you are way off, consider selling the item. It might be a long time before you can use it based on the skills you need for it. By the time you have got the required skills you may have obtained the hardware again via loot.
- Get as many rank 1 skills as you can that will benefit your character as soon as you can and train them all to level 3 – after the learning skills. It is important to note that for any skill the training time increases exponentially for each level whilst you generally only get the same incremental benefit from each level. You call then whether to take them to level 4 or 5 as this is dependent on your own game goals.
- Advanced skills can have significant pre-requisites but you should always check what they are because some require the pre-requisite skills at level 4 rather than level 5 – which obviously would save a lot of unnecessary training to get you to your goal. Again, EveMon will assist greatly.
- EveMon will show exact Attribute levels (not rounded) which also includes impact of attribute skills, attribute implants and the Learning Skill

2.4.3 Skill Training Strategy

The current skill list has enough different skills that if you want to learn them fully it would take your character many real-time years! MrCue, BattleClinic's chief architect, once calculated that it would take you 28 years in real time to learn every skill in EVE to level 5. However, the EVE universe is constantly expanding and you can expect to see a number of new features as time progresses. It makes you think...maybe specialization might be the way to go!

There are three main strategies to training:

Deep Training

Deep training is the act of focusing completely on a single skill until it has been trained to level 5. At this stage the skill has been completely trained and cannot be taken to a higher level, and the character can move on to the next skill.

The advantages of deep training are that the maximum potential benefit is obtained from each skill with a slightly higher benefit from the trained skills than most other characters have, and the simplicity of picking a single skill to train and sticking to it.

The disadvantages of deep training are that training skills at level 4 and 5 generally take significant amounts of time and the character does get diminishing returns in terms of benefit for time training the skill, and that the focus means that other useful skills are ignored for significant amounts of time.

Deep training is very useful for characters that are focused in a single field, such as research or refining, where there are relatively few skills available and the edge gained from training all the way to level 5 gives an important benefit.

Broad Training

Broad training is the act of training skills evenly, training as many skills as possible to level 1 before training them all to level 2 then 3 etc. The advantages of broad training are that the bonuses available from the skills are obtained as fast as possible. Training a number of skills to level 2, gives a large spread of bonuses on the character in the same time as training a single skill to level 4 and only gaining a bonus in a single area. The disadvantages of broad training are that often a skill that is not really required will be trained just because it is 'easy' to get it to level 2 or 3. Also, by training many skills in a broad fashion, a large number of skills that require relatively high levels of other skills as prerequisites will be denied the character for a very long time.

Goal-Oriented Training

Goal-oriented training is the act of aiming for a particular skill and training all of the prerequisite skills required to get that skill. This is often used for players that have a requirement due to their trade, for example a miner might want to obtain a mining barge and mining drones to maximize the amount of ore that they can gather.

The advantages of goal-oriented training are that there is a specific path that is being worked toward so there are no problems with considering which skill to train next. Also, the desire to reach the specific goal has its own benefits.

The disadvantage of goal-oriented training is that in the rush to get to a single skill set all of the other skills will be neglected, resulting in a character that is missing some vital abilities

2.5 Bio Ins and Outs

By SghnDubh

Once you have set your training, you may find the "Bio" section of your character. Anything you write here is visible to other players. Here's a handy guide of things to put -- and not to put -- into your bio.

In: Amusing eve-related anecdotes collected during your missions or travels.

Out: Wrecking shots on NPCs.

In: Amusing eve-related anecdotes collected during your PvP.

Out: Wrecking shots on human players.

In: Links to a website with nice photos, artwork, or information about your real-life country.

Out: Coloured text flags.

In: Good natured, game related mockery of other races or factions within EvE.

Out: Text pictures of your middle finger.

In: Links to informative websites.

Out: Links to "You've been podded by Wanker01" (i.e. the Most Wanted Link. A scourge in EvE that's deeply annoying)

In: A clever story about your beer-drinking escapades while safe-spotted in the middle of Curse.

Out: The beer truck.

In: A list of known pirates you've ganked, with a link to EvE-KB.

Out: Posting "Anti Pirate" in big letters and then stabbing up.

In: Lists of items you sell.

Out: Flying around in 0.0 with lists of items you sell, telling people to purchase your goods in empire.

In: Text colour and size of read-able proportions.

Out: Tiny size or black/gray text that gives instead the impression that you're a childish wanker.

In: Information about you or your corp's exploits that have contributed in some small way to your further domination of the eve universe.

Out: Bunny.

In: Links to mission- or mining- related information on an external or IGB site.

Out: Mission types, damage types, AU to Kilometer conversion charts, etc.

3 The Game Starts - EVE Basics

You will immediately get launched into the tutorial agent missions. Do them all, and take your time. You will do several agent mission types including courier, fighting and mining. Read the next few sections before you start this though as it may save you some time and angst.

At any point in time you may want advice, do the tutorials relating to chat channels and mailing lists. This will show you the basics of this. Close the Rookie channel; it is a waste of time and full of people that don't know anything. Besides which, having it open will increase lag. Then join the "HELP" channel when you want help – close it afterwards because of lag. The people in the Help channel are often very experienced and are more than ready to help. The HELP channel is the best resource you can get, no matter how long you have been playing. You are unlikely to get bad advice, because if someone does say something that is wrong, the other 400 odd people on the channel will immediately jump in and correct them. Just make sure you don't annoy them – be respectful and you will learn.

3.1 Death - Insurance and Clones

Death and Taxes are the only certainties in this world and in Eve. There are consequences from being killed in Eve. In fact Eve has one of the most punitive models of any MMO.

You can lose a ship in PvE or PvP. This is when your ship is destroyed and often referred to as being podded – because when the ship explodes you automatically eject into your "pod". Your ship will be destroyed and you may lose some or all of the equipment as well. You will not lose any skill points (with the possible exception relating to tech 3 ships).

You can be pod killed in PvP. This is where another player destroys your pod. It is possible to lose skill points and you will lose any implants.

It is pretty much guaranteed that you will lose ships and highly likely that at some point you will be pod killed.

There are methods to minimise these losses when you do get podded (Insurance) or pod killed (SP Clone, Jump Clone)

3.1.1 Insurance

If you get taken out the earlier in the game the better, as it will cost you relatively less. If you are on the starter ship, you will get that right back again from automatic

insurance. In PvE if your ship is destroyed, don't forget to go back and loot your own wreck which could be most of the guns and cargo you had. This could save you a lot of time and money. In PvP, it is most likely that the enemy player will loot your wreck, and besides if you go back, he will have another opportunity.

If you are very careful with your ship then insurance is not worthwhile as Insurance isn't cheap and you will get automatic Insurance which works out at about 40% of the Ship materials cost. If you have a pretty good frigate or other ship then insuring it is worthwhile especially if for PvE you are flying above your skill level (generally not advisable) or going through low-sec (potential PvP). Do not engage in any PvP without full insurance.

A good Cruiser may cost you 6m ISK. 100% insurance may cost 2m and you will get 6.8m back if destroyed. So it's a good deal if you are putting your ship in harm's way. Again, if you choose not to insure then you will get around 2.8m back (40% TBC) as standard automatic insurance. You can't insure your equipment or rigs.

Ship Insurance won't protect your characters skill points or implants. Further if you lose a Tech 3 ship Insurance won't protect the skill level loss from that event.

3.1.2 SP Clones



You can create a Skill Point Clone (SP Clone) at any station that has medical bay facilities. Keep your SP Clone updated so you don't lose any skill points if you get pod-killed in PvP. If you are doing a lot of PvP buy the lowest clone grade that still covers your sp's, but if you are mainly into PvE, buy clones that are way above your sp's so you don't have to buy new clones as often. If your pod is destroyed and hence activate a SP Clone be sure to get a new clone. I.e. 1 pod-kill = 1 clone.

You will lose all implants when you get pod-killed and you will find yourself transported back to the station you have your sp clone installed. However, interestingly enough, if you are training a skill when you get pod-killed, you will continue training as if you still had the implants until either the skill is completed or you pause or change training.

3.1.3 Jump Clones

Jump clones, whilst not strictly a form of Insurance can work in this way because if you have say +4 implants in your main body, you can create a jump clone without implants and jump into that clone whenever you are doing

something dangerous. If pod-killed you will then not lose the implants in your main body. The details follow.

You need a standing of +8.00 with the NPC Corporation with medical bay facilities at their station before you can get jump clones. It will take a lot of mission running for a corporation to get to +8.00 standing, even with good "social" skills. Don't even bother trying to get there with just level 1 missions, and even level 2 missions will take a long time. Level 3 and 4 missions will increase standing quickly though. Otherwise your only alternative is to join a corporation that can help you here. You will also need the Inphomorph Psychology skill (1 clone per level).

Jump clones allow you to have a copy of your body which you can jump into. It is quite confusing. Be aware that jump clones and sp clones are completely unrelated, and what happens to one will not affect the other as such.

When you create a new jump clone it is created without implants, but your main body will retain its implants. You can then jump into your clone body and your "main" then becomes the "clone" and will retain all its implants. Your attributes and hence training times will be determined only by the body/clone that you are currently in.

There is a 24 hour delay before you can jump back and any training must be paused when you make the jump.

You could setup a clone with hardwiring implants that will help PvP, whilst your main body has implants which help your other career paths.

You can also use Jump Clones to travel between destinations. Say you install a jump clone at station Alpha. You then travel to Station Bravo many jumps away. Now you decide that you want to go back to station Alpha. Well you can just jump into the Station Alpha Clone. This becomes your new body and the body back at Bravo becomes your clone which you can jump back into later.

Interestingly station Bravo doesn't have to have medical bay facilities and you don't have to have good standing with Bravo Corporation. In fact, once you have created a jump clone at the corporation station you have high standing with; you can activate it and move your clone and main anywhere regardless of standing. This is kind of weird but that is how it works.

Having a jump clone is then good if you like to swap between high sec carebear and low-sec/nullsec operations and PvP.

If you get pod-killed then you will automatically be transported to the station where your sp clone is. You are however, still essentially in the same jump clone body. So

if you have an SP clone in Alpha and you have a jump clone in Charlie, and you get pod-killed in Bravo then you will be transported to the Alpha sp clone and your other jump clone will still be in Charlie. Simple eh!

3.2 Tutorial Agent Missions

The Apocrypha upgrade has now expanded the tutorial missions so that there are 10 for each main career path. It is wise to do all 10 from any series that you choose to do because there will be some good standing increases and good rewards for a new player especially in the last few missions. Besides which, they will help you understand the game.

Now there is some confusion about agent missions in that you have a certain period of time to accept the mission or it will expire. So check how long you have, it might be three or four days but it counts down from the moment you hear about the mission regardless of whether you have accepted it or not.

You will lose standing with THAT agent, its corporation and its faction if you:

- decline a mission you haven't accepted more than once every four hours
- let a mission you haven't accepted expire (you must decline it)
- Accept a mission and subsequently fail to complete the objectives and/or hand the mission in before it expires.

You can decline missions from different agents within that four hour period. You may get a bonus for completing it within a certain amount of time, Note that this starts from when you have accepted the mission not from when it first comes available. You can therefore wait until you are ready before accepting the mission (don't let it expire), but do it right away.

A word of warning, in some missions you may have to kill pirates and then collect a specific item. Once the pirates are killed or specific structures destroyed, the mission may state that the objectives have been completed. Well it hasn't, you still need to collect the item/s and take them back to the drop off point or you won't get your reward! The items may be in a wreck of one of the pirates or a container that is left over from a destroyed building.

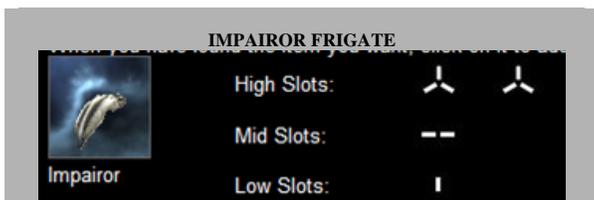
3.3 Starting Ship and Equipment

Do all the tutorial missions in your starter ship, but add items when provided, and perhaps upgrade your guns a bit. You will definitely want a shield booster and an afterburner. If you get into a situation where the shield booster and afterburner don't get you out of trouble, then

warping out of there is your only hope. Don't buy much, you won't be able to use much at the moment anyway and you will not like losing all these goodies. Besides the missions will give you a lot of what you need from loot.

Get the free Eve Fitting Tool (EFT) now and learn how to use it. It will allow you to play around with fittings for your ships.

To get you started take a look at the following example frigates, but you will probably want to read the entire section on [Ships and Equipment](#).



Hi Slots = 2
Turrets = 2
Launchers = 0

On this frigate, I have 2 Hi Slots. At any given time I can have a max of 2 turrets installed and I can never install any missile launchers. I know all this by being in a station and pressing the "refitting" button. There are some other limitations. Different turret devices require different amounts of CPU and Power, but as long as the combined need of all my stuff is less than what my ship has, I can use that stuff. There are also skill limitations. Every device has an associated skill or group of skills that you must possess in order to install and/or use it.



Hi Slots = 3
Turrets = 0
Launchers = 3

Here, I have no turret slots, only launcher slots. I can use any three missile launchers within my skill, CPU, and power limits, but I cannot use a mining laser or any other turret-type devices in these slots. Also, be careful to buy missile launchers that you have the skill to use, and don't forget: you'll also need to train light missile skills (or rockets, if you prefer).

OK I can hear you asking, "What's the difference between light missiles and rockets?" Rockets are extremely short-range and light missiles are slower but have a bit longer range. More later!

3.4 Fleets/ Gangs

Some missions/plexes etc are hard and/or take a long time. It is often more fun, quicker and safer to do these in a fleet – cooperative play. So ask for help in "local" or ask a friend or corp mate to join in.

You invite them to "join fleet" - often referred to as a gang. This will instantaneously share ALL bounties whilst the gang is active even if your gang members are not in battle.

The mission owner also has the option of sharing the mission rewards including LP's and standing increases with up to 5 gang members.

All gang members will automatically be able to loot each other's wrecks and assist each other with remote repair modules or transfer modules and even gang bonuses (Leadership skills). This can add significant benefits when completing difficult missions/plexes or PvP operations.

In a recent patch (June 08); fleet members can no longer attack each other in high-sec without concord intervention. So it is now even more beneficial for cooperative play with strangers, there's no need to trust them completely. Of course, in low-sec anyone can attack you regardless of being in a gang or not. If in the same player corp then you can attack each other as normal.

If someone in local asks you to help them and join their fleet, well go for it.

The person that first invites others to join a fleet thereby creates the fleet and is automatically considered the fleet "boss". The boss can move fleet members around to squads or squad leaders as they see fit. They can also transfer the roles of boss or gang booster (bonus provider) to whomever they see fit.

Note that in a small fleet, the gang booster must be the squad leader with other fleet member's squad members; otherwise the bonuses don't apply to them. Further, the booster must be undocked and in the same system for the bonuses to apply.

It is possible to create multiple squads and as such separate squad leaders which act as boosters for each squad. Indeed, the fleet structure can be highly customized with squads, wings and commanders.

Individuals can warp directly to any other member of the fleet and can "broadcast" key tactical information. Leaders of squads/fleets can automatically warp entire squads/fleets to a specific location.

In summary, for any cooperative play, whether PvP or PvE, a structured fleet/gang will provide many benefits.

3.5 Newbie PvP

Now is the time to experiment. If you lose your starter ship, you will get a new ship exactly the same, for free. So don't "rush" into buying a new ship and/or better weapons, this one works fine for the moment. And don't worry if you get blown up. It will not affect you negatively in any way other than you have to go back to base.

I cannot stress this enough. As a new pilot in the starter ship, you cannot be any worse off. If someone challenges you, don't be afraid of losing or making a fool of yourself. You will learn more in the few seconds it takes to lose your ship than a few days of playing it safe in missions. Even if they ask you to follow them to low security space, if you die you lose nothing other than an [SP clone!](#)

Once you start buying ships and equipment you may want to be a bit more cautious because you could lose your equipment and some of your ship value. But in the newbie ship... go for it... you have nothing to lose

If you do wish to try it, I would suggest reading the section on [Rules of Engagement](#) first.

3.6 Careers in Eve

BattleClinic is all about Fight Smart™ and a lot of this document is aimed towards that goal. But Eve is very open ended in that you have the opportunity to get into many careers at any point in time, many of which will earn you ISK to help you fight smarter! I use the term "career" loosely because there are many mini-careers as well, you are not limited to following one career path at a time and you are not punished by moving into new careers. You simply need to train the appropriate skills and learn how to do it. Then from one day to the next you can do different things. Below I list some of the careers you can get into in Eve with a brief description. Throughout the guide I provide more detailed notes on some of the more complex careers.

Mining

Buying a frigate that gives bonuses to mining a few mining lasers and a 5K ISK survey scanner, a new pilot can locate asteroid belts, target an asteroid and activate the mining lasers. Once the cargohold is full the lasers will stop so just take the ore back to a station and sell it.

Trading

There are many forms of trading, but the basic concept is to buy stuff from the market and then sell it at a higher price. You can place buy orders to get items cheaply or buy directly from a seller. You can sell directly to a buyer or place a sell order. You can transport items to get better prices; you can refine items to their base materials and sell or use the materials. You can buy Blueprints Originals (BPO's) or Blueprint Copies (BPC's) and use materials to manufacture items for sale. Some items you can only buy from contracts. The basic trick with trading is to investigate the market for specific items and look for value or large price differentials. There is a lot to trading so I have an entire section on this. For now just note the following:

- You can buy and sell goods that you don't have the current skills for (i.e. that you can't use yourself).
- Make sure you take into account the Sales Tax and Brokerage when working out whether you will make a profit. These are 1% without skills
- Look at the volume of the item you are buying if you are going to be transporting it. It may not fit in your cargo.
- Always select 3 months as the time span, it doesn't cost anymore and doesn't stop you from cancelling or modifying the order.
- Triple check contracts – there are many scams and rip-offs.
- Triple check the decimal place when making buy/sell orders.

For more advanced concepts [see section on trading.](#)

PvE Mission Running

Just like with the tutorial agents, you find an agent that will speak to you and run missions for them. Starting with level 1 agents (frigates and destroyers). The higher their quality the more rewards you get but they will not be any harder because of quality. As a new pilot don't do level 2 agents unless you have a cruiser. [See here for more details](#)

PvE Privateering/Ratting

Go to the nearest 0.8 security system or lower and warp to an asteroid belt. You may encounter some NPC pirates which will engage you. You will get some loot and bounty for killing them (a couple of thousand each). Go to another asteroid belt in the system and take on some more pirates. The NPC pirates get nastier the lower the security of the system so if you find them easy, go to a lower security system. They do not exist in 0.9 and 1.0 space.

After killing a NPC pirate you may notice an aggression timer appear (top left of screen). This will last for 15 minutes but doesn't mean much because it isn't related to player aggression (see notes on [Rules of Engagement](#)) and doesn't stop you from docking/jumping.

Pirates respawn after a certain amount of time (~ 15 minutes) but they are not always in every belt so move on. You can return to previous cleared belts to see if they have re-spawned yet. Killing Pirates increases your security status which is only important if you plan on being a pirate of some sort yourself.

Some Other careers in Eve

[Advanced Trading: margin, refine, production, invention.](#)
[Advanced Mining: Barges/Exhumers](#)

[Salvaging and Ninja Salvaging \(semi PvP\)](#)

Freighter/Courier

[Exploration and Scanning](#)

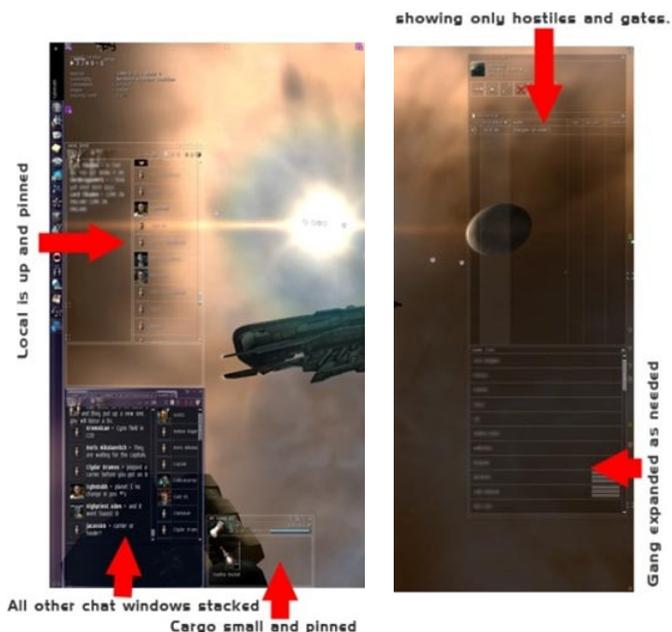
Pirating (PvP)

Mercenary (PvP)

[Factional Warfare \(PvE/PvP\)](#)

Corporation Warfare (PvP)

3.7 Recommended In-Flight Screen Layout



We recommend you configure your in-flight screen as shown. Here's why.

1. Local must be up and pinned. Never bury local in the rest of the chats. You need to know who is in system with you at all times.
2. All other chat windows can be stacked. We recommend that in combat you minimize these, since you should be listening in TeamSpeak and not chatting. If you are in a corp that allows people to be fighting with you but not be on TeamSpeak, you're in a corp that won't do very well in a fight.
3. Your cargo box should be small and pinned so that if you need to change ammo or crystals you can drag them quickly.

4. Until you are an experienced combat pilot, ensure that all of your modules, even the passive ones, are showing. This helps you understand what's active and what's passive. Hide these as you gain experience.
5. Gang list should be expanded, but that's up to you. If you're a logistics ship, it is vital so that you can monitor the health of those you are supporting.
6. The overview needs to be filtered down to Pilots at War with You, Pilots with Bad and Horrible standing to you, your corp, or your alliance, and possibly pilots with poor security. If you're travelling in low-sec or no-sec, filter everything except Gates. If you're doing missions or mining, modify these settings as needed.

3.8 On-Board Scanner

Every ship has an on-board scanner. It doesn't require probe launchers, but it is fairly limited in what it can do. There are 5 different groups that you can scan for. You can scan for any of these, and the Astrometrics skill will increase the number of groups you can scan for at any time. The scan is completed instantly when you press the scan button. There is a scan range and a scan angle. Set the scan range to the maximum by typing in a very large number (say 9,999,999,999), when you hit the scan button it will automatically change the number to the maximum range in km's which I think works out as 15 AU (**150m km's ~ 1 AU**).

Now the scan angle is a conical viewpoint from the camera angle. So it doesn't matter which way your ship is facing. Change the camera angle and the scan will change accordingly. Press F11 and open the system map and you will see it all on screen.

If in low-sec, set up safe spots near planets. Not moons, because there is often a POS there which will kill you on sight.

The way to use it then is to angle your camera to an area of interest, set the scan angle to 90 degrees. If you get a hit on the thing you are looking for then reduce the angle to say 30 degrees and try that. If you get a hit then reduce the angle more. If you don't get a hit then you need to change the camera angle a slight amount within the 90 degrees that you got the initial hit. I.e. you narrow it down. Because of the low range it has limited use, but practice and you will find it helpful for finding player enemies or potential prey within a system.

Advanced scanning requires recon/scan probe launchers. [See section on Exploration and Scanning.](#)

3.9 Gates, Warping and the Autopilot

Jump gates allow you to travel between systems/regions and are located near the edges of each system.

Warp gates allow you to enter a Deadspace area within the system (for missions or plexes)

Warping: You can warp directly to an object (to 0m) in the same system (or warp to within 10km etc). The minimum distance you can use warp drive is 150km. You can't use the warp drive in deadspace (i.e. wherever you have used a warp gate to get in).

Autopilot: If you want to go through several systems using the jump gates, you select your destination via the star map and can press the autopilot which will get you there. You can set waypoints so that you take a specific path.

However, there are few things you should know:

- The autopilot will cut off the warp drive 15km from waypoint objects (such as jump gates) and use normal engines to approach it. This takes a while and hence limits the benefit of the autopilot a lot.
- Generally when you set a system destination the autopilot will cut out when you arrive in that system. You will still need to warp to the destination within that system
- Autopilot can be handy if you have many systems to traverse and you want to go rearrange your sock drawer rather than sit at the computer waiting while you get there. But be careful about how your autopilot is getting you there. If you go into systems with <.5 security, you may get blown away whilst Away From Keyboard (AFK)!

So with the above issues, autopilot is **not** the best thing since sliced bread. It is most often safer and quicker to set your destination (and/or waypoints) and follow the path manually. Warp to the gate within 0m and jump straight away, then warp to the next gate. Rinse and repeat.

**Remember:
low-sec + autopilot = podded**

You can change your settings on the overview so that you only see certain things. Some items to remove might be all the police ships, customs ships and sentry guns. One to include is Jump Gates. This will reduce clutter and will also allow you to select the jump gates manually.

3.10 Player Corporations



When you feel you are ready at any point you can leave your NPC and join a player corporation. We would suggest you do this as soon as possible rather than later because you will learn more and get more out of the game. However, it is probably better to stay with your NPC Corporation whilst still on the "trial account".

We would not suggest you start up your own corporation at this point or in the near future because it will give you no benefits whatsoever.

With player corporations you may want to join one that is based in high security space and does a lot cooperative play such as missions, deadspaces or mining. But in reality it depends on what you want and you may decide to go straight to null-sec. It is common to move corporations as and when the style of play suits you but you may find that the corporation grows with you. There is no best corp for everyone.

Player corporations will have a CEO and directors which may have shares in the corporation. General members will generally not have shares. The CEO and directors can give rights and roles to members. This may be in the form of access to corp hangers or the role of feeding the POS or keeping track of corp funds.

It is a difficult interface to understand. This is another reason not to start your own corp.

A player corporation will have a tax rate. This can be any % the CEO chooses but will usually be 5% to 10%. Taxes are applied to ANY bounty from kills that you receive. It is also applied to Mission rewards. It is not applied to any trading transactions you make.

BattleClinic and other sites offer corporate recruiting boards. You're free to browse these boards and find corporations that might appeal to you. Corporations can give you several things, the least of which is some friends to play with. Let's look at what a decent corporation has.

1. What's the corp's mission? Pirate? Anti-pirate? Industrial? PvP? Missions? A corp with multiple goals is preferred.
2. Forums. Go to BattleClinic and request a free forum for your corp!
3. An Application Process. Quality over Quantity is the way to go in EvE. A corporation that accepts everyone that comes in usually has problems with thieves and cons.
4. A stable command structure. You don't want your CEO to quit right after you join.

5. What time zone the corp. is in. It doesn't do you any good to be the only person in game when you get on.
6. Weekly in-game meetings. This is usually a really good sign that the corp is organized.
7. A view on pod killing.
8. If there are any immediate bonuses for joining. Some corps use these pluses as a recruiting scam.

One of the most important things a person can do is get to know the corporation players. Do some research; see what other people think of them. Hang around in the in-game chat room, if they have one. Talk to them on Team Speak. Don't just join the first corporation that offers you a free ship and some ISK. Make an informed decision. When you know that you're going to join them, send them an e-mail, or whatever way they prefer to have information sent to them.

Okay, hopefully by this point, you've picked a corporation. You're ready to join in-game. But how can you do this? First, you're going to have to find out where one of the corp's offices is. Fly to that system, and dock in the station it is in. Go to Offices, and click join. Fill out the application with what jobs you want. When it is sent, someone will have to approve it in the corp. Then, when you get the mail, go to the corporation button, applications, view, and review it. If it meets to your satisfaction, click okay. Then, you're in. I hope you enjoy your choice.

Let's take a look at various ways that players run their corporations. Some players run their corps for profit and power. They usually have a determined communistic infrastructure where players are required to dedicate much of their ISK to the corporation. There is a fairly rigid hierarchy of command starting with the average player up to the commanders, directors and finishing at the CEO.

Many corporations are founded on the belief that the more people that are within the corporation, the more powerful, effective, and self sufficient the corporation will be. Trading goods and services are usually required to be between fellow corp or alliance members.

Large corporations can form the major alliances in EvE, which try to control the lawless 0.0 space. Unless they need miners, you probably won't get in very fast. Generally, you are either invited to join, or you visit their recruiter. Because they are in an alliance, which is a conglomerate of corporations, they have many friends, and even more enemies and that requires a strict organization. They'll be wary of spies, so you may find it difficult to be invited to join.

Some corporations are highly organized criminal syndicates. Hi-jacking miners and trade runners, camping choke-point gates, or declaring war on empire-based corporations may be amongst the tasks which you will participate in. A high level of secrecy and trust is required amongst these corporations which usually make them difficult to get into. Beat the pirates at their own game—PvP—and you may get invited.

Some corporations model themselves after police or security organizations. They call themselves “anti-pirate.” Guarding asteroid belts, stations and jump gates to ensure the safety of the common pilot, escorting transports, or searching for pirates with bounties are typical activities.

Many corporations specialize in one profitable role: mining, trade, or manufacturing weapons or ships. These corps may have partnerships or pacts with alliances or larger corps to supply needed goods.

Most corporations consist of a group of players whose primary goal is to just have fun! These corporations are highly flexible and dynamic and may do a little of everything. Their members often get to keep most of the ISK they earn and the corp has a low tax rate. While there is generally no or very little sign of hierarchy there is always a CEO who is usually someone who is elected and dedicates the most time to playing EVE.

Of course, no corporation is strictly limited to any of the categories above.

4 Important Game Concepts

This is all quite important information for you to understand and know as soon as possible. However, if you don't understand it at first, don't worry, come back to it later and you will have a better idea.

4.1 System Security and Rules of Engagement

I mentioned this now because it is fundamental to understanding how eve works.

Combat is an essential part of EVE. Combat between players (or PvP) is common and, in many parts of the galaxy, almost unavoidable. Under some circumstances, attacking another player is considered illegal and may result in a loss of Security Status or attack by sentry guns and/or ships of the CONCORD police force.

The legality of attacks on other players is governed by EVE's rules of engagement. The basis of these rules is the Security Status of the solar system in which combat

occurs. The rules are modified by other factors including membership in corporations and/or gangs, and previous illegal acts by the parties involved.

CAUTION: GRIEFERS



The universe is a dangerous place for new players. Some players will purposely antagonize new players by tricking them whilst the new player is mining or running missions. These griefers are often washed up players who can't win fights against skilled opponents. Be on your guard and only trust the people in your corp.

4.1.1 Criminal Flagging

You will be flagged as a criminal and lose Security Status for deliberately or accidentally attacking other players. This is subject to the rules in the following sections but may result in a response from CONCORD

CONCORD cannot protect the aggressed player, but will punish the attacker.

Stealing other player's loot from wrecks or jetcans does not flag you as a criminal to CONCORD, however, it will flag you as a criminal to the aggrieved player AND to their player corporation (but not non-player corporations and not to their gang) whom then has kill rights and can attack you for a limited time without being criminally flagged.

You may notice that if you attack NPC pirates, you will get an aggression timer for 15 minutes. This does not relate to actual players and does not stop you from docking or jumping. Just be careful that you know to whom/what you are currently aggressed with. Also note that NPC pirates (rats) and Concord will NOT attack you pod. Only other players can kill your pod.

4.1.2 Effects of System Security

Systems are rated with a security index and each player has a security rating. The player rating can be increased by killing NPC rats in asteroid fields but will decrease by committing illegal acts such as piracy. If the rating gets too low then the player will be fired upon if they enter high security systems.

Sec	Sec Desc	Player Rating Restriction*	System Notes
ALL	ALL	>-1.9	
1.0	High	<-2.0 cannot	There are no rats in asteroid belts and you cannot anchor cargo containers. Police and sentry guns are prominent
0.9	High	<-2.5	

0.8	High	<-3.0	Police and sentry guns are prominent
0.7	High	-3.5	
0.6	High	-4.0	
0.5	High	-4.5	No police but there are sentry guns. Players can be attacked and killed without CONCORD response unless at a gate/station
0.4	Low	-5.0 is outlaw	
0.3	Low	and cannot	
0.2	Low	enter any high	
0.1	Low	sec system	
0.0	Null		No system defences

Safe Empire Space (0.5-1.0)

Attacking another player will result in loss of personal Security Status. Near Space Stations and Jumpgates, sentry guns will open fire if you are within range of them (150km). CONCORD police ships will warp in and open fire on your ship. This is unlikely to be a prolonged process. You will be Criminally Flagged to everyone for 20 minutes.

Unsafe Empire Space (0.1-0.4)

Attacking another player will result in loss of personal Security Status, scaled by system security values and therefore less so than in safe empire space. Near Space Stations and Jumpgates, sentry guns will open fire if you are within range (150km). You will be Criminally Flagged to everyone for 20 minutes.

0.0/lawless space

Attacking another player has no repercussions. You will probably annoy the player, their corporation or the alliance they belong to. There are no police and no sentry guns. Revenge attacks are a distinct possibility. Please note that the client displays a rounded system security value for solar systems. The loss of personal Security Status is however governed by the system's True Security rating. You may therefore be in 0.01 security space rather than 0.0 and hence incur some security loss. BattleClinic has a tool that shows you the true security rating of a system.

4.1.3 Player Security Status and Bounties

Players with a Security Status of -5.0 and below are considered outlaws and can be attacked at any time without consequences to your Security Status. Note that having a bounty does not make a player an outlaw. Players with a bounty on their heads can only be attacked freely if their status is -5.0 or lower. Keep in mind that the displayed personal security rating value for another player is rounded while the Rules Of Engagement between players are based on actual values. A player showing a personal Security Status of -5.0 may well only have a status of -4.95 and may not be a valid target!

Note that the rules governing Status and Travel mean that outlaws can enter safe empire space only in a pod. New players are often excited at the thought of collecting a

bounty. However, you can legally attack players with a price on their heads in unsafe or lawless space only. There is a reason that they have a low status and bounty - approach them with caution.

4.1.4 Self Defence

You may always defend yourself if attacked. Returning fire will activate a short aggression timer, preventing you from docking or using a Jumpgate for up to one minute after the act.

If a player has stolen loot owned by you from a wreck or jetcan, you can attack them. If you attack, then they can return fire.

4.1.5 Special Rules

Membership in a Corporation

Members of the same [player corporation](#) (not the same NPC or starting corporation) can attack each other with impunity. Many players use this to hone their combat skills in duels with fellow members. Some corporations hold regular Frigate tournaments between members.

Members of a corporation that is in a sanctioned war with another corporation may attack - and pod-kill - their enemies, and vice-versa.

Membership in a Gang

If you join a [gang](#) with a member of a corporation that is involved in a war, you will be open to attack from the opposing corporation.

If your gang member is part of corporation A, at war with corporation B, members of corporation B may freely open fire on members of your gang. Gang members not at war with corporation B cannot pre-emptively open fire; they may only defend themselves if someone from B opens fire on the gang.

Gangs do not provide any immunity from Concord response. I.e. you cannot fire on other gang members if not at war or not in your corporation. You may remote repair them.

Aiding Criminals

Aiding a criminally-flagged player, by shield, armor or capacitor boosting their ship will temporarily give you their criminal status. If they would be attacked by CONCORD ships or sentry guns, you will be too. Further, I believe you will also lose standing as the criminally flagged player would.

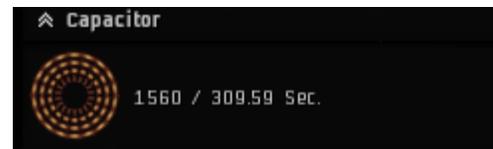
NBSI Policy

NBSI means "Not Blue Shoot It" If you wish to fly in zero-zero, you are likely to encounter players who have already "claimed" that space. On their overview, your ship will not have a little blue star next to it, which shows them that you belong to their corp or alliance. If you're not blue-to-them, they will likely shoot you, then shoot your pod, then loot your wreck, and some may do mean things to your corpse. Ewww.

4.2 Capacitor, Powergrid and CPU

These are the primary resources of your ship.

4.2.1 Capacitor



Every ship has a capacitor (a self recharging battery if you like). This capacitor is used up by activating many modules and activating your warp drive. It has a certain charge size and recharge rate that is dependent on the ship, your skills and any mods or rigs that affect it. At <5% and >95% the recharge rate falls off dramatically. Recharge rate is specified in seconds for the entire capacitor, so increasing the capacitor size automatically increases the recharge rate proportionally.

In general, every time you activate a module, or every time it begins another cycle (if on auto repeat) it will consume energy until you run out and there is no energy left in your capacitor, or your capacitor re-charge rate is high enough to keep the cap steady. You can determine the cap recharge of your ship from the fitting screen. You can see the Activation Cost again in the items show info. You must bear the activation cost in mind always when choosing and activating a module to ensure you never run out else you may be doomed as you have nothing left to protect your ship and have nothing left to fire back with either. Oh and yes, warping away takes cap...that you may not have. If you don't have enough, you may drop out of warp short of your destination. Don't soil your pod—watch your cap!

Capacitors in EVE behave the same as in real life. Well, there aren't any Abbadons in real life, but you get the idea. The cap recharge rate varies from this 'average' when the

capacitor is charged at different levels. When it is almost full, the recharge rate will be very low. A ship can recharge lots more than that, when the cap is at about 30-40%. It's like a real capacitor: 0-5% recharges really slow and so does 90-100%. Around 35% it recharges way more than cap/recharge time. Don't be afraid to use your cap, but don't use it unwisely.

If you have 3 modules fitted then you need to see their cycle time and activation cost to work out how much energy they collectively consume per second when activated. When weighed against your cap recharge, you can see how long your capacitor will last before it runs out which in the heat of combat (when most modules are active). A good trick is to run for the nearest asteroid belt, find a roid and start shooting one while activating different modules. You'll get a warning when you try to shoot the roid, but it's not like Concord minds you shooting at a piece of dead ore.

There are a number of skills and modules which increase your total capacitor size and also your cap recharge time.

Skills that affect cap the most:

- Energy Management Skill (increases cap capacity by 5% per level)
- Energy Systems Operation (decreases cap recharge time by 5% per level)
- Controlled Bursts (decreases activation cost of a hybrid/energy weapon turret by 5% per level)
- Afterburner (increases AB cycle time +10% per level)
- High Speed manoeuvring (-5% cap needs of micro-warp drive)

Modules that impact cap usage are:

- Capacitor batteries - Increases the capacitor size
- Cap boosters - injects power into your capacitor
- Cap rechargers - increases cap recharge rate
- Cap relays - increase cap recharge rate at the expense of shield strength
- Power diagnostics - increase cap size/recharge rate and gives other benefits
- Cap Flux Coils: Increase cap recharge, reduces the amount of cap you have
- Energy Vampires (NOSs): Steals your enemy's cap and adds it to your own

The above form the basic foundation of ship module selection as well as what you intend to do and what tactic you intend to use all have to be weighed when considering the fitting requirements and energy requirements of each module and your success or simple survival against your available skills to use such ships or modules.

4.2.2 Powergrid and CPU



Every module you fit onto your ship has a fitting requirement which can be seen when you right-click and select show info and Fitting tab on the module. You can see the different module requirements by browsing through the market as well and pressing the I (show info) icon on modules you do not own yet.

The powergrid and CPU is determined from the base amount your ship has available (you can see this on BattleClinic or in-game in your fitting screen) modified primarily by your Engineering (5% extra powergrid per level) and Electronics Skill (5% extra CPU per level) levels.

Every module you fit uses up some powergrid and CPU when it is loaded onto your ship and active (note you can load modules onto your ship but keep them offline so they do not use up powergrid or CPU - they will be greyed out on your ship control panel in space or have a red icon in your fitting screen). To activate them again you right-click and select put online or to turn them off put offline. You must have the available amount of CPU and powergrid to activate them however. If you do not, you will get an error message informing you how much grid or CPU you are short.

Powergrid and CPU

When equipping your ship, you must balance out what modules you can fit with the amount of powergrid and CPU available. You'll spend many hours at the ship fitting screen experimenting doing this, but it's a lot of fun and an interesting challenge. I suggest you do the same and start playing with different modules to see how the loadout can change according to the fitting requirements.



Reactor Control Units (RCU) and **Micro Auxiliary Power Cores** require Energy Management skills to use. Micro Aux Power cores are best used on frigates or small industrials. Use RCU's on bigger ships. The benefit "line" is roughly 100pg.



Power Diagnostic Units (PDU's) are EXTREMELY USEFUL modules that increase your powergrid, increase your shield hit points, decrease your shield recharge time...and might even mop your floor if you ask them nicely enough.



Co-Processors are modules that increase your CPU, and the skills that increase your CPU are Electronics, Electronics Upgrades (reduces CPU need for electronics upgrades), Energy Grid Upgrades (reduces CPU need for power upgrades), and Weapon Upgrades (reduces CPU need for turrets, launchers and smartbombs).



Capacitor and Cap Recharge: Every ship has a capacitor and cap recharge time. This is represented by the orange dots in the middle of the ship control panel. Your capacitor is used to determine how far you can warp and how much energy is available for any module that must be activated which has an activation cost.

Once your shield gets low or is gone you will start getting damage to your armor. Unlike shields, armor does not automatically regenerate.

If your shield and armor defences have broken down then you will start to incur structure damage, and once gone your ship will explode.

Tanking involves using your skills, modules and/or rigs to increase the defensive statistics of your ship. It comes in several forms such as increasing resistances to damage or removing damage with repair or booster modules. I won't go into it now but it is important to understand this term. See the Equipment section on [Tanking](#)

To tank shields you will want to concentrate on engineering skills. To tank armor you will need to train mechanic skills. It is good to build up both skill sets because you will fly different ships that tank differently and both will help your overall tanking abilities regardless. You don't "Tank" structure.

4.3 Shield, Armor and Structure

Defence

5 hp/s	[Shield Icons]			
1950 hp / 867 S	0%	20%	40%	50%
1969 hp	60%	35%	25%	19%
1953 hp	0%	0%	0%	0%
6308 hp effective				

Targeting (5x)

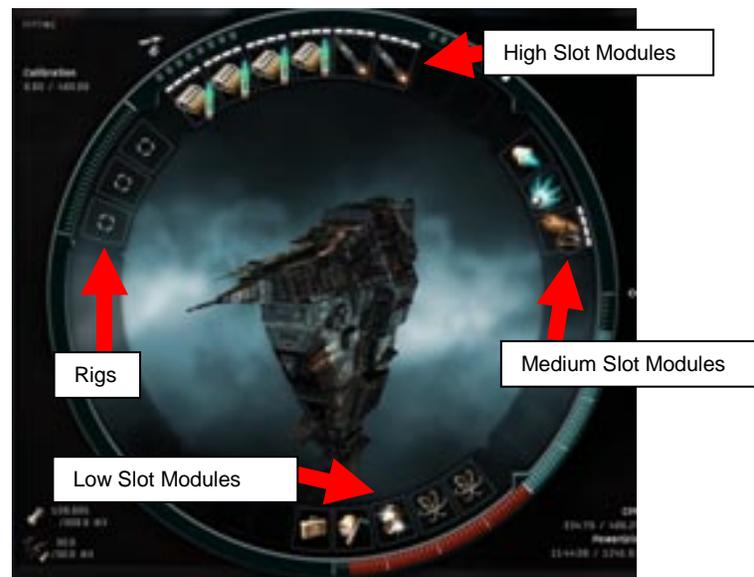
12 points	294 mm	51750 m
130 m	5	

Navigation

240 m/s	11,650 t	0.2736x
3.0 AU/S		

Your shield will protect your ship from incoming damage. It is energy based and so it recharges over time. In fact it's size and recharge rate concepts are similar to capacitor.

4.4 Modules and Rigs



Modules

We have mentioned modules. These fit into high, medium and low slots on your ships. Each will use some powergrid and/or CPU. Some modules are Active in that they use up capacitor when activated. Other modules are passive in that they are always turned on but don't use capacitor. Each ship is limited in how many high, medium and low slots it has available and also how much powergrid and

cpu it has available and thus fitting the right modules for the job is very important.

You can turn off modules in flight or in station so that they are not linked to the CPU and Powergrid and so don't use any ship resources. But to turn them back on will instantly use a lot of capacitor and your capacitor will need to be >85%.

Short section this, believe me there's a whole lot more. [See section on equipment.](#)



Rigs

You will also be able to install rigs onto your ship. There are three rig slots per Tech 1 ship and two per Tech 2 ship. The skills for rigs are usually a bit higher than modules generally and they are very expensive. Think of them as implants for your ship. Once they are installed they stay and die with the ship. You can remove them but they are destroyed in the process. They also don't use cpu/powergrid/capacitor as such. They will give a bonus to a particular ship statistic but all except one type (Energy Grid rigs e.g. Capacitor Control Circuit) will have a "drawback" which could be against any one ship statistic. They are used to specialise your ship to perform some tasks very well. Some skills can reduce the drawback of rigs by up to 50%.

4.5 Meta and Tech levels

Every piece of equipment and Ship has a quality level called "meta". The higher the level the better the item statistics are – and the more expensive they are. Initially all items were Tech 1, with subsequent versions of Eve, Tech 2 items/ships were introduced and now with Apocrypha there are Tech 3 ships as well.

4.5.1 Meta/Tech for modules:

Your standard module is tech 1 meta zero. There are then four other Tech 1 variations that increase to meta 4 - each with slightly better stats. They will cost more but you don't need any higher skills to use them and you can buy them off market.

Then you hit Tech 2 items, there is only one variation of these and are considered Meta 5. They are much better than Tech 1 meta 0-3 variations. They will often be of similar standard as meta 4 (sometimes same, slightly better or slighter worse) but probably cost less than meta 4 and may have slightly higher powergrid/cpu requirements but they have much higher skill requirements than the tech 1 versions. In the case of weapons they also allow you to use the tech 2 versions of ammo.

Now there is also another group of items. Meta 6-15 they cannot be manufactured or bought/sold on market. They are obtained by using LP points to buy from faction/corporation agents, dropped in DED's/plexes or bought from other players via contracts.

These items are usually better than lower tech 1 and tech 2 and generally referred to as faction/named items. They are all considered tech 1 and so have the same skill requirements as tech 1 items. However, because they are so effective with no extra skill requirement they are usually very expensive and rare. Below is a comparison of small shield boosters with vital stats.

T	M	Brief name	Boost /m	Cap/m	Pow	Cpu
1	0	Sm. Shield B I	690	600	2	25
1	1	Sm. Converse I	720	600	2	23
1	2	Sm. Neut. Sat. Inj. I	750	600	2	22
1	3	Sm. Clarity Ward	780	600	2	20
1	4	Sm. C5-L	810	600	2	21
2	5	Sm. Shield B II	900	600	3	29
1	8	Rep Fleet Issue	900	600	2	21
1	9	Dread Guristas	1125	600	2	21
1	11	Gisti – C-Type	1170	330	2	21
1	12	Gisti – B-Type	1230	360	2	21
1	13	Gisti – A-Type	1710	390	2	21

There may not be an item for ALL meta levels but there may be more than one type at the same meta. Example, in addition to Gisti there are Pithi and in addition to Republic Fleet there are Caldari Navy. They may not have the same stats even though they are the same meta level.

You can see that a Gisti- A-Type is amazingly good. In fact, you could use it in replacement of a medium shield booster and be 80% as effective at 20% of the cap cost and much less powergrid/cpu requirements. It is however, rare and expensive. I haven't seen one for sale but would expect that it sells for 20m+ ISK!

[See section on DED's and plexes](#) because you can sometimes get "small" meta 10/11 items as loot in level 1 and 2 static DED's/plexes.

Generally they compare as follows:

Attribute	Good	Better	Excellent	Best
CPU & Power Usage	T1	T1 M0	T2	Faction
Market Price (increasing cost)	M1->M4	T1 M1->M3	T2 / T1 M4	M6->M15
Performance	T1 M0	T1 M1->M4	T2	Faction
				M6->M15

4.5.2 Meta/Tech for Ships

Similar to modules, each ship will have a tech and meta level. Generally though, there will be just be the following:

Tech 1 meta 0 = your basic tech 1 versions
 Tech 1 meta 4 = named/fleet issue version
 Tech 2 meta 5 = the tech 2 variants
 Tech 3 meta 0 = the new Tech 3 variants

Your standard Tech 1 meta 0 ships are relatively cheap and easy on the skills. As such they are the mainstay of any fleet. For each hull class there may be several ships for each faction with different bonuses strengths/weaknesses and they will all be meta 0, but may require slightly higher skills to fly.

Named/Fleet issue are just hardier versions of the standard ships, and require the same skills to fly. However, they are extremely expensive, in many cases more expensive than the Tech 2 variants.

Tech 2 ships are generally tougher than the tech 1 equivalent with higher resistances, shield, armor, hull and better bonuses. They require high skills and are expensive compared to tech 1 meta 0. They are really focussed on performing specific roles very well.

Because of the cost differential, fleet issue and tech 2 are not necessarily "better" than your standard tech 1. What I mean by this is if just say you had 100m ISK. You could fit out a standard Heavy Assault Ship (tech 2) [70m ship+30m equip]. But for that same amount you could put together a winning fleet of say 6 well equipped tech 1 cruisers [6m ship and 10m equip] or two hot to trot Battlecruisers [30m ship +20m equip]. Both combinations might take some losses but ceteris paribus - they would probably win.

Tech 3 ships are new to Eve. They have lower skill requirements than tech 2, but you need extra skills in the sub-systems area to attach sub-systems. These ships are essentially a hull which you buy and attach sub-systems to. I.e. they are a modular design (not to be confused with modules).

The full details of tech 3 are still being discovered and more will follow.

4.5.3 Resistances

Both shields and armor have resistances. Resistances determine how much damage of a type (EM, Kinetic, Explosive and Thermal) is done to your shield and armor. This is a very important concept—learning to counter your enemy's damage type by using the appropriate resistance is superior in every way to just stacking raw hit-points onto your ship in the form of plates or shield extenders. By raising your resistances you reduce the damage you take towards either shield or armor, which in turn makes it

easier to repair the damage with Shield Boosters and Armor Repairers. It's a common mistake to think that the resistance increase given by modules is an absolute value, and that you can actually reach 100% resistance. The stacking penalty diminishes your resistance with each stack. Let's see an example:

Say your ship has an armor resistance to kinetic damage of 20%, and you want to raise that by using an Armor Kinetic Hardener I, which says it adds 50% resistance. However, the armor resistance now won't be 70%, it will be 60%. The formula that is used to calculate a resistance is the following:

$$\text{Resistance} = \text{Base Resistance} + (1 - (\text{Base Resistance})) * (\text{Module resistance})$$

So in our example: $0.2 + (1 - 0.2) * 0.5 = 0.6$

Mind that all the modules that increase resistance have to deal with a stacking penalty if you use more of one type, like 2 EM Hardeners, or 3 Thermal Hardeners. As an example, if you use 2 EM hardeners and 1 thermal hardener, only the EM hardeners have this penalty.

		 Electromagnetic (EM)	 Explosive	 Kinetic	 Thermal
 Shields are		Weak against	Strong against	Strong against	Weak against
 Armor is		Strong against	Weak against	Weak against	Strong against

4.6 Stacking Penalties and Benefits

Another key thing to know about is the concept of Stacking Penalties and Benefits. For many modules and rigs a penalty will apply when using more than one item that affects the same attribute (e.g. resistance, tracking speed, powergrid output etc). At the same time, stacking modules will provide more than just an additive benefit.

4.6.1 Stacking Penalties

Thanks to Aenigma for working this out and if you want to understand the detailed mathematics then see his guide in the BattleClinic forum.

Not every module is affected by stacking penalties but a lot are. The description of the module will state if stacking penalties apply.

The calculation is at once complex and very simple. Take the example of the heat damage resistance with shield resistance mods on a Typhoon battleship.

Base Thermal damage resistance = 20%
 Active Thermal shield resistance mod = 50%
 Active Invulnerability field = 25%

With 1 Thermal shield mod there is no penalty and resistance will be:

$60\% = 1 - (1 - 20\%) * (1 - 50\%)$
 -- giving a 40% increase on the base resistance for your 50% mod. Yes this is correct; a 50% mod will only add 50% if there was zero base resistance to start with.

With 1 thermal shield mod and invulnerability field:

$69\% = 1 - (1 - 20\%) * (1 - 50\%) * (1 - 25\% * 87\%)$
 --- giving only 9% increase for the second 25% mod

With 2xThermal shield mods and invulnerability field:

$81\% = 1 - (1 - 20\%) * (1 - 50\%) * (1 - 50\% * 87\%) * (1 - 25\% * 57\%)$
 --- giving only 12% increase by adding the third 50% mod.

You will notice then that the calculation will order the modules into most effect to least effect when putting on the penalty. You will also notice the sliding scale which actually means that any more than 3 mods are generally not worth it:

No. Of mods	Approximate Stacking Penalty adjustment
1	100%
2	87%
3	57%
4	28%
5	10%

A fourth resistance mod @50% would only add 4% resistance to get to 85%. You can never reach 100% resistance.

In the case of a Gyrostabiliser which increases damage output (e.g. 10%) but also suffers from stacking penalty the calculation may work as follows. Assume your turret damage multiplier is x4:

One Gyro:
 $4.4 = 4 * (1 + 0.1)$
 Two:
 $4.78 = 4 * (1 + 0.1) * (1 + 0.1 * .87)$
 Three:
 $5.06 = 4 * (1 + 0.1) * (1 + 0.1 * .87) * (1 + 0.1 * .57)$

4.6.2 Stacking Benefits

So there is a penalty for having more than one mod that affects a ship statistic for many mods.

If the item does not suffer from stacking penalty then you can get significant benefits from stacking several mods, but even if it does have stacking penalty you will often get significant benefits from stacking.

Now although resistance mods get a stacking penalty, rechargers don't and since the effects are multiplicative, you get even more benefit. Put on one shield recharger @20% and you will increase the rate by 20%, but put on two and you get 44% increase, three and you now have 72.8% (1.2^3). Same goes with cap rechargers.

Shield extenders will increase the HP's and automatically increase the recharge rate of your shield. Similarly, cap batteries will increase capacitor level and automatically increase the recharge rate of your capacitor. Obviously there is no equivalent for armor. They do this because recharge rates for shield and capacitor are stated in seconds for entire recharge so making the amount to recharge larger will automatically increase the amount recharged per second.

Looking at shield extenders, say it increases your base 5,000 HP by 1,000 HP. This is a 20% increase in base shields. Your shield recharge rate effectively increases by 20% as well. Put on two, increasing shield by 2,000 HP (40%) and your recharge rate effectively increases by 40% as well. Three and you get 60%. So these aren't multiplicative but do give a double whammy effect. Same goes with cap batteries.

But you can still see that with the gyro the effects are still multiplicative even though stacking penalty applies. With three gyro's, you are getting 26.5% benefit. If stacking penalty didn't apply then the benefit would be 33.1% (i.e. 1.1^3). If it was just additive without penalty then the benefit would be 30%.

4.7 Ammo and Reloading

Every turret or launcher has a 'magazine' size (volume) and indicates how many rounds it can load into the turret at once or missiles (lasers require no ammo - only a crystal). Each turret will only load ammunition of the right size (S, M or L) which is indicated on the turret info.

In the case of all turrets you must consider the damage type, the crystal or ammo selection, and the range modifier. First, you'll need to know how shield and armor penetration work.

Shield and armor have a damage resistance which indicates how much of which type of damage is absorbed on each damaging shot. This obviously affects your ammo, drone, and missile choice. Generally, Shields are strong at absorbing kinetic and explosive damage and relatively weak at absorbing thermal and EM damage. Armor is strong at absorbing EM and thermal damage while weaker at absorbing kinetic and explosive damage. Generally, your ammo selection must take the above into consideration and also the range modifier which indicates the penalty / modifier when using that ammo against your turret max range. Note that if you use Hybrid or Energy weapons, you'll deal Kinetic and Thermal and EM and Thermal damage respectively. Only Projectile Turrets and Launchers have ammo that can deal any type of damage. You can also augment your damage types by using drones, which we'll cover later.

Important: Your target's resistances are an important consideration as well. As you gain experience, you'll learn what ships have high resistances to what types of damage you'll plan your ammo, missile, and drone choice accordingly.

Missiles have various flight times and a speeds which determines their range. Each type of missiles can only cause one type of damage (explosive, kinetic, thermal, or electromagnetic). Defender Missiles have a chance to destroy another missile and will only launch when a missile is fired at you. They will also only track the nearest missile locked onto you so firing successive defenders will only track the same missile.

As noted earlier, FoF (Friend or Foe) missiles will target at anyone who is causing aggression to you (jamming or scrambling you or firing at you). They are best used when you are jammed and can't get a target lock.

Also of note are the Weapon Upgrades, which are modules that increase both the damage output and rate of fire of a weapon. Hybrid turrets, projectile turrets, energy turrets and missile launchers all have their own upgrades, which are fitted into low slots. They do however have a stacking penalty

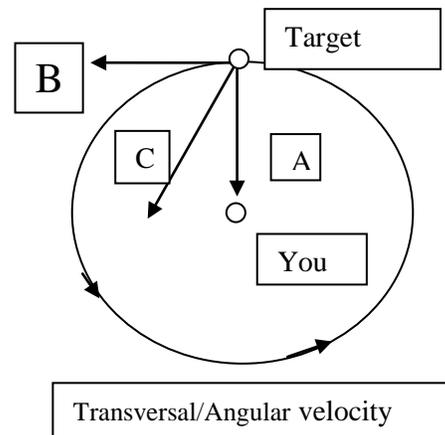
4.8 Tracking, Optimal Range, Accuracy Falloff, Signature Radius and Targeting

4.8.1 Tracking

Transversal Velocity: This is the "velocity" of the target relative yourself from an angular perspective. Another way to put it is the speed at which the target crosses your path. It is displayed in m/sec. Assume you are stationary and a

target ship has a "speed" of 1,000m/sec, take the following examples:

- A) A ship flying directly to you will have zero transversal velocity regardless of actual speed because there is no sideways/angular direction, guns don't need to change direction ($\sin 0=0$).
- B) A ship ORBITING you will always be facing at a 90 degree angle to yourself, and hence their speed is entirely directed sideways to yourself and transversal velocity = speed of ship ($\sin 90=1$) and
- C) if the ship is heading towards you but 45 degrees to the left, then their transversal velocity will be 700m/sec ($\sin 45=.7*1000\text{m/sec}$) approx. Use 30 degree angle and you get 500m/sec ($\sin 30=.5*1000\text{m/sec}$)



Now actually there is another thing called **Angular Velocity**. You can include this rather than the transversal velocity on your overview. It is much simpler to relate to (though it is effectively the same thing as transversal but

with distance taken into account). It is displayed in rad/sec and is the circular movement of the target relative to you.

Angular Velocity = Transversal Velocity/Distance

Time for a 1 full orbit = 2π * Angular Velocity

But how does this play an important role in combat?

Tracking Speed: Every gun has a tracking speed. This is the speed at which it can change direction and therefore track a moving target. It is a statistic measured in radians/sec. This is why we use angular velocity of the target to compare. If you remember your circle geometry / trigonometry you will know that 1 radian is just under 60 degrees (radians = degrees*Pi/180). A turret that has a tracking of 1 rad/sec will be able to cover 60 degrees within a second. Your guns are usually much less than this. For Example the 125mm Projectile guns have a tracking of .4 rad/sec (23 degrees/second). The bigger the gun, the slower the tracking, so for example the 720mm Medium Projectile Artillery has a tracking of only 0.02 rad/sec which is a mere 1.15 degrees/sec

If your guns tracking speed stat is .1 rad/sec, then if the target is 10km away, it needs to have a transversal velocity of **less** than 1,000m/sec (angular velocity = 1000m/s / 10km = 0.1 rad/sec) for your gun to track it. If the ship is only 2km away then it needs to have a transversal velocity of less than 200m/sec for your gun to hit it (angular velocity = 200m/s / 2km = 0.1 rad/sec)

Orbiting will most of the time assist your tracking because by its nature, it attempts to keep the target at the same angle relative to your ship and hence the target will have a lower angular velocity and your guns don't have to change their direction as quickly. One other thing here is that the actual ship orientation isn't important as Eve works on vectors. So if you do a 180 degree turn on a dime, that won't mean your guns need to change 180 degrees as well. Your guns will track according to your angular velocity versus the target. Although not necessarily realistic in this sense, it is how it works.

In summary, if you want to maximise your chance of avoiding being hit, approach **at an angle** as **fast** as you can and orbit as **close** and as fast as you can. If you want to maximise the damage you put on the enemy, you will want to approach the target directly or fly away from them and/or then orbit a reasonable distance so that the enemy target always has a low angular velocity.

From the examples above, a 30 degree angle of approach should be a minimum angle until you get to optimal (see below), but you may want to start off at a 45 degree angle

and then go to 30 degrees when you halve your distance to the target. This is more important when in small ships.

Now keep reading because tracking is combined with Signature Radius to determine the % chance of hit.

4.8.2 Optimal Range, Accuracy Falloff

Assume both you and your target are stationary and thus disregarding transversal/angular velocity and tracking speed.

Your gun will have the best chance to hit and largest damage from 0m all the way up to the Optimal Range. I.e. 0m -> Optimal = 100% hit and damage

Your gun's effectiveness/Accuracy will decrease the further the target is away from you to the point where Optimal + Accuracy Falloff will be 50% effective and at Optimal + 2*Accuracy Falloff will not hit at all.

Assume optimal range is 5km and Accuracy Falloff is 10km. At 0-5km ~ 100%, at 10km ~ 75%, at 15km ~ 50%, at 20km ~ 25% at 25km ~ 0%. (These are not definitive ratio's, merely expected)

Disregarding transversal velocity, it is best to keep your target within 0km -> Optimal. With a choice of multiple similar targets, you would generally go for the target that is closest to your optimal first. Angular velocity and tracking speed may change this because with fast frigates, your optimal may in fact not be the best as your guns still can't track fast enough, so you need to take them out much further away when their angular velocity is a lot lower.

One thing I will point out here is that there are many things that can be done to help your attack damage/defence relating to this. Gunnery and navigation skills are important and there many modules that can help - [see section on Equipment](#).

4.8.3 Incorporating Signature Radius

This is important for both guns and missiles. For both the signature radius of the ship is the fundamental element and note that AB's and MWD's increase the signature radius of your ship significantly.

Gun Turrets

For guns Signature Radius it is combined with tracking to modify your chance to hit.

Assume your target is a Rupture Cruiser which has a signature radius of 130m and assume its angular velocity is .02 rad/sec

Signature resolution and tracking for example guns:

Small Projectile = 40m radius, .07 rad/sec
 Medium Projectile = 125m radius, .02 rad/sec
 Large Projectile = 400m radius, .01 rad/sec

The bonus/penalty to chance to hit is:

$(\text{Angular V} / \text{tracking speed}) * (\text{Target Signature Radius} / \text{gun signature resolution})$

Small: $\min(100\%; (.07/.02) * (130/40)) = 1138\% = 100\%$
 Medium: $\min(100\%; (.02/.02) * (130/125)) = 104\% = 100\%$
 Large: $\min(100\%; (.01/.02) * (130/400)) = 16\%$

You can see that fitting the right guns for the right enemy is important. Large guns against frigates will not hit very often even if their transversal/angular is lower than the gun because they are webbed or flying towards you.

Launchers

Missiles/Rockets/Torpedoes are a bit simpler. They don't have tracking so they always hit (assuming they can travel to the target = Velocity * flight time). The statistics are the "explosion radius" and "explosion velocity" and the formula works to decrease the damage of the payload.

Rocket = 25 damage, 20m/2,000m/s explosion radius/velocity
 Light = 75 damage, 50m/1,750m/s explosion radius/velocity
 Heavy = 150 damage, 125m/750m/s explosion radius/velocity
 Cruise = 300 damage, 300m/500m/s explosion radius/velocity
 Torpedo = 450 damage, 450m/250m/s explosion radius/velocity

The formula is I believe:

$Md * \min(1; (Sr/Mr) * (Mv/Sv))$

Where:

Min = the lower of.

S = Ship, M = Missile

r = signature/explosion radius

v = speed / explosion speed

d = damage output

The explosion velocity would not normally have that much of an impact because most ships will be slower than the missile explosion velocity. However, with an AB or MWD then they could be a lot faster. A MWD actually increases the signature radius of the ship significantly which counterbalances this to a large extent.

Using the Rupture cruiser example again and assuming it is within range and with a speed of 300m/s:

Light = $75 * \min(1; (130/50) * (1750/300)) = 75$
 Heavy = $150 * \min(1; (130/125) * (750/300)) = 150$
 Cruise = $300 * \min(1; (130/300) * (500/300)) = 216$
 Torpedo = $450 * \min(1; (130/450) * (250/300)) = 108$

Using a Rifter frigate as an example, with 35m sig radius and normal speed of 400m/s.

Light = $75 * \min(1; (35/50) * (1750/400)) = 75$
 Heavy = $150 * \min(1; (35/125) * (750/400)) = 79$
 Cruise = $300 * \min(1; (35/300) * (500/400)) = 44$

If the Rifter had a MWD on and hence had a speed of 2000m/s its signature radius would increase to 175 and so the calcs would come out as follows:

Light = $75 * \min(1; (175/50) * (1750/2000)) = 75$
 Heavy = $150 * \min(1; (175/125) * (750/2000)) = 79$
 Cruise = $300 * \min(1; (175/300) * (500/2000)) = 44$

Don't be too concerned about the math but understand the concept - it is important to have the right missile for the job. Bigger is not necessarily better.

This needs to be reviewed for the latest patch where it is believed speed modules will have a greater impact on signature radius. Further, since larger missiles can't actually go as fast as a frigate with a MWD, I question as to whether they would always be able to hit anyway.

To help with this are:

- skills obviously: (Guided Missile Precision and Target Navigation Prediction)
- Target Painters: Increase the signal radius of the target, which effectively makes it a "bigger" target and hence easier to hit because requires less tracking/accuracy – These do help but are underpowered. Good for missiles, but for guns better to have a tracking computer.

4.8.4 Targeting Range/Number/Speed

Not much to this. Each ship has a base targeting range, can have target lock on a maximum number of targets and will have a base targeting speed. Skills and "signal amplifier" mods can increase your targeting range. Maximum targets are limited by your ship – an Industrial may have a maximum of two targets, whilst a BS may have a maximum of 7 targets. Your skills in Targeting can only increase the number of targets to the maximum of the ship. Finally, targeting speed is also based on the ship type but can be increased by skills and mods.

4.9 Electronic Warfare (EW)

Electronic Warfare (EW) is a fundamental part of combat in Eve and one of the most powerful tools if handled correctly and as part of a co-coordinated attack or defence. EW has now entered the realm of specialized EW pilots, aside from warp disruptors and webifiers, meaning that a new player will need to focus hard on training to become adept quickly. EW is actually different types of attacks on other ships which affect ships:

- sensors (targeting or range) bursts, jammers, sensor dampers
- weapon turrets (tracking, range) weapon disrupters
- cap (capacitor power) energy drainers like Nosferatu's

4. impulse speed (speed) webbers
5. warp engines (warping) warp scramblers

Most EW modules are mid-slot except for energy vamps (Nosferatu's or Energy Drainers) which are high slot. Although there are other assistance/amplifier mods which may fit in low slots. Because of this reliance on medium slots the most popular EW ships are the Caldari (e.g. blackbird, scorpion). Effective EW can, of course, be used in other ships. Caldari ships have excellent EW abilities, but the trade-off is they'll go into a fight without much protection due to the slot configuration. Fly with friends if you're doing EW!

Basic EW skills required include Electronic Warfare, Propulsion jamming, Signature Analysis, Sensor Linking, and Weapon Disruption.

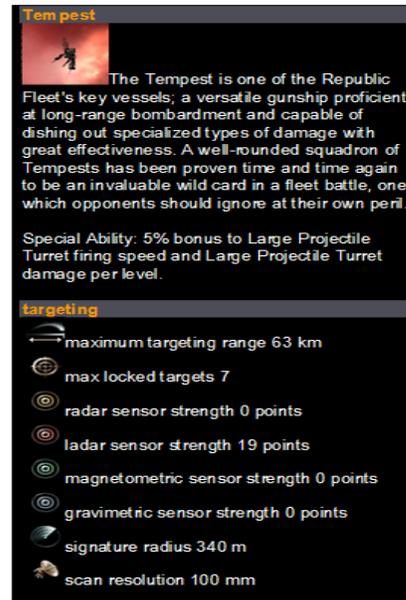
See the section on [Equipment](#) for details of all the EW mods.

If a ship breaks your jam either jam again with more jammers, fight another way, or tactically retreat. Some of the best EW ships are the Griffin (4 Medium slots), the Arbitrator, the Blackbird, the Scorpion, the Rook and the Falcon. There is no other T1 cruiser that can match the Blackbird as an EW ship, and no battleship is as good at EW as the Scorpion. The Rook and Falcon are outstanding EW ships but this is a new player guide, so you won't be in them for a while. EW ships are meant to support an attack on another ship with its jamming modules, Long-Range Missiles, and Warp Disruptors. You want to stay away from weapons that consume much energy, as you want all the energy for jamming. You also might consider flying Heavy Assault Cruisers and Interdictors.

4.9.1 Electronic Warfare Jammers

In order to understand jammers, you should first understand how ship sensors work. Every ship has sensor strength (you can find this in the show info on ships and attributes column). This sensor strength is unique to each race so most ships only have one type of sensor. Example: Minmatar ships have a LADAR sensor system and a Tempest class battleship has LADAR strength of 19.

ECM's will generally focus on one specific sensor system as main and hit it for 3.6 points and then 1/3 the effect on all other sensor systems (1.2 points each). Currently, as long as your sensors are 1 or more in strength, you can still lock someone (provided they are in range)

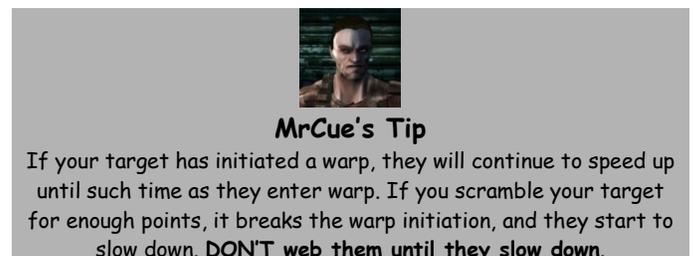


Example: Per the Tempest Battleship with a Ladar sensor strength of 19 points, an enemy or enemies would need to throw on 6 Ladar ECM's to jam it and many more if not of that sensor system. Smaller ships obviously are a lot easier.

For an increased boost to your sensor strength, it's advisable to look for Tech II versions of the Sensor Backup Arrays and ECCM Sensor Boosters

4.9.2 EW with Stasis Webifiers

Despite the fact that they reduce speed, they do not prevent someone from warping away and in fact can actually *help* a target go to warp faster. Be careful about webbing really large ships like freighters—you might accidentally help them get away!



4.9.3 Countering EW

There are modules that counter all the above in many different ways. The MAIN ones are sensor strength boosters, sensor boosters and warp core stabilizers. Most ECCM works against EW in a 2:1 ratio, you will need two ECCM modules to counter 1 EW module. In the case of a Warp Scrambler which jams your warp core, a Warp Core

Stabilizer will add +1 to your warp core strength and as long as your warp core strength is 1 or more, you can warp away.



The seemingly endless smack talk about warp core stabs begins with an aggressor complaining that his prey got away because the prey fitted stabs. The aggressor complains bitterly—maybe even posts on some forum, whining and calling the prey a “coward.” Sheesh. It seems to us at BattleClinic that if the Game Developers put a module in the game, players should feel free to use it without smack from sore losers.

5 Ships and Equipment

In the following sections I describe some main ship equipment and concepts. You will probably want to experiment with your ship fittings so browse load out forums and also get EFT – a free ship fitting program.



A useful tool: The BattleClinic ship loadout screen

Remember that the meta level of the equipment can significantly improve your abilities not just in that the higher the meta the more effective the item is, but also because the higher the meta the lower the power/cpu requirements (except tech 2 which is usually higher). This often means that you can fit more equipment that is power/cpu intensive.

Be aware of the skills required to use the equipment and also note the power/cpu requirements.

In the latest patch, you can group weapon mods such that they all activate simultaneously rather than activating each one individually.

5.1 Ships

The purpose of this section is to outline the main ship types. There is no “best” ship and bigger is not necessarily better. It is important that you don't rush into bigger ships just because you have trained the pre-requisite “spaceship

command” skills. You could train to fly a battleship pretty quickly, but if you haven't the skills to fit the appropriate equipment your expensive Battleship will be space dust pretty quickly.

5.1.1 Ship Variations

There are the following hull classes with tech 1 and tech 2 variants and capital ships:

Hull Class (Tech 1)	Role (Tech 2)	Role (Tech 3)
	Shuttles	
	Rookie Ships	
Frigate	Assault Ship Covert Ops Electronic Attack Ship Interceptor Stealth Bomber	
Destroyer	Interdictor	
Cruiser	Heavy Assault Ship Combat Recon Ship Force Recon Ship Heavy Interdictor Logistics	Modular Cruisers
BattleCruiser	Command Ships	
Battleship	Black Ops Marauder	
Industrial	Transport	
Mining Barge	Exhumer	
Freighter	Jump Freighter	
	Capital Ships	
	Capital Industrial	
	Carrier	
	Dreadnought	
	Mothership	
	Titan	

5.1.2 Standard Ships

Shuttle

Shuttles are generally cheap and as they have no module/rig slots, they should only be used for getting from A to B quickly. They are found in most systems, so you can buy one on the fly just for one particular trip, then sell it. They engage to warp very quickly so they are almost impossible to target (unless you're on autopilot, which you should almost never be on). They have a small cargo hold and when repackaged, often they can be carried in a larger ship's cargo hold.

Rookie Ship

You get them free and they are pretty much useless after your first week in game. Well, maybe as a shuttle.

Frigate (ff)

Very cheap, fast and manoeuvrable, they are very good tacklers (webbers/scramblers) in PvP because they can get in close and avoid larger ships guns. PvE, they will

suffice for level 1 missions or DED's and ratting in high sec.

Assault Ship – tough and hard hitting fighter
Covert Ops – Cloaking/Scanning abilities cool – not for fighting
Electronic Attack Ship – ECM, vampire and target painting specialist
Interceptor – The best tackler (webifier/scrambler)
Stealth Bomber – Cloaker. Fits cruise missiles! A deadly weapon against BC and BS ships.

Destroyer (Dessy)

Mostly good as a ff killer in PvP it isn't anywhere near as tough as a cruiser and not fast/agile enough to avoid enemy fire like a frigate. It should be used for support rather than hard hitting. In PvE it is solid for Level 1 missions and level 2 DED's whilst salvaging at the same time. It is also a great dedicated salvage/looting ship.

Interdictor – Interdiction sphere launcher (null sec use only)

Cruiser

The mainstay and workhorse of most fleets in PvP and good for solo PvP the cruiser is a tough adversary for its cost and can perform multiple roles in combat which make it a very versatile ship. In PvE it can run level 2 missions and level 3 DED's. Possibly level 3 missions if setup well with high skills.

Heavy Assault Ship – Tough and hard hitting fighter
Combat Recon Ship - Electronic
Force Recon Ship - Electronic
Heavy Interdictor – like the destroyer version but bigger/tougher
Logistics - Electronic

BattleCruiser (BC)

These ships are Cruiser killers in PvP. At half the cost, my belief is they are better than the Tech 2 Cruiser - Heavy Assault Ship. Can do level 3 missions and level 4 DED's in PvE. Can assist well in level 4 missions but dangerous to attempt solo. It an efficient ship for level 2 missions because it can use a few slots for salvaging/looting mods.

Command Ships – Gives significant bonuses to fleet operations, it is a support ship but is tough enough to hold its own in combat.

Battleship (BS)

The tank/artillery of standard PvP, it is slow but has a great sniping range a lot of damage output and the ability to tank a lot of damage. It can be vulnerable to ff's and short range cruisers without a good drone and missile compliment. In PvE it can run level 3's solo easily and level 4's well in a small fleet. It can solo level 4 missions but you will want high skills in most areas.

Black Ops – less powerful, but can cloak and has a jump drive.
Marauder – The most powerful and toughest non-capital ship in the game. They have less hardpoints but get 100% bonus to damage.

Industrial (Indy)

A trader's ship. Mainly used to transport items and even small ships. It is slow and has limited defensive capabilities. Starting at around 2k m³ the best Indy with maxxed out mods/rigs/skills can hold 27k m³.

Transport – Tougher and faster it is essentially a hauler for low-sec

Mining Barge

Specifically designed for mining they are slow and have limited defensive capabilities but they have a decent cargohold and the ability to fir strip miners

Exhumer – Generally double the cargo, better bonuses and greater defensive capabilities.

Freighter

These ships are almost capital ships but not quite. They are huge, very expensive and very slow but they do hold about 25 times what a maxxed out hauler can.

Jump Freighter – holds less- about 10 times hauler but does have a jump drive.

5.1.3 Capital Ships

Don't expect to get into these anytime soon. Not only are they amazingly expensive but they require significant skill pre-requisites. They are often owned by corporations rather than individuals as they are expensive and by themselves they are vulnerable and not particularly useful without multiple gang members in support. They are designed to support large fleet operations. They all fit jump drives.

5.1.4 Tech 3 Ships

As mentioned these are new to Eve with Apocrypha and are a modular design allowing many combinations by attaching sub-systems. Skill requirements are less than tech 3 but you will need to have skills for each of the sub-systems you want to attach. There are separate skills for each of the races:

Subsystem Skill	Prerequisites
Propulsion	Navigation V
Offensive	Gunnery V Missile Launcher Operation III
Engineering	Engineering V
Electronic	Electronics V
Defensive	Mechanic V Shield Operation III

Intelligence and Memory are the attribute determinants.

Note that if the ship is destroyed whilst you are in the ship, you will lose one level in a random sub-system skill. So if you have four sub-system skills at level 3 and one at level 5, one of these will drop a level to level 2 or 4 respectively. They are all level 1 skills and thus the maximum skill points you will lose is 210,745 (level 5 – level 4) which with reasonable attributes equates to about five days training.

This can only be avoided by abandoning ship before it explodes which then gives the enemy the opportunity to capture the ship!

Currently, Tech 3 ships are cruiser size. They are based on Sleeper technology which can only be found in unknown space accessed via wormholes. This includes both the materials and the Blueprint Copies.

More details on tech 3 will be incorporated as the full scope of these ships are realised.

5.2 High Slot Modules

Each ship will have a specified number of high slots available, but there will also be a restriction on the number of high slots that can be used for turrets and Launchers. Modules not considered turrets or launchers (other) can be fitted to the maximum of the high slots available.



Human weapon progression through the ages

5.2.1 Gun Turrets (turret)

Depending on your race and ship bonuses you will use energy (lasers), hybrid or projectile turrets. Each has advantages and disadvantages. You have probably noticed that 2 of the races (Caldari and Gallente) specialize in Hybrid weapons, while the Amarr specialize in Lasers, and the Minmatar specialize in Projectiles. You can learn the skills for any type of turret weapon, but you should also consider that most ships give specific bonuses to types of weapons. Don't put blasters on a ship that gets bonuses for lasers! The Hybrid, Projectile and Laser Turrets come in four sizes, Small for Frigates, Medium for Cruisers and BattleCruisers, Large for battleships, and Extra Large for capital ships like dreadnoughts and (shudder) Titans.



Projectile

Projectile turrets are found in two basic varieties: Autocannons and Artillery. Both have the advantage that they use no capacitor and you can use ammo that does different kinds of damage and range. Autocannons are short range, fast firing guns, with reasonable tracking speeds, which don't require much CPU and Powergrid to fit. Artillery is the opposite of the Autocannon. Artillery are long range and slow firing guns, which don't work at close range. Their damage output is decent.



Hybrid

Hybrid weapons, like Projectile weapons, come in two varieties: Railguns and Blasters. Both use ammo that do two types of damage. Blasters are the guns for extremely short range, and have superb tracking and damage when compared to Autocannons. They do, however, use capacitor and are more difficult to fit CPU and Powergrid wise. Railguns are in good demand around the galaxy, since they offer a good medium to long range, but with fewer problems at medium range than Artillery and better damage output too. One of the drawbacks is that they need far more CPU.



Energy/Lasers

Like Hybrid turrets they can only deal two types of damage: Electromagnetic and Thermal. However, the Tech-1 crystals used to focus the laser beams never deplete! Lasers are sometimes preferred for ridding because the T1 crystals don't get used up. Of course, that changes when pilots move to "Tech-2" stuff, because T2 crystals get depleted and eventually destroyed during use, but that's way down the line for you, the new player.

All lasers have the same big drawback. They use large amounts of capacitor and require large amounts of Powergrid to fit. They come in two varieties as well: Beam Lasers and Pulse Lasers. Beam lasers are the medium to long range variant of the lasers. Though they have slightly less range than Railguns and Artillery, their damage output and their tracking speeds are higher. Pulse Lasers are the short to medium range guns, which have a good tracking, a good damage output and are preferred among most pilots that use lasers, because their fitting requirements are less harsh than that of some Beam lasers and they tend to fit the Amarrian strategy of hitting hard and hitting fast.

Some general points on Gun Turrets

- Long range will usually have higher damage output but will have a slower refire rate and slower tracking.
- The type of ammunition used will affect the optimal range and determines the "base" damage output which the turret type then multiplies (e.g. 5x base). The Gunnery Skills category will improve all gun turrets performance.
- Projectile and hybrid guns can hold a certain number of charges. Be aware that the larger the gun, generally the less ammo it will hold, so more frequent reload, which in turn reduces the damage output you get. E.g.: 1400mm projectile gives only marginally more damage than 1200mm due to more frequent reload.

5.2.2 Missile Launchers (launcher)



Consisting of Rockets, Missiles (light, heavy, cruise) and Torpedoes. All races use these though some more than others. The launcher type determines the refire rate. The ammunition type will determine the damage output and max distance. The Missile Launcher Operation skills category will improve all launcher performance.

- Defender missiles will take out any incoming missile and can be used on most launchers but they will only be fired at the rate of the launcher they are fitted to.
- Friend or Foe missiles (FoF) don't require you to target a specific enemy; they will seek out enemies within range. These are handy if you can't get target lock easily (e.g. being jammed). They are also good against drones in PvP because they are often hard to target.
- Otherwise, all rockets, missiles and torpedoes require target lock. Each has only one damage type.

5.2.3 Other High Slot Modules



Neutralisers/Vampires (other)(EW):

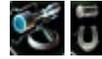
Neutralisers Suck energy from enemy ships (neuts) and vampires take less but add some of that to your own. They are very dependent on range from target, so better for up close fighting. These are good for use both in and against ships with high cap usage. Vampires are good if your ship is cap intensive. Neuts are better if it's not.



Transfer arrays (other)(gang): Provide support to gang members by taking capacitor from your ship and boosting/repairing fleet members' shields/armor/capacitor. These are also quite range dependent so you need to keep close to your ship mate. They are invaluable when in a fleet operation so that one person can take the aggro and tank indefinitely whilst another person remote reps the tanker and other fleet members lay out damage.



Smartbombs (other): Essentially these make your ship a living bomb. They fit into high slots like launchers but don't fire any charges (they are the charge and the launcher in one). They throw out damage in a sphere around your ship but use a lot of capacitor. Be aware that anything within the short range (3km for small smartbombs) will incur damage regardless of whether friends or foes. They can be used in high sec but beware unintended damage to non-corp players or you will get a visit from CONCORD. They are widely used to protect against multiple drones in PvP. A small smartbomb will take out scout drones very quickly.



Salvagers (other), Tractor Beams (turret):

These modules will allow you to salvage wrecks or tractor in cans/wrecks. They have very low skill requirements. See also section on [Salvaging](#).



Cloaking Device (other): Like the thought of being a covert agent? These mods allow you to cloak at will and be undetectable. There are a few caveats with these mods which we examine in the [Salvaging and Cloaking](#) section. They are mostly used when exploring, scanning, scouting or just generally traversing low-sec safely. You will need Electronics to 5 just to get the Cloaking skill.



Probe Launchers (launcher): Used for exploration and scanning down other players these mods use probes as charges. See section on [Exploration and Scanning](#). Many skills are involved to use them properly.



Interdiction Sphere Launchers (launcher): Can only be used in null-sec space and with specialised tech 2 ships. Similar to scan probes in nature, the launched probes last for a few minutes and create a warp disruption sphere of around 20km around the probe. Any ship that passes into the sphere cannot engage warp.



Mining Lasers/Strip Miners (turret): Used for mining, the lasers can be used on any ship that allows turrets whilst strip miners can only be used on barges/exhumers.



Drone Link Augmentator (other): Allows control and bandwidth of one extra drone

5.3 Medium/Low Slot Modules

These modules do not outlay damage, but they have many roles so each type needs to be explained. Some modules have low and medium slot versions e.g. tracking computer (med) vs. tracking enhancer (low). We have identified whether (mid) or (low) slot and also we have identified if they are considered Electronic Warfare (EW) modules. The [EW setup](#) section will refer to these.



Scripts for some mods: Some modules can be loaded with scripts similarly to ammunition and can be fitted/removed in battle (but they do not expire/used up). The module will state whether it can be loaded with a script that will focus that module on a specific task. E.g. A Tracking Computer increases tracking and optimal range by 10% and 5% respectively. Loading a tracking speed

script will change the stats to 20% and 0% respectively. An optimal range script will change the stats to 0% and 10% respectively. Since they can be changed in battle they are very effective for adapting to new threats/situations.



Boosters/Repairers (mid/low): Shield Boosters, Armour and Hull Repairers can be fitted and so you can keep your ship in top shape whilst in a mission. They use a lot of cap (Hull repairers are just slow). Your shields and capacitor will recharge automatically if you dock at a station with repair facilities. But any damage to armour and hull needs to be repaired using the repair facilities at cost or using the repairer mods. So if you have the repairer modules in your cargo, you can simply fit them in station, undock and activate them until you are all fixed then re-dock and unfit them. This will save a lot of ISK. In fact you should never have to use the repair facilities to fix your ship unless you are in a real rush to get back into the action.



Shield/Cap Rechargers (mid): These are passive mods that will increase the recharge rate of shields/capacitor. They have no stacking penalty and are multiplicative in effect.



Shield/Cap Extenders (mid): These give an increase to the shield HP or cap capacity. Good for PvP because they give substantial increase – much more than recharger modules would give for the length of the battle. But a little known fact is that they actually increase the “recharge rate” as well. This is because recharge rates are stated as seconds to recharge your entire shield HP or cap capacity. So making these stats larger will increase the recharge rate proportionately. No stacking penalty and double whammy affect.



Armor Expanders (low): A passive armor membrane increases Armor HP's by a %, whilst armor plating increases Armor HP's by specified amount. Both use low slots. Armor plating will make a ship less manoeuvrable and slow acceleration but won't affect max velocity. No stacking penalty applies.



Resistance modifiers (mid/low): E.g. Invulnerability Field (shields – mid slot), Regenerative Plating (armour – low slot). This can be very effective in reducing the damage taken. There are active mods which use capacitor and passive mods that don't but have less effect. Some affect all damage types whilst others are specific to one damage type but provide better resistance. They can, when used correctly be more effective than

boosters/repairers, just remember stacking penalties apply.



Damage Control Unit (low): Of specific worthwhile mention is the Damage Control mod – active resistance mod. It has limited effect on shields a bit more effect on armor but really helps the hull resistances. Only one of these can be fitted but the great thing is that unlike other resistance mods, it isn't affected by stacking penalty. So in fact, it still provides a good benefit for shields, but is invaluable for armor tanking as well as giving a solid backup if you go into hull. Further, although it is an active mod it actually uses very little capacitor (almost none).



CPU/Powergrid expanders (low): These are specific passive mods which can increase the CPU OR powergrid statistics of your ship. Using these may assist you in being able to fit everything else you want on your ship but otherwise don't provide any direct benefit.



Power Diagnostic (low): Also of specific worthwhile mention is the Power Diagnostic mod. It is a passive mod and will increase shield Hit Points and Recharge Rate and will do same for the capacitor capacity and recharge rate. In addition it will increase powergrid output. The increases are small but since the mod effects shield, capacitor and powergrid and doesn't suffer from stacking penalties on these stats the overall benefit is huge. It is invaluable for shield tankers and those that use missiles (high powergrid requirements).



Speed mods (med/low): Afterburners (AB) (med), Micro Warp Drives (MWD) (med) and Overdrives (low) are the main items (see also agility mods). AB's boost speed significantly but use a lot of capacitor. MWD's are the bees' knees for speed but use an extreme amount of capacitor, can't be used in deadspaces (most missions and plexes) and increase signature radius a lot. Overdrives give a smaller boost to speed but use no capacitor. Overdrives are used as a general increase to speed or supplement an AB/MWD, whilst AB's/MWD's are key to battle tactics – getting to optimal quicker, speed tanking (enemy can't track you) or even escaping a group of hostiles in PvE or PVP.



Agility mods (low): Nanofiber Internal Structures will increase maximum speed by a small amount and also hull hit points but will also decrease “inertia” a bit which makes for faster align times and better ability to orbit at close ranges. Inertia Stabilisers will only give a larger

benefit to “inertia” only but also increases signature radius a small amount.

 **Cap Boosters (mid):** These uses charges which give a significant boost to capacitor from each charge. They do have their uses but because each charge costs a fair amount, uses a lot of cargo space. You will often find a cap battery or cap recharger will provide a better result for most things in EVE. They are useful when you have an intensive cap usage setup which is usually to perform a specific task in fleet ops. Invaluable for PvP.

 **Damage multipliers (low):** Gyrostabiliser (projectile turrets), Heat Sink (energy turrets), Magnetic Field Stabiliser (hybrid turrets), and Ballistic Control Systems (all launchers). These will provide benefits to the actual weapons making them more effective in damage output. They incur stacking penalties.

 **Tracking Assistance Mods (mid/low):** Tracking Enhancers (low) and tracking computers (mid). These increase the speed and optimal range of all weapon turrets. Tracking Computers can use scripts. A Tracking Link (low) (gang) is a gang assist module that will increase the tracking speed of a gang member so that they can focus their modules on damage output or tanking modules.

 **Turret Disrupters (med)(EW):** Essentially the reverse of Tracking Computers, Turret Disruptors affect the targeting speed/tracking speed and optimal range of your targets turrets. Lower these and you have less chance of your frigate being hit by an enemy's large turrets. However these are not as effective as removing the lock on the enemy ship and if you happen to meet someone using missiles, they won't work. They can be loaded with a script to focus on either range or speed and will benefit anyone that is being attacked by the target.

 **Target Painters (mid)(EW):** Target painters hypothetically make it easier to hit a ship by “painting it” with an electronic targeting tag. It will increase the signature radius of the target for all parties that are attacking it. In the game's reality, target painters have a cool-looking special effect but aren't really very effective unless you are in a gang with everyone attacking the same targets.

 **Sensor Assistance Mods (mid/low)(EW):** Sensor Boosters (mid)(EW) will increase the maximum targeting range of your ship and increase its sensor strength which decreases locktime. These can use scripts to focus the mod on either targeting range or speed/resolution. Signal Amplifiers (low)(EW) will do similar but are passive and don't use scripts.

 **Sensor Dampeners (low)(EW):** These are the reverse of Sensor Booster mods and used on a target. Note that the benefit will apply to anyone attacking that target. It will increase locktime of the target and decreases maximum targeting range. If that range falls below the distance to you, the lock will break. The T1 variant decreases the lock range by 35% and increases their lock time by the same number. On some ships like the Celestis, Arazu, and Lachesis a damp gives -70.75% scan res/range bonus versus about -61% on other ships. This assumes your skills are up to scratch. This can use scripts to focus on either targeting range or speed/resolution.

 **ECM, ECCM (EW):** ECM's can make it harder for enemies to get target lock on you or can make them lose lock. ECCM's counter ECM's. Signal Distortion Amplifier (low)(EW) will increase ECM effectiveness.

 **Warp Scramblers/Disrupters (med)(EW):** They are used for PvP solely and will stop enemies from going to warp. They are to some extent countered by warp core stabilisers. Every ship has a warp strength of 1. Warp scramblers come in two flavors which reduce this to zero or less (zero or less warp strength and you can't warp). Warp Disruptors have a range of about 20k and a strength of -1. Warp Scramblers have a range of around 7.5k and have a warp disruption strength of -2. Strangely, Micro Warp Drives (MWDs) are not affected by warp scramblers or disruptors.

 **Web Stasifiers (med) (EW):** Web stasifiers will reduce enemy speed significantly making them easier to track; they are to some extent countered by speed modules. Despite the fact that they reduce speed, they do not prevent someone from warping away and in fact can actually *help* a target go to warp faster. Be careful about webbing really large ships like freighters—you might accidentally help them get away!

There are many other items, too many to go into here. We've ignored some assistance/amplifier mods that increase the performance of other mods and we've totally

ignored command ship mods as they require very high skills.

Just remember that there is no free lunch. Not only are you limited to what you can install but that each module has a negative effect, such as it uses a lot capacitor or slows your ship by adding mass. At best a mod will use up a slot, and some powergrid/cpu – so there is an opportunity cost. Know what the effects are.

Some general advice on setup:

- “Show Info” for the ship and look in the description for what bonuses you get, then make sure you setup the ship to take advantage of those bonuses.
- Check how many high, medium and low slots you have
- With the high slots, check how many turret vs. launcher slots you have. E.g. a ship may have 4 high slots but can only fit 2 turrets and 1 launcher.
- For your gun turrets, try and install exactly the same guns. [“Don't mix guns”](#).
- Setup your ship for a purpose. I.e. don't fit a mining laser on if you are doing a combat mission.
- If you are fitting any active resistance modules, you can't normally see how they affect your stats in the station because they need to be activated first. So exit the station and press: Cntrl+Shift+F. This will show the fitting screen. You can then activate the module and see your stats increase.
- [“Tank either shield or armour - not both.”](#)

5.4 Rigs



Rigs have been mentioned but a bit more these. Similar to modules if they suffer from stacking penalty then this will be stated in the description. If a module affecting a specific area suffers from stacking penalties then rigs that affect that area will probably have stacking penalty as well. The concepts of stacking benefits also apply to rigs. They have drawbacks which can be reduced with specific skills in the mechanic area (e.g. “Shield Rigging”). Some commonly used Rigs for combat:

Anti-(EM, Kin, Therm, Expl) Screen Reinforcer	Increases your ship's shield's resistance to EM, Kinetic, Thermal or Explosive damage. There's one rig for each type. I'm just lazy and don't want to type 4 of them. :)
Core Defence Capacitor Safeguard	Decreases the amount of capacitor used by shield boosters. This is especially useful when combined with a Core Defence Operational Solidifier rig because the combination nets a 6% increase in capacitor drain as opposed to the 18% increase in capacitor drain of

	the Core Defence Operational Solidifier (figures are rounded and based off of T1 rigs).
Core Defence Charge Economizer	Decreases the amount of power grid required to fit shield upgrades.
Core Defence Field Extender	Increases the amount of shields on the ship. It is best used on actively shield tanked ships to increase total hit points.
Core Defence Field Purger	Decreases the regeneration time of the shields. It is an essential module on any passively shield tanked ship.
Core Defence Operational Solidifier	Decreases the cycle time of shield boosters. This results in an 18% increase in the amount of damage your ship can tank and the amount of capacitor / second used by your shield booster (figures are rounded and based off of T1 rigs).

5.5 Drones



Many ships will be able to operate drones. Some specialise in drones. They come in several forms including combat drones, repair drones, webifier drones and warp scramble drones.

They are very effective weapons but need some extra concentration to make sure they don't get destroyed. Usually you will want to release your drones only when enemies have already aggroed your ship and retrieve them when new threats appear. If they do get damage they can be repaired.

The skills you will want are in the Drones category. The “Drones” skill will enable you to control 1 extra drone per level up to a maximum of 5, but many skills will increase their effectiveness.

Each ship has a drone bay size which determines how many drones it can carry. Each ship also has a bandwidth which determines how many drones it can control at once (up to the maximum of your skills)

Volume and Bandwidth:
 Light Drones = 5m³, 5 Mbit/sec
 Medium Drones = 10m³, 10 Mbit/sec
 Heavy Drones = 25m³, 25 Mbit/sec

The Typhoon Battleship is a great example. It has a drone bay size of 175m³ but a bandwidth of 125 Mbit/sec.

It could hold 5 Heavy drones and 10 light drones or any combination of drones up to 175m³. However, even with the “Drones” skill at level 5, it will not be able to control all the drones in its bay at once. If some get destroyed though, it has plenty of backup drones.

If you have to warp out before you have collected your drones, there is a high chance that they may still be there when you return. Make sure you look out for them.



Combat Drones

Each drone has one damage type, so you can fit drones according to the enemy you are facing. But each drone has a damage multiplier as well. Looking at Scout Drones (see following table) you can see that the Hobgoblin drone has an effective damage of 24 versus the Acolyte drone of 17.25. So if enemy weakness is unknown then Hobgoblins are the best.

Name	Dmg Type	Base Dmg	Multiplier
Acolyte I	EM	15	1.15
Warrior I	Explosive	15	1.3
Hornet I	Kinetic	15	1.45
Hobgoblin I	Thermal	15	1.6

Combat Drones have their own optimal and tracking statistics they also have a maximum range and a maximum speed (as all drones do).

Scout Drones: speedy and good tracking but low damage they are ideal against frigates, destroyers and even fast cruisers.

Medium Drones: These were nerfed in 2008 and are no longer fast enough in tracking to give good dps against fast enemies and don't have the dps of heavy drones. So in PvP they aren't that useful and in PvE are really only good against cruisers.

Heavy Drones: Are very slow but really lay out a lot of DPS. They are the drone of choice when facing Battleships and slow moving targets.

Other Drone Types

Most remote repair, webifier/scrambler and mining modules use up valuable slots. Drones that perform these tasks can be very helpful. Individually they are much less effective than a dedicated module but with 5 of them they can be highly effective.

Generally you will want to have 5 drones active at all times (assuming your ship has minimum of 25m³ drone bay etc) and they should all be of the same size (scout, medium or heavy) – kind of like the “Don't Mix Guns” rule. This doesn't mean they all have to be combat drones. For example, it can be very useful to have say 2 webifier drones and 3 combat drones active if you are having problems tracking fast targets.

5.6 “Don't Mix Guns”

If Yul Brenner was alive today this is what he'd be saying. It is a rule and a fact that much debate has resolved. Do not make the mistake that you think you know better. Each turret you fit should be the same and similarly the missile launchers should be the same. Further, you should have your gun turrets and missile launchers complement each other with similar ranges. Don't fit large guns with optimal range of 50km with standard missile launchers that have a range of only 30km.

There is no reason why you should need to fit close range guns and long range guns. If you feel that your current guns aren't doing the job properly then you need to either change your style of play (approach/strategy), put in assistance modules that will make them work better or change all the guns to better suit your ship and style of play.

This doesn't mean to say you can't fit a meta 1 next to a meta 4 because they aren't “the same”. The idea is to keep similar optimal ranges/accuracy falloff/max distance (missiles).

In summary, the reason is that you want to put as much damage as possible on your enemy, and you can only do this if all your guns have the same optimal range and your missiles can all reach their target at the desired range.

For a complete discussion of this, see www.dontmixguns.com

5.7 Overloading Modules

If you have the skill “Thermodynamics” you can overload modules which will increase their effectiveness significantly. Unfortunately, the module will incur heat damage and will destroy the module in a short amount of time (minutes). It will continue working to full effect until it stops working. The module will need to be repaired before it can be used again. How long the module lasts whilst overloaded depends on several factors, but a higher Thermodynamics skill will decrease the damage the module incurs.

Further, the heat damage bleeds over into adjacent modules so placing offline modules next to overloaded modules can therefore act as a heat sink and keep the overloaded module alive longer but obviously this uses up a slot.

Using nanite repair paste, whilst expensive will enable you to repair the modules in space.

You may notice some small buttons in-between the capacitor/shield/armor/hull circle display and the module buttons. These buttons will overload the entire rack (high, medium or low racks) of modules. Alternatively, you can right click on a specific module and overload just that module.

In life and death PvP, this skill is a necessity and can add 10%-30% effectiveness to modules.

6 Tanking

Tanking is the process of reducing—or even negating—the damage that is dealt to you. Tanking comes in two varieties*, namely shield tanking and armor tanking. To determine what kind of tanking your ship is best at, it usually suffices to look at the number of mid slots and low slots. If you have more mid slots than low slots, you are better at shield tanking, and if you have more low slots your ship is probably better at armor tanking. In general, Amarr and Gallente ships are better at armor tanking and Caldari at shield tanking. Minmatar will do both, generally speaking. Note that shields recharge; armor doesn't.

Tanking a highly complex and debatable topic as to what works best. There are too many different situations and ship strengths for there to be any best approach. A more detailed section can be found at the end.

Remember opportunity cost, in that the more you set up to tank the less modules you can use to assist with webifying, speed, tracking, damage and targeting/optimal. I have seen many good tanking setups that could tank indefinitely but they would need it because they would take that long to kill or get to enemies because they have ignored dps and speed.

* There is "speed tanking" which means reducing or eliminating damage through extremely high speeds. This is an advanced level of play covered a bit later in this guide.

6.1 To Shield or Armor Tank – That is the Question!



Shield Tanking

Active shield tanking often uses Shield Boosters and Shield Hardeners. Shield Boosters, when activated, increases your shields immediately by a certain amount. Since they have a short cycle time, it is definitely not recommended to put them on auto repeat, because they will eat your cap fast. Shield Hardeners also use cap, and come in 5 varieties, one for each damage type and an Invulnerability Field that adds to all resistances (but at less

percentages than a single-type). Alternatively, passive tanks don't use capacitor power and on some ships can exceed the effectiveness of active tanks.



Armor Tanking

Armor tanking works differently from shield tanking. Armor Repairers repair armor like Shield Boosters boost shields. There are a couple of big differences though. First, unlike a Shield Booster, Armor Repairers repair at the end of their cycle, not at the start of one. Their cycle times are longer too, but they cost less cap per second, so it is possible to run one or even two all the time, especially on Amarr ships. Like the Shield Hardeners, there are also Armor Hardeners. Unlike with shield tanking, there's a second viable alternative to increase resistance, which are the Adaptive Nano Membranes. They add a percentage to all resistances, like Invulnerability Fields do with shields, but they don't use cap! I'd recommend skipping the armor plates and use these instead because they allow you to take less damage from each shot.

To determine whether you should be shield tanking or armor tanking you need to look at several factors:

- Medium versus Low slot mix: If more medium slots than low slots then this indicates shield tanking and vice versa.
- Shield vs. Armor HP's: Whichever is higher indicates the one you should tank.
- Shield vs. Armor base resistances. In fact, because these can differ quite significantly and also the type of enemy you are against. It is possible that versus some enemies you might be better off with a different tank setup. Most people would not change their tank setup on this basis but it is a possibility. Mostly the better option is to put specific resistance mods on for that enemy type.
- Skills: Engineering versus Mechanic. If you have concentrated on one at the expense of the other then you may find you can tank better with that even if your ship indicates the other. This is a short term issue in that you should immediately train the skills that best suit that ship.

You cannot take any of the above factors in isolation and must use all of them in determining whether to tank shield or armor. Again, experiment with a fitting tool to see and check out the BattleClinic loadout forums.

Let's look at the Caldari battleship known as the Raven.

- The Raven has about 6641 amour and 7500 shield leading us to believe it is an excellent candidate for a shield tanker.

- Look at the ships low and medium slot configuration. The Raven has 6 medium slots and 5 lows, so this reaffirms that it is a good shield tanker.

A good rule of thumb is this:

- Caldari: shield tanks
- Gallente: amour tank
- Amarr: amour tank
- Minmatar: amour / shield tank

Note that the Minmatar can use both tanks and different ships favour different tanks.

6.2 “Tank Armor or Shield – not both”

This would be Yul's other catch-cry and again, don't make the mistake that you think you know better.

The reasons for this are as follows:

- Using tanking mods on both armor and shields generally means you are using twice the number of mods and module slots.
- By putting all your resistances and boosters etc on one, you can keep the maximum benefit for much longer.
- The shield mods will be useless once you lose shields and the armor mods useless until you lose shields, so if tanking both you always have some mods that aren't being used.
- Armor uses lows as the main and mids as support whilst shields use mids as the main and lows as support. Tanking both with mains means no support modules.
- Increasing resistances by even a small amount can significantly decrease damage taken.

Simple calc: Your shield has 5,000 HP's and recharges on average 200/minute. You are incurring damage of 20,000/minute. Base resistance is 70%. Damage taken therefore is 6,000/minute and your shield is gone and into armor by 800 HP's after the first minute.

Put on 50% resistance mod and you will increase your resistance to 85% resistance. Whilst this is only a 15% increase it is effectively **halving** the damage you take down to 3,000/minute (shield used = 2,800 after the first minute)

Then consider a booster/repairer as well that you can run for one minute with your cap and provides 1,000 HP's/minute. Your damage is now down to 2,000 in the first minute (shield used = 1,800).

After one minute you have run low on cap and need to turn off the booster, but your shield can still take another

1.13 minutes of damage before going into armor (another 3,400 units of damage). Shield total of 2.13 minutes

And assuming armor hp's and resistance base is same as shield. You would then last another 0.83 minutes before armor was gone and you needed to warp out quick smart - a total of 2.96 minutes.

Now consider that you had the resistance on the shield but the repairer on armor ... naughty naughty.

Your shield would last 1.79 minutes including recharge and resistance. Your armor would last one minute including the repairer - a total of only 2.79 minutes.

This difference of .17 minutes (10.2 seconds) may not seem much but this could mean the difference between life and death. Further, my example is fairly simplistic with only two modules used for tanking. The difference is much more obvious when you start taking into account extra resistance mods, HP extenders, rechargers and rigs.

Use any example you want, the conclusions will be the same.

6.3 Advanced/Detailed Shield Tanking

With such a large subject it is hard to know where to start, so I guess I'll start at the beginning: skills. The modules you use can *and will* make a massive difference to how you Tank, but generally it comes down to skills.

6.3.1 Shield Tanking Skills

If you don't have the basic skills behind you, you will find you won't be able to fit certain mods or use them properly. At the other end of the scale, having certain skills at level V which give you that extra 2% can make the difference between who wins or loses the fight.

Here's a list of important skills that's alphabetical and in no way reflects importance. Use EVEMon to figure that out!

EM, Explosive, Kinectic, and Thermal Compensation	These four skills give a 3% per skill level bonus to passive shield hardening mods. This basically means the bonus this module gives to your ships resist will be greater than normal.
Energy Grid Upgrades	This allows you to use modules such as cap batteries and power diagnostic systems (PDSs). Each skill level reduces the CPU fitting costs of these modules.
Energy Management	5% extra capacity to the capacitor on your ship per skill level; in layman's terms you get 5% extra energy added to your ship per level. More cap means you will be able to run certain modules for longer allowing you to stay longer in the fight.

	Also having more cap but keeping the same recharge time will increase the amount of cap regenerated per second.
Energy Systems Operations	5% reduction to recharge time of your capacitor per skill level: this means that your cap comes back quicker after you have used it allowing you again to stay in the fight for longer.
Shield Compensation	Reduces the amount of cap used by shield boost modules by 2% per level making your ship more efficient and leaving you more cap to use for other things.
Shield Management	5% extra shields per skill level. This means your tank is bigger, so it will take longer for your enemy to get through. Also having more shields but keeping the same recharge time will increase the amount of shields regenerated per second.
Shield Operation	This skill gives you 5% reduction to shield recharge time this allows your shields to recharge quicker between your enemy's attacks. This skill also enables you to use shield boosters.
Tactical Shield Manipulation	As your shields go down you start to take minor damage to your armor once you reach your last 25% of your shield. With this skill you reduce that amount by 20% per level until at level 5 you take no damage to your armor till every last point of shields are taken.

If you have these skills trained to at least a basic level, you'll last a lot longer when taking damage. Here are the resistance amounts and the effect they have on tanking:

% Res Increase to Shield/ Armor HP	Increase to max damage tank-able
0	0%
10	11%
20	25%
30	43%
40	67%
50	100%
60	250%
70	333%
80	500%
90	1000%

Notice that as resistance increases both your effective total shield / armor hit points increases at the same time as the amount of damage your boosters / repairers can recover.

6.3.2 Shield Tanking Modules

Shield tanking modules come in different sizes. This is because they are made for different ship types, but they all

do the same job – but don't forget there are better versions available for each module.

Here's the list of shield tanking modules in no particular order. Note that some will also be used when you're armor tanking, too! (The capacitor & powergrid modifiers.)

Shield Boosters	This is a active tanks first line of defence this repairs your shields when activated. This module has a cycle time and in each cycle will burn X amount of cap, replacing shields in the process
Shield Boost Amplifiers	This module increases the amount that a shield booster repairs per cycle.
Shield Extenders	These modules increase your overall amount of shields you have on your ship.
Shield Flux Coils	These modules increase your ships natural recharge rate in exchange for overall shield amount.
Shield Hardeners	These modules give a large boost to your ships resistances once they are activated. The increase is portrayed as a %. The hardener works on the portion of the shield not already covered. That means with a base resistance of 60%, a hardener only affects 40% of the shields. So in this case a hardener that gives 50% resistance will yield a total resistance of 80%, the math behind this is $100 * (0.5 + (0.4 * 0.5))$. Additional bonuses resistance will be stacking penalized. Stacking penalties are calculated separately for to each resistance type.
Shield Power Relays (SPR's)	These modules work like shield flux coils by increasing shield recharge rate, except this module reduces cap recharge rate.
Shield Rechargers	This module also increases your shield recharge rate but by a small amount.
Shield Resistance Amplifiers	These modules increase your ships resistances by a small amount but do not need activating. The increase is portrayed as a %. The effective resistance after fitting the module is calculated in the same way as Shield Hardeners.
Damage Control (DC)	This module increases your ships armor, shield and structure resistances but by a small amount. Only one of these modules can be used on a ship at any one time. It is important to note that the resistance offered by damage controls is NOT penalized by stacking.
Capacitor Batteries	These modules increase the amount of cap that your ship has by a set amount.
Capacitor Boosters	These modules inject extra energy into your ship when it needs it most. Use in conjunction with cap charges that you keep in your cargo hold.
Capacitor Flux Coils	This module decreases your ships cap recharge time, but reduces the overall cap amount you can store.
Capacitor Rechargers	This module decreases your ships cap recharge time but by a smaller amount with no attribute based penalty. However taking up a mid slot with a capacitor recharger can be disadvantageous to your tank as

	we will find out.
Power Diagnostic Systems (PDS/PDU)	This module has a multiple of advantages. The PDS increases cap amount and shield amount, while reducing recharge amounts on both. Also increases your ships power grid helping with fitting other modules.
Reactor Control Unit (RCU)	This module increases your ships power grid amount.
Capacitor Power Relays	This module decreases your ships cap recharge time but reduces your ships shield boost modules shield boost amount.

6.3.3 Active vs. Passive Shield Tanking

Active and passive tanking are very different ways of shield tanking. Each method has different ways of setting up your ship and each method has its pros and cons. In passive shield tanking your aim is to rely on your ship's own recharge rate to be greater than the damage you are taking. This method means you don't have to rely on cap, meaning you don't have to worry about ships "nos'ing" or "nuet'ing" you. On the down side, once your ship is taking more damage than it can recharge, you're dead unless you can warp away. In a active tank you rely on cap to activate modules to recharge your shields as well as run your shield resistance modules. This method is very hands on and a lot of players prefer a passive tank for that reason. On the down side if a ship "nos'es" or "neuts" you, then you will be unable to activate your modules.

6.3.4 Active Shield Tanking

In active shield tanking as stated above you use your cap to activate modules that regenerate your shields. The basic premise with active tanking is that you use your mid slots for modules that increase your resistances, shield amount and shield recharge. In the case of your resistances you are aiming to get each one to be as equal as possible.

In some of your low slots you should dedicate to cap recharge. Remember that this is me building up a tank for purposes of this guide and I'm pretty sure people will disagree with my choice of modules, but at the end of the day the principals remain the same.

In the case of the raven it has 6 mid slots and 5 low slots. These many slots allow you to build up a nice active tank.

First off we will look at the mid slots. the first thing we will need is a shield booster. In the case of a Raven this should always be a extra large (XL). Now I'll fill the second and third slot with shield boost amplifiers giving a massive boost to the XL shield booster we're already using. In the forth slot I will put a Photon Scattering Field which is a dedicated EM hardener due to the fact all but a few shields have an EM resistance of 0% (in all but a few

ships). In the fifth and sixth slot I will put two Invulnerability Fields that will increase all my resistances by a %. As you can see I have built up a tank that has a high shield boost amount as well as close to equal resistances that are as high as possible without being a hindrance to my tank.

As far as low slots are concerned I wouldn't take up all my lows with cap mods as I will want to put on modules such as BCSs, so in 2/3 of my low.

6.3.5 Passive Shield Tanking

With passive tanking you're relying primarily on 3 things, shield regeneration, shield resistances and shield amount.

With your ship been passive you will rely on your ship recharging its shields as quick as possible between missile volleys and salvos of rails.

With high resistances that amount of shield that will be needed to regenerate back will be drastically reduced making life a lot easier.

Finally, a decent amount of overall shields so that you can be easily overpowered (out dps`ed).

A perfect sip for this purpose is the Drake due to its high resistances, resistance bonuses, good shield regeneration and a good slot layout allowing you to build up a nice passive tank and is the favourite of many mission runners and PvPers alike for this reason. However as I said I would be doing all setups based on a Raven it would not be fair to switch ship types.

First of all we will look at the mid slots on the Raven. A common setup for a passive tanks mid slots is 2 large shield extenders, 2 hardeners usually 1 em and 1 invulnerability and 2 shield rechargers. This is commonly referred to as the 2/2/2 passive setup. The problem with the 2/2/2 passive setup when looking at a Raven is that you have low resistances, making hardeners more of a priority

The second most common setup the 3/3 passive shield setup which is 3 hardeners usually 1 EM, 2 Invulnerability and 3 shield Large shield extenders. This setup allows you to increase your already low em resistance and then lift your other resistances as well while also increasing your shield amount. Use a variation on the 3/3 setup with 3 hardeners and 3 shield rechargers as the shield amount of a Raven is less of a issue.

In the low slots of a Raven you would be tempted to keep 2 slots for damage modules while with your remaining 3 put in shield power relays. Currently, shield power relays do NOT have any stacking penalty meaning you would get

your full moneys' worth out of them. Although a DCU is a good module, you are almost always better served by a module that increases the damage dealt by your weapons, a shield power relay, a shield flux coil, or a power diagnostic system.

6.4 Advanced/Detailed Armor Tanking

If you skipped shield tanking because you want to armor tank, go back and read it, because I list many skills and modules that that overlap. As with shield tanking I will also start at the skills used in armor tanking. The modules you use can *and will* make a massive difference to how you tank but a large part you will find comes down to skills. If you don't have the basic skills behind you, you won't be able to fit certain mods or use them properly.

6.4.1 Armor Tanking Skills

Armor Compensation	This gives a 3% per skill level bonus to passive armor resists. There are four skills, one for each damage type: Kinetic, EM, Thermal, Explosive.
Hull upgrades	This skill gives you 5% extra armor amount per level. Also this skill allows you to use modules such as armor hardeners
Mechanic	This skill increases your structure amount by 5% per level and is also the basic requirement for armor repairers.
Repair Systems	This skill is also another requirement for armor repairers but also reduces the activation time of armor repairers allowing you to tank quicker.

6.4.2 Armor Tanking Modules

In addition to all of the capacitor and CPU modules listed in shield tanking (which work for armor tanking as well), here are the specific ones for armor:

Armor Hardeners	These modules increase armor resistances in exchange for cap.
Armor Plates	These modules increase the amount of armor that you have while increasing your ships mass.
Armor Repair Systems	This module is the first line of defence on a active armor tank and repair damage armor in exchange for cap.
Energized Plating	These modules are passive modules that increase your ships' resistances but not as much as active modules due to their lack of cap consumption.
Hull Repair Systems	These modules repair your ships' structure in exchange for cap. They're worthless in combat.

6.4.3 Armor Tanking Rigs

Here are the rigs that impact armor tanks:

Anti-X Pump	Increases armor's resistance to the listed damage, where X is Anti-EM Pump, Anti-Explosive Pump, Anti-Kinetic Pump, Anti-Thermic Pump
Auxiliary Nano Pump	Increases the amount of hit points your armor repairers restore each cycle. They are a good way to increase the amount of dps your ship can tank without increasing the draw on the capacitor.
Nanobot Accelerator	Decreases the cycle time for armor repairers. This increases the amount of damage your ship can tank by a greater amount than the Auxiliary Nano Pump. However, the reduced cycle time cause your armor repairer to use capacitor points faster.
Remote Repairer Augmentor	Reduces the amount of capacitor used by remote armor and hull repairers.
Trimark Armor Pump	Increases the amount of armor on your ship. It is especially useful when fitted on passive armor tanked ships.

Note: Armor Rigs will reduce your ship's top speed by 9% (Armor Rigging 1) to 5% (Armor Rigging 5).

6.4.4 Active vs. Passive Armor Tanking

There are many differences between active and passive armor tanking. The main differences are that in a active tank you use active modules to repair your damaged armor, hoping to be able to constantly repair over a period of time. Passive armor tanking is a matter of having a lot of armor with no form of on-board repair.

6.4.5 Active Armor Tanking

Ruprect Belganor writes: In active armor tanking you use your cap to activate modules to regenerate your armor. The basic premise with active tanking is that you use your mid slots for modules that increase your cap. With your low slots you're aiming to fit modules that repair your armor, give more armor hit points, and raise armor resistances. Get your resists as equal to each other as possible. Remember that this is me building up a tank for purposes of this guide and I'm pretty sure people will disagree with my choice of modules, but at the end of the day the principals remain the same.

Let's use a Megathron battleship to create a tank. First off I'll look at my low slots where the main tanking modules will be. Personally, I always like to fit two armor repairers, which allows me to repair twice as much armor at any given time. Secondly I will add a explosive armor hardener to increase the ships incredibly low Explosive resistance.

This low resistance is the same in almost all armor tanks. Now I will add 2 Energized adaptive nano membranes (EANM's) which are passive multispectral armor hardeners, which raises all of my armor resistances. My fourth module is a DCU, to increase my ships' shield and armor resistances as well as my structure for those occasional "mishaps" we all have, like autopiloting to a gate or going over to pee in the middle of a Worlds Collide mission. I'll fit my 7th slot as a damage mod. For shits and grins, I could drop the DCU which would still give me an ample tank. In my mid slots I have to take into account things such as optimal ranges, so some of the mids will automatically be taken up with a afterburner/mwd and a web, leaving 2 mid slots. In these 2 mid slots I'd put 2 cap rechargers for PvE and 1 cap recharger and 1 cap booster for PvP. This gives a large repairing tank that has equalized resistances that will be relatively high as well as a way to regenerate cap; an active armor tank is notorious for burning cap.

6.4.6 Passive Armor Tanking

Passive armor tanking is nothing like passive shield tanking, dude. Your armor does not repair itself. With passive armor tanking, the principle is to have a large amount of armor and high resistances. Let your enemy "chip" away at your armor while you shoot him. The combination of faster damage from your guns and the slowing down of the damage he does to you through resistances is how you create ownage.

Passive loadouts don't have to worry about cap for tank. But with all the extra armor you won't move too fast. Getting into your optimal range, or chasing / fleeing a serious threat is going to be kinda tough. The low slots are very much the same as the active tank. However, instead of 2 large armor repairers I will put on 2 1600mm armor plates, giving me a massive boost to my armour amount. Muhahaha. Next I'll put a explosive armor hardener to increase the lacking explosive resistance. After that I'll put energized adaptive nano membranes (EANM's) to increase overall resistance. Finally a DCU goes in to increase all resistances. This will help in case of an emergency, as my structure will last until I'm in warp. Alternatively I could add a third EANM to increase resistances further.

6.5 Difference Between PVP And PVE Setups

There are only 2 main differences when setting up a ship between PVE and PVP. The first is how you keep your cap powered.

In PVE, often players use a passive method of cap regain as this costs you a lot less than cap boosters. This saves you a lot of ISK and saves room in your cargo hold for

loot. In PVP you keep your tank running by use cap boosters. It's also effective if you're being nosed /nueted.

In PVE you should always know what enemy you're facing, so fit hardeners that match the damage they deal. There is no point increasing a resistance that the enemy will not be dealing; it is a waste of a slot. In PVP your enemy can and will throw all damage types at you so increase your lowest resistance (EM in shield tankers, EXP in armor tankers) then increase all your other resistances equally as you can with multi spectral hardeners. You can in some cases guess what damage certain enemy will be doing it you know they use lasers or rails.

6.6 Putting it all together: How to Fit Your Ship

By alghanhar, BattleClinic Moderator

I thought I would put this little guide together; hopefully it will act as a guide to ship fitting for the new or confused player, sort of a push in the right direction rather than a dictatorial you should do such and such.

Tools

Ship fitting can be confusing, especially for the new player, there are hundreds of ships out there and thousands of modules to fit on them with varying degrees of success. Fortunately you have several tools available to you to help you plan out potential fits.

The first tool of course are the forums, BattleClinic's own offers insight from some highly experienced and very successful players. Under the Eve-Online banner is a drop down menu, third down being search loadouts. Here you can filter out your search to locate only the fittings of the ship you are interested in. The filtered list will display the ships in order of rating, highest first; usually the highest rated fits are the best for the ship. These loadouts will give you ideas, they will tell you what's been done before and indicate what works and what doesn't.

The second tool is EveMon; this is a character planning tool and can be found here: <http://evemon.battleclinic.com/>. Using this you can more effectively plan your characters training. Flying a ship is about more than just being able to undock it, it is also about being able to fit and fight it effectively; EveMon is an invaluable tool enabling you to plan out the skills you will require for each ship you are interested in.

Third we have the various fitting tools, I prefer Eve Fitting Tool (EFT) which can be found here: <http://myeve.eve-online.com/ingameboard.asp?a=topic&threadID=548883&page=1>

You can update EFT with your characters skills using the

API key, and from there it is a simple matter to plan out your ship fits.

Lastly there are the Griefwatch killboards (<http://www.griefwatch.net>). Read them; you will be shocked by how many awfully fitted ships die very quickly to opponents they should have been able to kill.

Using these tools you can plan out your fittings, you can see what skills you need to fit the ship effectively, what skills you still need to train, how long it will take to train them. You can use EFT to tweak a ship's fitting, you can tweak your skills to see what effect they will have, and you will see also what skills you currently lack for your dream fitting.

Always, always run potential ship fits through EFT before using them for the first time. It will indicate weaknesses, and will tell you if you are able to fit them in the first place. This will avoid many expensive mistakes on your part, you will still lose a ship, that's part of Eve, but as many folk at BattleClinic say, many fights, PvE or PvP, are won and lost at the fittings screen. Fit a ship well and you vastly reduce your chances of losing it, or in the case of the PvP junkies out there, will at least give you a fighting chance of killing the other guy.

7 How NOT to build a BAD fighting ship

A step by step guide by Montclair – Abbreviated by Editor

This guide will not help you make the best or most creative fit, but is intended to help a new player fit a ship and avoid some common mistakes. Some simple but important rules are high-lighted; make sure you don't break them unless you really know what you are doing.

Step 0: Get EvE Fitting Tool (EFT) and EVEMon

As mentioned previously several times. I'm sure you've got the message.

Step 1: Decide the purpose of your ship

Your ship setup is almost entirely dictated by what you plan to do. A setup for mission running in high sec will die pretty quickly in PvP and probably vice-versa. Even within PvP there are roles such as tackler or damage dealer, each of which requires a different setup.

Never try to build an "all purpose" ship, because in the end it's going to be unsuitable for any purpose. Instead, choose only ONE purpose and design your ship around it. Most of this section will deal with common elements of a

combat ship and focus more on PvE setups. PvP is much more complicated and unpredictable, so a newer player who wants to do PvP should join a PvP corp to learn from more experienced pilots.

Step 2: Choose the right ship

First choose the right size/class. Bigger is not always better. For example, the big guns on your battleships will have harder time hitting fast moving frigates, and even when they do it is not very cost-effective. For PvE, use frigate-sized or destroyer-sized ships for level 1 missions and high-sec ratting, cruiser-sized ships for level 2 missions, BattleCruiser (BC)-sized for level 3 and battleships (BS)-sized for level 4. It's generally okay to use one size up (e.g. BS for level 3), and if you are skilled enough, and one size lower would also work most of time (e.g. frigates for level 2). You're encouraged to experiment with T2 variants, such as Assault Ships (AS/AF) and Heavy Assault Ships (HAC). In PvP, almost every class of combat ships has its use, and your role and your target will decide the best class to use.

All T1 classes of combat ship and many T2 classes have two or more ships per race. Which one to choose is somewhat more complicated and personal. Usually there is one that is heaviest and packs the most firepower, and other ones that are lighter and more agile. Read the text description and bonuses of each ship and choose according to your fighting style. Sometimes your skill point (SP) distribution will help you choose, for example if you have a lot more SP in missiles than gunnery, choose a ship with more missile hard-points and bonuses missiles, such a Caracal instead of a Moa for a Caldari cruiser. For PvP your role will again be the deciding factor.

Step 3: Choose your weapon

For a combat ship, always fit weapons first, because 1) they will use the majority of your CPU and power, and 2) your tactics is most strongly connected with your choice of weapons. The mid and low slots need to fit according to the tactics (e.g. your desired speed and range) and use left-over CPU and power.

The bonus of your ship will decide the major type of weapon you fit (e.g. hybrid, energy, projectile, or missile launchers) and the major size (e.g. small, medium, large and extra-large for turrets, and similar choices for launchers). Always use the weapon type that your ship gets a bonus for.

If you are just a little bit (1~4%) over budget on the power grid that it will take to fit the weapons of your choice,

consider putting a Power Diagnostic System (PDS/PDU) in a low slot as it gives you 5% additional power and some other benefits at a very low cost. For a frigate-sized ship, an auxiliary power core gives you 10~12 units of power, so it might be a choice, but you should really avoid it since it takes away one of the few low slots of a frigate-sized ship.

If you are a little low on CPU, try a T1 meta 2->4 version of a weapon because it uses a bit lower CPU consumption. These are stop-gaps though for this purpose, until you train those fitting related skills such as Engineering, Electronics and Weapons upgrade. If you are over budget on power and/or CPU by a significant amount, you can try to use weapons of one size lower till they fit. For example, if you are 15% over budget on power fitting 7 x 150mm Railguns on a Cormorant Destroyer, try 7 x 125mm. However, BattleClinic recommends simply flying a lower class ship until you're ready.

For weapons, the T2 variant also gives you the option to use two types of T2 ammo, which presents you some tactical flexibility during combat. So use the T2 variant whenever your fitting skills allow. Otherwise, choose the best named you can fit and afford. If you are low on ISK, consider using the "worst" named, as they offer a slight increase of useful attributes and save you CPU (and sometimes power) at a fairly low price. If you are really broke and can only afford the T1 variant, forget about using that ship for now (unless it's your first true frigate) and start saving for ISK, because you probably can't afford losing that ship. Never use a ship you can't afford to lose.

Until now I have been pretending as if you can only fit either turrets (guns) or launchers (missiles) on your ship. Many ships have high slots for both, but that doesn't mean you should use both. Why? Usually each ship has bonus for only one type of weapon, and you should take maximum advantage of it. Using only one type of weapon also allows efficient use of weapon upgrade modules. So if your ship gives bonuses on a turret weapon (and likely has more turret hardpoints than launcher hardpoints), use up all the turret hardpoints, and vice versa.

Sometimes you still have one or two high slots left. Consider using energy vampires (Nos) or energy neutralizers (Neut), especially if you plan to fight in close range. Generally speaking, use Nos if you are low on capacitor balance, Neut if you have lots of extra capacitor output. You should probably make this decision after you filled the mid/low slots, since those support systems should be fitted first (to support your main gun choice, remember?)

I am obliged here to mention the [Principle of Not Mixing Guns](#). If you don't remember, go back and read this section.

Step 4: Fit additional propulsion...or not

Speed is another thing closely related to your role and tactics. As such, it's important to decide early whether you need an afterburner (AB, taking you to 500~1000m/s), a Micro Warp Drive (MWD, taking you to 1200~2000m/s), or neither. For PvP, a MWD is often a requirement. For missioning, MWD can't be used (since missions generally take place in "deadspace") while an afterburner is often very helpful, allowing you more effectively "kiting" the rats (if you have longer range), or getting within your weapon range faster (if you have shorter range). and reaching the wrecks faster. Make sure you use the right size, and remember the drawbacks of the MWD (increased signature size) and AB (increased align time). Don't worry about overdrive injector or nano-fiber structure for now, as they're considered fine-tuning and will be covered later.

Step 5: Fit role/use specific, must-have modules

These include a warp scrambler (scram) or warp disruptor, and usually a stasis webifier (web) for tackler and solo-PvP. For long range sniping, sensor booster (and script) and/or signal amplifier is often needed if your weapon range is way over your targeting range. For specialized T2 ships, this means modules that receive a "role bonus", such as cloaking devices on covert ops, stealth bomber and black ops ships; it would be pointless to use these ships without such modules.

Step 6: Decide your tank

We have been through the concepts of [Tanking](#) in great detail so we won't repeat them here. Suffice it to say that although setting up your tank is a fair bit into the ship setup process it is still absolutely fundamental to get it right.

Step 7: Fine tuning

By now you already have all the key components in place: firepower, speed and defence. You might still have a few mid and low slots left, and maybe some surplus CPU / power. And you may either have a deficit or surplus on capacitor usage. It's time for fine tuning, where your creativity, style of play, willingness to compromise, and wallet size comes into play. Everyone does this part differently, and I'm simply going to describe my usual approach.

First consider the capacitor budget. A decent surplus on capacitor gives you a few options to bolster your defence: armor and shield hardeners increase your resistance by a very significant amount, while shield power relays exchanges capacitor boost to shield boost. An additional armor repper might also be used for active armor tankers. If you still have quite some surplus capacitor and you're playing the role of a tackler, consider putting a neut in an open high slot. Or just leave it there: surplus capacitor allows you to fire certain types of T2 ammo, and gives you perhaps a tiny bit of breathing room if your opponent uses nos/neut against you.

If you are using capacitor faster than it recharges, don't panic. Not all modules need to be on all the time, especially major cap hogs such as the MWD. See how long your capacitor will last, and compare it with your anticipated length of the battle. A capacitor that lasts for 10 minutes should not be a problem for a battle that lasts 5 minutes. A PvP battle is usually quite short so this is not a problem. For PvE, a good ten minutes is nice to have.

If capacitor is a problem then there are a multitude of solutions. Power Diagnostics, cap batteries, cap rechargers, cap power relays, cap flux coils and cap boosters. You will need to look at the pro's and cons of each to determine the best for your ship. Use EFT to compare. If you are still having problem with capacitor after using these options, you probably did something wrong in an earlier step.

For a bigger ship you should still have some slots left. You can use them for the appropriate weapon damage upgrades, such as a ballistic control system (BCS) if you're using missiles or gyrostabilizer/heatsink/magnetic field stabilizers for projectile/laser/hybrid weapons. For turrets you may also consider the tracking modules, which increases your range and tracking ability - they are more useful than damage upgrades if you're having a hard time hitting things.

For the more defence oriented, there are also plenty of mods to use. A damage control unit (DCU) gives you a healthy increase in resistance over-the-board at a low cost, and can be used by shield or armor tankers. Notice only one DCU can be used on each ship. Also, a passive resistance module can be good for reducing cap usage.

To increase speed (after putting on the main propulsion module), you may use nano-fiber structure, or overdrive injector for better MWD performance..

The fine tuning process requires you to go back and forth between modules, and make every effort to increase your offense and defensive capabilities, little by little. This is also when the differences between T1 M0, T1 M0->M4

and T2 variants can make a big difference. For example, sometimes you'll have to use a T1 Meta 4 instead of T2 for a certain mod, so you can squeeze in some mod in another slot, increasing the overall capability of the ship. Make the best use of every bit of CPU and power, and try never to leave a slot empty.

Step 8: Pre-flight & in-flight fitting

One great thing about fitting ships in EVE is you can change them anytime you are in a station. Refit your ship for your potential adversary. This is particularly easy and useful for mission running, since you know ahead of time the exact type of rats you'll be facing. In this case, refitting involves changing armor/shield resistance modules to the main damage types of that faction. For missile users, you should also load the type of missiles that does damage to the rats' weakest resist. It's slightly harder for gun users, as gun ammo do two types of damage, and the ammo has varying ranges.

For PvP this is more complicated. If you know who you are going to engage, great, use the right type of resistance modules and ammo. In fact, you should also consider changing other parts of your ship fitting if you know a lot about your human opponent(s). But more often in PvP, you don't know anything about who you're going to encounter. In this case, don't leave any of your four resistance type too weak, and carry a few types ammo in the cargo, be ready to change them right before and/or during the battle. Against a tough enemy, consider swapping the ammo that kills his armor most efficiently after taking out his shield. More importantly, you should pick your target wisely so your ship fitting is suitable for engaging him while his is less capable of damaging yours.

Step 9: Read & post fitting on BattleClinic

Either visit the loadout forum on BattleClinic website, or browse them in EVEMon. Study the top rated loadouts of the ship. Some people would say this should be the first step. But the top rated loadouts have varying (and most often, high) SP requirement, and their role/use may not be the same as yours. If you do find a loadout that you like and suitable for your purpose, but lack the skills to fit it, try replacing the T2 modules with some named variants. Sometimes you may also downgrade the weapons by one calibre to make it work for you. In any case it will give you some great ideas. Try to find similarities between the best loadouts.

As long as your loadout fits (e.g. doesn't exceed CPU or power requirement), you can post it on BattleClinic's loadout forum. Don't worry if your ship isn't as powerful or fancy as the other ones there: the forum welcomes loadouts for every skill level. Just make sure you describe

the intended purpose of the ship and the skill requirements. And ask kindly for people comments. **Never just put a one-line description: "this is the best loadout ever!" - unless you want to farm negative karma.** Also avoid posting a passive drake loadout; they will be locked.

A note on Cost

You'll use the same principles about costs as in real life. Personally, I try to use modules that match the value of the ship. For example, I wouldn't spend more than 5m on a T1 frigate. But some other people put the best modules they can afford on every ship they fly, which is also quite valid especially if they're more concerned about the safety their implants in low-sec/null-sec. Whatever you choose, you should know that your ship will be lost at some point, no matter how good it is or how good you are, and you should be able to afford the loss both financially and mentally.

Drones, Rigs, Faction Modules and Command Modules

The aforementioned fitting concepts are not discussed in this part of the guide for various reasons. Further information can be found here:

See section on [Drones](#)

See section on [Rigs](#) and [Armor Rigs](#)

See section on [Meta and tech levels](#) relating to Faction mods.

Command Modules are not in scope of this guide.

8 Salvaging and Cloaking

Although Salvaging and Cloaking are fairly unrelated I put these together in their own section because they are very important components of Eve.

8.1 Salvaging

Quite simply this is the quickest and easiest way for new pilots to make ISK in this game (until they nerf it). Salvage wrecks whilst looting and you will soon find massive extra income from each mission. In some cases many times more than you will actually get from the mission. You will want to start training the following as soon as possible:

Destroyers (rank 2 skill): Level as appropriate, not required but highly recommended

Salvaging (rank 3 skill): Train to level 1 minimum.

- Requires Mechanic to level 3 (rank 1 skill) and Survey to level 3 (rank 1 skill). This enables you to use a Salvager module

Science (rank 1 skill): Train to level 4. This enables you to use tractor beams.

These skills will take about three days to train up if starting from scratch and less with high attributes and learning skills. It is advisable to train Salvaging to level 4 because it decreases the time it takes to salvage.

Once you have the skills buy the following:

- a) Destroyer (with eight high slots) ~ approx 800K
- b) 2x Salvager 1 ~ approx 250K ea = 500K
- c) 1x Tractor Beam ~ approx 1m

As a new player this will be a big investment, don't worry, trust me.

Fit two salvager mods and a tractor beam then the rest of your setup as you would normally for missions. The reason why you are using a Destroyer is that it has eight high slots which means you can put on the salvaging equipment. You will still have more firepower/shield/etc than a frigate so you can run a level 1 mission and salvage at the same time. The tractor beam will speed things up because you can bring in your wrecks up to 20km away to you.

Then go do a mission. Kill all the enemies. Now, zoom out with the camera so you can see where all the wrecks are. Approach areas where there are several wrecks close together. For wrecks that are by themselves and/or further away, use the tractor beam (must be within 20km). If they have loot, get them to within 1.5km, take the loot, and then

put your salvagers on them. If they don't have loot, just get within 5km and salvage. You have two salvagers because it can take several attempts before you successfully salvage, so you can either salvage 2 wrecks at once or put both salvagers on a wreck to increase chance of salvaging quicker. You can salvage wrecks with loot still in them; the loot will just fall into a jet can.

Sometimes you might find one group of wrecks are 100km+ from another group of wrecks – common in level 3+ missions. A quicker way to get between them is either a) use a MWD or b) take yourself out to 150km (minimum warpable distance) from the far group and then warp there. In both cases you can't be in deadspace. If then it is a mission and in deadspace, you need to bookmark the area and hand in the mission first to remove the deadspace.

You can keep attempting to salvage a wreck until successful, but on success you may not necessarily get anything.....It's a numbers game.

The number of items you get from a successful salvage is based on the size of the ship wreck you are salvaging with a random adjustment.

Frigate: 1-3
 Destroyer: 1-3
 Cruiser: 1-5
 BattleCruiser: 1-8
 Battleship: 1-8
 Capital Ship: Yee haw!

Generally Alloyed Tritanium Bars and Melted Capacitor Consoles are the most valuable T1 items but it depends on market prices at the time. They can be anywhere from 100K each to 450k each. Tech 2 ships (from PvP) will drop Tech 2 salvage which are often worth much more again.

Each NPC faction drops specific parts.

- The Empire Navies and Rogue Drones drop all kinds of parts.
- CONCORD drops metal scraps.
- Angel Cartel drop Alloyed Tritanium Bar, Thruster Console, Smashed Trigger Unit.
- Serpentis drop Conductive Polymer, Contaminated Lorentz Fluid, Broken Drone Transceiver, Malfunctioning Shield Emitter.
- Sansha's Nation drop Armor Plates, Defective Current Pump, Contaminated Nanite Compound.
- Mordu's Legion drop Armor Plates, Conductive Polymer, Defective Current Pump.

- Blood Raiders drop Tangled Power Conduit, Defective Current Pump, Melted Capacitor Console, Contaminated Nanite Compound.
- Thukker Tribe, Guristas Pirates drop Scorched Telemetry Processor, Ward Console, Malfunctioning Shield Emitter, Thruster Console.

Be warned that some enemy types do not salvage much of value at all. Watch out for Metal Scraps. If you start getting them (e.g. from Mercenaries), you are almost better off stopping because you will not get much else, and not only are they worth almost nothing but they take up a lot of cargo space. Jettison them, finish collecting loot, forget the salvage and go do another mission. Even if you don't salvage, the tractor beam will speed up looting.

Don't forget that you can salvage any wreck, whether in a mission, a deadspace complex, in a roid belt, player wrecks, rogue drone wrecks or even wrecks owned by other players. Other people can thus salvage your wrecks without causing aggro (assuming they don't take the loot), so watch out for salvage thieves. Salvage thieves are common in plexes and roids. They are very annoying, but the game is designed that way so don't even start to complain. Note however that you cannot use a tractor beam on a wreck not owned by you. If there is a salvage thief, let them get to within 10km, then throw on the tractor beam and pull it out of their range. Or just destroy the wrecks. Either way, the thief will get quite frustrated and possibly leave, otherwise let them have it and go do another mission.

There is a market for these salvage items because they are used to make rig upgrades. At this stage I suggest you sell the salvage materials because they give a great cash injection, but later you may want to stock them up to produce the rigs that you want to use.

For level 2 missions you may want to consider having a BattleCruiser with similar setup as you did with the destroyer. But otherwise you may want your mission ship set up without salvage equipment and buy a specific ship dedicated to salvaging. This will enable you to run the mission more effectively and then loot/salvage more efficiently. Again, the Destroyer is a great dedicated salvage and looting ship because it is cheap, fast, has many high slots and fairly good cargo capacity. It can fit 3xTractors and 5xSalvagers but can struggle with cap usage. I actually use a Stabber cruiser with 2xTractors and 4xSalvagers as a dedicated salvage ship for level 3 and 4 missions. It is very fast, has good cargo, 6xhigh slots and can handle the cap output with everything active.

If the mission is in the same system or one jump away from your agent and/or salvage ship, you will find this more efficient. If the mission is further away then carry the salvage equipment in your cargo hold and refit after the mission objectives are complete.

Salvaging whilst doing level 2 DED's/Plexes is one of the best cash/time ratio's in the game for new players. [See section on DED's.](#)

You can further increase the speed/chance of salvaging with Salvage Tackle rigs (drawback is max velocity).

8.2 Cloaking

Cloaking is an essential part of exploration and scanning but also useful for scouting or traversing dangerous space. You will be invisible to the naked eye, the overview and any scanning equipment. Enemies cannot target you. However, you will still appear on the Local chat channel so people will know you are in the system.

You will need Electronics to level 5 before you can get the Cloaking skill which at level 1 will allow you to use a standard cloaking device which most ships can use. For advanced cloaking devices you need Cloaking to level 4 and a Tech 2 ship that can handle these devices such as a Covert Ops frigate.

Cloaking devices will allow you to cloak at will, but note the following:

- You cannot jump whilst cloaked
- You cannot target anything whilst cloaked and there will be a delay after removing cloak before you can – time delay is reduced by skills.
- You cannot use other modules whilst cloaked, you cannot even reload ammo. You can activate some modules then cloak and the module will continue until one cycle has completed.
- You cannot be within 2km of any object to initiate cloak or stay cloaked.

Standard cloaking devices also reduce your speed to a highly webified state and you cannot warp whilst cloaked. Advanced cloaking devices will allow you to warp and have no penalty to speed but they will require a tech 2 specialised ship to operate (e.g. Covert Ops frigate).

9 PvE - Mission Running

9.1 Agent Missions

With the agent missions, try and go for the highest rated agent you have access to, but don't go into systems <0.5 security. The missions are not harder because the agent is

higher rated you just get more money, standing and loyalty points, but you may not be able to access a lot of them until your standing increases. Note that social skills will increase access to agents. Another thing to train up on!

To calculate what standing you need for a specific agent you can look in the agents info tab but you can also use this formula:

$$F=2*(A-1)+0.05*Q$$

Where:

A = Agent level (1 to 5)

Q = Agent quality (-19 to +19)

F = The corp, faction or personal standing required.

Basically this means a level 2 agent will require between 1.05 and 2.95 depending on quality.

There are some missions that allow you to by-pass enemies by using a warp gate, whilst others you need to kill all the enemies before you can use the gate. Read the mission brief carefully, because I know of at least one mission where as a new player you WILL die if you try and take all the pirates on. You have to by-pass them. This has happened to me :)

It is also beneficial to go for agents of huge or global NPC corporations. This is because they have more agents in the universe and so as you increase your standing you will have access to many more agents with them.

Agents work for various divisions of NPC corporations. And the division will determine what type of missions you get. If you want kill missions rather than courier then go for internal security or the like. It works out something like this:

Agent	Kill	Courier	Trade	Mine
Administration	50%	50%		
Advisory	34%	66%		
Archives	5%	90%	5%	
Astrosurveying	40%	30%	5%	25%
Command	97%	3%		
Distribution	5%	95%		
Intelligence	85%	15%		
Internal Security	95%	5%		
Legal	50%	50%		
Manufacturing	5%	95%		
Marketing	5%	95%		
Mining	5%	85%		10%
Production	5%	95%		
Public Relations	34%	66%		
R&D		50%	50%	
Security	90%	5%	5%	
Storage	5%	95%		
Surveillance	95%	5%		

Now you may think that Kill missions are the best. In level 1 and 2 missions perhaps the others don't give high returns, but in level 3 and 4 missions the others can give great returns on time spent.

In some level 3 and 4 missions there may be a bonus room (e.g. Angel Extravaganza). These rooms may require a key to access the room. This key may just be a specific type of dog tag and although the mission itself should drop this as loot, you may be able to buy the item off the market or through a contract - they can be used repeatedly. Note however that these bonus rooms are extremely difficult and best attempted in a small fleet.

9.2 Agents and NPC Standing

- Mission running is a good way to get your standing up with a NPC. This will help with refining (+8 perfect?) as well as getting a jump clone (+8 minimum) but it will take a long time to get there unless you are running level 3 or level 4 missions
- Agents won't speak to you until you have a certain standing with the corporation (and them), check on their info to see what you need. Or use the [formula](#) to check.
- If you want to keep your standing with other factions so you can visit other areas, consider declining missions that kill other player factions. Besides, these missions don't provide bounties. Otherwise, you will need to go and run missions for that faction.
- Rogue drone missions also don't give bounties and no loot other than crystal things but in a recent patch they now give decent Salvage.
- Increasing Social Skills is good to increase the ISK rewards, LP rewards and standing increases from missions
- Storyline missions will give good standing increases as well as often good rewards so always try and do these.
- Don't decline more than one mission every four hours per agent and don't let missions expire or you will lose standing.
- [COSMOS missions](#) will increase faction standings dramatically.

9.3 Minimizing Risk/Efficiency

- If you think you could get in trouble, align to a warpable object (preferably away from the enemies) so you can get out quickly.
- Leave at least some capacitor for warping, you may not make it to your destination but you will be able to get out.
- Always fit your ship for the enemy's weaknesses and damage types.

Group	Dmg 1	Dmg 2	Weak 1	Weak 2
Angel Cartel / Gist	Explosive	Kinetic	Explosive	Thermal
Blood Raider/Corpus/Dark Blood	EM	Thermal	Thermal	EM
Cent/Sanshas Nation/Sanshas	EM	Thermal	EM	Thermal
Bounty Hunters	EM	Explosive	Thermal	N/A
Dread Guristas/Guristas/Mordus Legion	Kinetic	Thermal	Kinetic	N/A
Domination	Explosive	Kinetic	Kinetic	N/A
Mercenaries	Thermal	EM	Thermal	N/A
Rogue Drones	Kinetic	Thermal	EM	Thermal
Shadow/Serpentis/Core/Pith	Kinetic	Thermal	Kinetic	Thermal

- Be careful of warp scramble and webbing enemies, they can be easily identified but you should always kill them first – just in case! They don't exist in level 1 and 2 missions.
- Keep the enemies at your optimal as much as possible, and put everything you have on a target until it is destroyed.
- Take care of your drones: retrieve your drones and don't send them out until after the spawn has aggroed you – don't let them wonder and attack non-aggroing groups.
- Don't forget to retrieve drones before warping.
- Don't forget to bookmark mission rooms so you can come back and salvage/loot after handing the mission in.
- Although you may not want to fit them for battle, having an armour repairer and a hull repairer in your cargo can be handy so you don't have to spend money getting armour and hull repaired which costs and so you can get back in the fight quickly.
- As a rule of thumb, in battle don't let your ship get hull damage unless you are pretty confident you are about to make the last kill. Since it takes a few moments to go to warp, if you leave it too late you may get blown up before you hit warp. You will find that your hull will take damage much quicker than your shield and armour. If you like to take those risks you should always have a Damage Control Unit which gives very good resistances to hull.
- If you target an enemy try and stay in the battle until that enemy is utterly destroyed. If not, their shields will have a chance to repair, and you will face almost as big a challenge as you had before.

10 PvP

I cannot write much here mainly because there is just too much to write about. I would need another 40 pages to do

it any justice. This section is aimed at some common themes and general advice.

10.1 Avoiding PvP

Know how to get around before you engage in a fight.

The Don't List:

- Don't go into low-sec on autopilot
- Don't go into low-sec in a large/slow ship
- Don't join a corp that gets war-decced often!
- Don't steal loot from other players wrecks and don't take stuff from floating jet cans
- Don't use or have in your cargo hold very expensive trade supplies or faction gear (people can scan you and suicide to get it). At the least, don't use autopilot.
- Don't smack talk and don't join a corp where they do.

The Do List (in low sec):

- Do use a tough and fast ship to travel through low-sec (preferably tech 2 frigate).
- Do check the star map for "pod kills" and "ships destroyed" in the last hour.
- Do watch local at all times
- Do use your on-board scanner if in a system for any length of time.

After a battle, whether win or lose, dock and review the combat log. It will give you details that can help you learn for future situations

10.2 Running Gate Camps

Posted on BattleClinic by Jodi Goulsti

Often, noobs will be tempted by the riches of low-security space. Usually, trying to get into lo-sec space means running through gate camps. Surviving most (non-smart bomb-spamming) gate camps is pretty easy in smaller ships. The most important thing is not to panic when you see all those flashy reds. Until you double-click in space or align to something, you remain cloaked for 20 seconds. They know you are in the system and they know there has been gate activation but you are not on their overview.

For a "standard" camp (no bubbles, just a bunch of ships) zoom in on your ship and see which way you are oriented. Practice this on a clear gate so you can know your ship and where it's oriented when cloaked.

Find the warpable object that requires the least change in direction. You want whatever object your ship is already "pointing at," not the object that is the shortest warp distance -- orientation is key.

Warp to 100 on that object. You should have a relatively short align time and be in warp before they can target and warp scramble you. As soon as you get there, warp to 100 on another object (obviously not the camped gate). Chances are, if you're in a destroyer they won't bother chasing you even to your first warp point.

Obviously, the bigger the ship and the more armor plates you have, the slower you will align. In that case your best bet is usually to reapproach the gate you just came through as fast as you can and jump back through. Anyone that shot at/scrammed/webbed you will not be able to follow.

If there is a bubble your objective is to get out of it as quickly as possible which means MWD/AB away from it.

Of course, if there are always times when losing your ship is inevitable... if they have a bunch of ships just smartbombing everything, you're going to pop and lose your pod. Such systems are fairly well-known and should just be avoided (see: Rancer).

There are more tactics, but these are the basics.

10.3 Don't lose your Pod

This is not how to avoid PvP or avoid losing your ship in PvP, but how to avoid being Pod Killed.

Assuming the demise of your ship is fairly certain, align to a warpable object before the ship is destroyed and start hitting the "warp to 0" key (it is a quick press button at the top of the overview). Do this repeatedly and don't do anything else. Keep this going until your pod is actually in warp.

Sometimes the Eve servers can't handle all the requests coming through. Although many get rejected as invalid whilst still in your ship (because you are scrambled), it has a back log to process once your ship is destroyed and you board your pod. The first commands the server processes once in your pod is "warp to" and recognising it as a valid command does so immediately.

This can give you a 2-3 second head start on someone trying to scramble your pod, as they have to target you first which takes a few seconds. Some ships are very fast at targeting so this can't help all situations and in 0.0 space warp bubbles will get you regardless, but generally this trick will save your pod.

11 Trading and Invention

Trading encompasses a lot of things and the beauty of it is that you can make ISK from it whilst off-line. There are three main areas of trading as well as Invention:

Margin Trading: This is the act of buying items at low prices and selling at higher prices.

Refine Trading: This is where you buy items at low prices, refine them to their base materials and then sell the materials at high prices or use them for production.

Production Trading: Using Blueprints and materials, you manufacture items and then sell them on the market.

Invention: Creating Tech 2 Blueprint Copies

Items can be bought and sold on the Market or through Contracts but I will concentrate on the Market for the moment. You can only see and interact with the Market in your current region. You will need to travel to another region to see that market and interact with it.

It is also important to increase skills in the Industry and Trading skills categories. To make money from trading you need a calculator at hand and if you have a spreadsheet then even better. I suggest you read this entire section because all trading is interrelated.

It costs ISK to make ISK so you will start out small and increase as you build more capital. You may start making orders worth 100k but soon you will be at millions. When you get to the stage of 10m orders and having 50m in buy/sell escrow at any point in time, I suggest getting those expensive (20m ISK approx) trading skills which reduce brokerage/transaction tax.

All the trade skills are helpful and many of them only need to be trained to level 2 or 3 to get the most benefit from them

11.1 Get yourself a Hauler

It is important to get a good industrial ship for trading generally (also for mining) and buy cargo expanders to make it hold more. Tech 2 cargo expanders only need the Hull Upgrades skill to level 2!! Increasing the spaceship command skill for the Industrial will make it hold more and allow you to buy the biggest Indy.

A Mammoth (requires level 4 in Minmatar Industrial) with 4x cargo expander II's can hold 17,800m³.

The Iteron Mark V (Gallente) is the biggest T1 Indy with 6k m³ as base and can use 5 Expanded Cargohold II's but requires level 5 in the Gallente Industrial skill.

You can buy Cargohold Optimization rigs at a very high expense which will increase the volume even more. Some Indy's can then hold a jetcan (27k m³) or more depending on all of the above.

If doing low-sec hauling then a Transport ship (Tech 2 Industrial) is quite a bit harder.

11.2 Margin Trading

Buying low and selling high - sounds simple and it is. The trick is recognising a good deal and capitalising on it to achieve the greatest return on time and ISK. Know the market and investigate.

A word of advice before we start is when placing orders, double check the decimal place. It is a tad annoying buying something at 10 times the normal price. It can easily happen when you have 20 orders to review and modify. It happened to me and I lost 32 million in a few seconds. No joke – not happy with that one.

The trick is to buy lots of items at low prices, collect them up and sell them where there is demand. So set your range to how far you are willing to travel to pick them up – remember opportunity cost.

You don't pick them up straight away; you wait until you have a full cargo hold (assuming you have the capital to buy that much)

Transport them to a system/region where demand is high or buy prices are higher and either do a quick sell or put them up for sale on the market.

Try and use your maximum allowance of orders. Put in a few really low buy orders in some items without much of a market and you may pick up a few things very cheaply.

Modify orders by a small amount. You can cut into everyone's profit if you change prices too much. Be aware that when people "quick sell" all they see is the highest price available to them. So it doesn't matter if your buy price is only 0.01 ISK above the competition. Even in sell orders, there's no point in undercutting everyone else by 50%. People will mostly buy from you even if your price is .01 ISK below the competition. If you do, then other players will have little choice to undercut you straight away so all you have done is dropped everyone's profit in one foul swoop.

If you get into a price war, then battle it out or leave the market for that item until prices return to your favour. If only one opponent then perhaps try and contact that

player and arrange to reset the prices. Arrange a cartel...
It is not illegal in Eve!

You will be surprised at how much margin you can make by selling items away from market hubs and/or in low-security space. Many people are lazy or have high opportunity costs for travel. I have made many sales one jump from a trading hub at prices 50% higher than the hub.

Most simple of the strategies but it still works is to buy at a station using a low "buy" order. When you have enough, put them on market with a "sell" order in the same station. In many cases you can still make good profits without transporting at all!

If you have a reasonable amount of capital, you notice a slump in prices for a particular item and you know the market well; buy up as much as you can and just sit on it for a while. You may have to wait a month or more but you may be able to sell the items for significant margin just by waiting.

Some good ISK can be made in transporting goods across regions but you will want to have an alternate character in the other region so that you can not only check prices but also make trades instantly. Margin trading across regions is best for when you are happy to be on autopilot for an hour or so to rearrange your sock drawer. Be careful of suicide gankers.

11.3 Refine Trading

A personal favourite, it uses the basis of Margin trading, but the purpose is not to resell the item, it is to refine it and sell or use the materials. You will need to have the Refining and Refinery Efficiency skills as high as possible. Also a +6.5 standing with the corporation you are melting at will negate their cut. You can still make ISK without these, but you are cutting all profit margins by 25% (don't quote me but it is huge).

As an example, web stasifiers are often dropped as loot. Although most people use stasifiers, the supply is huge so most people don't need to buy them (at least the low meta level versions anyway). As such demand is low - so low in fact that there is no opportunity to margin trade and hence the only buyers are really those that are doing the Refine Trading.

Depending on current market prices of materials, web stasifiers can be produced for about 20k ISK. One can hence refine them and sell the materials for around 20K ISK with good skills. It is not uncommon to be able to buy them for much less - like 10k. Now imagine buying up 300+ per day at 10K/unit. Enough said.

At the least, increase your refine skill so that you can make more ISK from your basic loot rather than sell them to Refine Traders!

Place buy orders for several items that you have identified within a range that you are willing to travel with your industrial. When you have accumulated enough in a particular system/station then go pick it up and melt at a station you have good standing in.

Note that the modules will take up less room than the materials in most cases, so never melt them at the pickup location. For example, if your Indy can hold 27km³ then it can only hold 2.7m units of tritanium (worth 8.1m @3isk), but could in fact hold 5,400 stasifiers which when refined might produce 100m ISK worth of materials (including 3.7m units of tritanium which is 1.5 loads worth straight away).

Another thing, be careful about melting meta 1+ items. Often they don't refine to as much as you can sell them for (with sell orders). Especially meta 3, 4 and above, which sell for much more and have greater demand for actual usage.

11.4 Production Trading

Production Efficiency should be trained to level 4 before you even start production trading. But as soon as possible, take it to level 5. It will reduce materials wastage by 4% per level. You will not be able to compete effectively in the market unless you do this.

You will also want high standing with the NPC station that you are doing the production at to reduce the job costs but these costs are marginal compared to wastage.

If you buy a Blueprint you will be able to use certain stations to produce items. Blueprint Originals (BPO's) can be bought off the market, they are quite expensive but they never run out. Blueprint Copies (BPC's) are just a limited run copy of the original and so can be bought relatively cheaply.

You will need a stock of materials to produce items - such as Tritanium and Pyrite.

It will take a certain amount of time to produce 1 run. A Stabber Blueprint (cruiser) takes 12,000 sec/run = 3.3 hours and 1 run = 1 unit. A Phased Plasma L blueprint takes 300 seconds = 5 minutes to produce 1 run = 100 units. The skill "Industry" will save some time from production and so will the PE level of the Blueprint. These are not that important though as for everything except

battleships and other very large items, production is fairly quick and job costs for production time are quite low.

Each BPO will state how many materials are required to produce a run of units. However, BPO's are inefficient and there will be wastage of 10% (rarely but sometimes more). In fact you will mostly find it cheaper to buy off the market than produce using un-researched BPO's/BPC's.

To make them more efficient, you need to research Material Efficiency. I will describe this a bit but it takes a long time and can be quite expensive. Your only alternative as a new player is to buy a Blueprint Copy (BPC). You cannot get these from the market. You can only do this from Contracts.

11.5 Researching Material Efficiency

I'll make this brief. Base wastage is 10% for most BPO's. So if one production run requires 110,000 units of tritanium then 10,000 of that is wastage. Researching Material Efficiency will reduce this wastage as follows:
 ME of 1 will reduce wastage by half down to 5%
 ME of 5 will reduce wastage by 1/6 down to 1.67%
 Etc.
 The formula is: $10\% / (1 + ME)$

You can see that at an ME of 10 you are getting pretty efficient and that you get decreasing returns. You can achieve 0% wastage in the cheap "small" item blueprints, but for most things it is impossible to achieve 0% wastage.

Researching takes time. A Stabber BPO takes 240,000 s/ME = 1.77 DAYS for 1 ME. So to an ME of 10 you are looking at 18 days of research. Most Ship BPO's are researched to 40 (0.024%).

On the other hand a Phased Plasma L takes only 6,000s/ME = 100mins so in one month you can research this to an ME of 432 and hence reducing wastage down to 0.023% - but actually this is overkill – see below.

The Metallurgy Skill reduces the time taken to do material efficiency research.

At what level would you think the Blueprint is "perfect"? Simply take the largest volume of materials required per run and divide by 5. This is the Perfect ME. For a Phased Plasma L BPO where the largest volume of materials required is tritanium (1376 units). An ME of 276 (1376/5) will give "perfect" efficiency. Unfortunately a Stabber Blueprint would require an ME of 61,497 to be "perfect". Clearly not possible in this lifetime as it would take approximately 468 years to research! Better I think to research to 40 and take the hit of 8,000 ISK approx worth of wastage.

The point of explaining this is so that you can either know how much to research or otherwise recognise a good blueprint copy. It should also help you understand the effective minimum costs of producing items so that when you are trading generally you will know when you see a good buy.

Since material wastage from BP's can be reduced 90% by researching or buying a BPC with an ME of 10, it is important to never use a BPO/BPC that is less than this. Further, since wastage from lack of Production Efficiency skill is 20%, it is clear that getting Production Efficiency to level 5 and hence 0% wastage is much more important than having a BPO/BPC with ME >10.

However, if you are looking at researching your own BPO's, be prepared for a long wait and a high cost if using public facilities. You would be looking at millions for a couple of weeks of research. Further, you may need to wait up to a month before your research starts because of the high demand for these slots AND the maximum time you can research in one hit is for a month. Public facilities in high security space are the most expensive.

You may want to consider joining a corporation that will allow you to use their Player Owned Structure (POS) to do research – they may not charge anything and there may not be any waiting time. POS's are quite expensive to run, but if your corp has a 10% tax rate then you would be paying your fair share for its operational costs.

Material Requirement Formula

The calculation for how many materials are required is as follows

Materials =
 $BPM + \text{round}(BPM * (0.2 - 0.04 * PESL)) + \text{round}(BPM * BPW / (1 + BPME))$

where:

BPM = Base Materials required of BP (i.e. perfect)
 PESL = Production Efficiency Skill Level
 BPW = Base Wastage % of BP (normally 10%)
 BPME = The Researched Material Efficiency level of the Blueprint
 ..And round means that the adjustments are rounded.

This is calculated PER RUN, so there are no economies of scale for producing a maximum number of runs (other than the installation cost)

So you have Production Efficiency skill up to level 4 and a Blueprint Copy at ME of 40. Let's say the BPM = 1,000 Tritanium:

Tritanium required:
 $1,000 + \text{round}(1,000 * (0.2 - 0.16)) + \text{round}(1,000 * 10\% / (1 + 40))$
 $= 1,000 + 40 + 2 = 1042$

Obviously 42 is “wastage”. Taking PE skill to level 5 will remove the 40. Taking the ME to 200 would remove the 2.

11.6 General advice on Production Trading

For production you will want to be able to get your materials cheaply which is another use of Refine Trading (i.e. rather than selling the materials you use them in production – vertical integration!). This may well cover all your tritanium and pyrerite needs but for zydrine and other materials it will just supplement your stock. Alternatively you can mine the materials or put buy orders on the market.

Remember that however you get the materials, you must look at opportunity cost to determine how much profit you are making from production. Sure you mined all the materials, so they're free, right? Wrong. They “cost” you how much you can sell them for.

You can produce items which you may not yet have the skills to use. But with ships, remember that you won't be able to transport them easily. You can fit up to 2 large Cruisers on a good industrial, otherwise you will either need to sell it at the station you produced it at or pay for someone to transport it.

Produce items that are used a lot in PvP and/or ammunition. You will get a lot of sales of Ammunition/Charges because they are used up and good frigates sell like hotcakes because they are cheap and always used for PvP fun.

Don't produce items that are “dropped” as loot regularly because there is a lot of supply and very little demand.

Monitor the demand and supply for items before starting production. Watch the current trade orders and if it appears they get filled quickly then you have found a high volume market. This may be good for selling a lot quickly, but you will probably find margins are a lot lower. Sometimes it is better to sell less items for higher margins!

Spread your sales, selling in a hub is the start, but you should consider selling in surrounding systems, you may not get as many sales in these systems but you can charge more and overall you will have more sales.

Have a detailed spreadsheet which will accurately show you how much your production is costing. You may find that the materials are worth more than current market prices of the item you are selling. As with all trading, you need to watch the market closely for fluctuations.

Again, take Production Efficiency to level 5 as soon as possible, and don't use BPO/BPC's with an ME of <10.

Finally, it is often good to be margin trading in the items you are selling from production. I.e. have buy orders for the items you are selling from production. This will a) supplement you production stash cheaply, b) reduce competition in sales orders from margin traders and c) generally give you market power to manipulate prices more.

11.7 Contracts and Trade Window

Most things you can get off market but there are some things that only contracts can do.

All contracts have a 10k ISK broker fee for setting up and when selling items a deposit is required. Transaction taxes and further broker fees will apply if ISK is involved.

Caveat Emptor - Let the buyer beware. Some contracts are quite literally scams and rip-offs so make sure you know exactly what you are getting before you accept a contract. The “description” of the contract may not be what you are actually getting. See section on [Avoiding Common Scams](#). Check the details carefully.

Unlike the market, you can review all contracts set up in other regions, even the entire universe. It is good to do this so you can see how other people value their contracts.

If you are selling several different items via contract, it is often better to sell them individually in separate contracts rather than bundle them up. This is because a) most people are after a specific item and don't care about the other stuff and b) it enables people to search for their specific item and will see your contract easier.

Once purchased, Blueprint Originals and Blueprint Copies can only be sold/bought via contracts because each item is unique. Be it the research or the number of runs remaining (BPC's). You can buy a Blueprint copy on the cheap, but it might only have one run remaining or be un-researched, so compare BPC's to the BPO. Once you have bought a BPO it can only be sold via contract, again because it could be researched.

Some contracts are to transport goods. Be careful that you have the cargo space in your ship to be able to transport it and also be careful of where you need to go. Taking something through low-sec may be dangerous and you may lose the cargo and hence your collateral.

Named/Fleet issue items such as Gisti-B-Type shield boosters (which are very good) can only be bought/sold via contract.

You can get some good deals via contract so it is beneficial to watch out for opportunities.

You can actually trade directly to players in the same station that are on-line using the Trade Window. Usually best served with someone you trust (see section on [Avoiding Scams](#)). The primary benefit is that it completely avoids brokerage and transaction fees since it is a direct trade.

Contracts are a good way to transfer items to other players when either not on-line at the same time or otherwise in different areas of space. E.g. say you do a joint mission and share the loot but your team mate has to go.

With people you trust, create contracts for the items you want to transfer with just the items and no ISK amount and then just do a direct transfer to/from the player for the ISK amount. You can't avoid the brokerage entirely (min is 10k ISK) but you can avoid the transaction fees this way.

11.8 Copying

Another part of Production trading is to copy your researched Blueprint Original into copies and sell these copies via contract. The science skill will reduce the time it takes to copy a BPO. The benefit is that for large and/or expensive items you can create copies with a small number of runs so that people can manufacture their own equipment/ammo/ships rather than buy off market/contract. Some people may buy larger run copies for actual production trading themselves, because at the end of the day BPO's are expensive.

Copying takes the same amount of time as research in that if it takes 240,000 seconds for 1 ME of research, it will take same for 1 full run copy (modified by skill level in Science). If the max runs are 15 and you only produce a copy with 5 runs then it will take one third the time to make the copy. With the exception of Rigs, copying BPO's are like ME and PE research in terms of costs. I.e. only the installation and time cost of station and no materials required. Rig BPO's require "Data Sheets" to copy.

11.9 Research Agents & Invention

Research Agents.

Research Agents can be found in specific corporations of each faction.

- Amarr: Carthum Conglomerate, Viziam, Khanid Innovations
- Caldari: Ishukone Corporation, Kaalakiota Corporation, Lai Dai Corporation

- Gallente: Creodron, Duvolle Laboratories, Roden Shipyards
- Minmatar: Boundless Creation, Core Complexion, Thukker Mix

They are similar to regular agents in that they have a quality and a level, thus you need sufficient standing with their corporation to access them. However, unlike regular agents you also need to have certain skills to access them as follows:

- Science - Level 5
- Laboratory Operations - Level 5
- Research - Level 5
- Research Project Management - Level 4 or 5 depending on your dedication and how many agents you want to work simultaneously.

Once you have access to a research agent you will then need to get them to research a particular area. Each agent has specialty areas which they can research in IF you have the appropriate skill.

- Amarrian Starship Engineering
- Caldari Starship Engineering
- Gallente Starship Engineering
- Minmatar Starship Engineering
- Astronautic 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

So choose the field of research, train up in that skill and then assign the agent to research that field. They will provide you a certain number of RP's per day based on the quality/level of the agent and the level of your skill in the field of research.

You can also run missions for the agent once per day and they give you same Research Points as a reward.

You can trade in your Research Points for specific Datacores related to that research field that are then used in invention. They do not invent anything themselves.

Invention

Invention is based on taking a blueprint copy for a lower tech item, adding certain specialized equipment, and attempting to create a blueprint copy for a higher tech item.

You need the following to invent

- A single run or max run blueprint copy of the Tech I item
- Two types of specific datacores (multiple)
- One data interface of a particular type
- The required skills to invent

- An available invention slot

You can increase your chances of success by adding:

- An actual Tech I item (meta 0 – meta 4)
- A decryptor of a particular type
- A full run BPC (rather than single run)

You need the following base skills to invent:

- Electronics level II
- Engineering level II
- Electronics upgrades level V
- Science level V
- Hacking level II
- "Race" encryption methods level I

Invention slots are laboratory slots and located in specific public stations but similar to research slots, they are often maxed out and expensive. So best to have use of a corp POS invention slot.

Tech 1 Blueprint Copies

Adding these will improve your chances but won't otherwise make a difference. Either use a single run or a max run copy for greater chance. Anything less than a max run will be treated as a single run. The copy is destroyed in the invention process.

Datacores and Data Interfaces

- Datacores are provided by Research Agents but you can also buy them or get them from specific exploration sites. They are expensive. Datacores are specific to research fields. They are destroyed in the invention process regardless of success.
- Data interfaces are manufactured using ingredients found in Hidden Complexes and in certain COSMOS. They require using Hacking and Archaeology to harvest, along with additional skills for manufacturing. All blueprints that can be invented are explicitly linked to one of the eight types of data interfaces, listed under the "Invention" tab of the blueprint's bill of materials. The data interface is never destroyed in a job, and is spit back out as soon as the invention job is installed, thus only one is needed.

Decryptors and tech I items

Each data interface has a corresponding group of decryptors, and each Tech II item has a corresponding group of Tech I items. The decryptors and Tech Is are not necessary for invention attempts, though they will improve your chances. The quality of the tech I items are classified by their meta-level. The higher the meta level of an item, the more it increases the chance of an invention success. Only items up to meta level 0 to 4 can be used to help the invention process.

Note that the decryptors and tech I items will be destroyed in the invention attempt irrespective of its success.

Properties	A	B	C	D	E
Probability Multiplier	0.6	1.0	1.0	1.2	1.8
Max Run Modifier	+9	+2	+2	+1	+4
ME Modifier	-2	+1	+1	+2	-1
PE Modifier	+1	+4	+4	+5	+2

	Amarr	Caldari	Gallente	Minmatar
A	Circular Logic	Interface Alignment Chart	Symbiotic Figures	Circuitry Schematics
B	Sacred Manifesto	User Manual	Engagement Plan	Operation Handbook
C	Formation Layout	Tuning Instructions	Collision Measurements	Calibration Data
D	Classic Doctrine	Prototype Diagram	Test Reports	Advanced Theories
E	War Strategon	Installation Guide	Stolen Formulas	Assembly Instructions

12 Mining

To be truly effective at mining you need intensive skill training to get into Mining Barges/Exhumers and the associated equipment. But there is still ISK to be made in Mining for the new player.

Note that most ores in high sec don't give high payoff, but Omber can be found in some mission roids and is often an exception because it is a required item for specific missions and so you can sell it for 85 ISK rather than the refine value of 36 ISK.

- High Grade Ore: Arkonor, Bistot, Crokite, Spodumain, Dark Ochre.
- Mid Grade Ore: Gneiss, Hedbergite, Hemorphite, Jaspert, Kernite and Omber.
- Low Grade Ore: Plagioclase, Pyroxeres, Scordite and Veldspar.

Some Skills you will want to work on:

- Mining 5
- Astrogeology 5
- Astrogeology 5
- Drones: Heavy 4 and Mining 5
- Drone Interfacing 3-4 (5 takes way to long so wait on it.)
- Engineering 5
- Electronics 5
- Hull Upgrades 4



12.1 New Player Mining – high sec

So what are your choices?

A) Destroyer/ Frigate and Giant Containers – A destroyer has much bigger cargo hold than a frigate and with 2 cargo expanders can then hold a fair amount. You could use two mining lasers and still fit enough weapons that you could defend yourself in 0.5-0.8 space. Or use 3 mining lasers and stay in 0.9-1.0 space. A frigate that gets bonuses to mining will be good but will have less high slots to use. Either way, you will still be making frequent trips back to a base unless you are in 0.5-0.8 security space and drop some Giant secure cargo containers ([see section on cans](#)).

B) If you want to watch a movie or go out for an hour, send your Industrial to a roid belt and target the largest roid possible (use a survey scanner to see which has the most ore) and let it sit there and mine away. Come back every hour to change the asteroid or make a trip to base. Very slow and not much money it for time taken but basically free money because it's otherwise time that you wouldn't be making anything. Obviously stay in 0.9 or 1.0 space so no NPC pirates and really this is only good if you can't spend time at the computer.

C) Do a few missions until you get one that has asteroids in one of the first rooms. Complete the objectives but don't hand in the mission. Go and get your mining ship and bring it to the asteroid belt and mine away, each time the cargo fills up, put it into a jet can. Eventually you will have enough in the can to fill up your Industrial. Go get your Indy, pick up the can contents and take it back to base. See notes:

- Jet cans don't last that long. If out there for a while, transfer the contents into a new can every 40 minutes to be safe – Put a timestamp as the name.
- Being in the deadspace is safer than anywhere else. It takes a fair bit of effort for a player to try and scan you down. It is possible though. Note however, that if you are not in 0.9 or 1.0 security space, NPC pirates will spawn in your temporary asteroid field. Also note that

you will usually only get Veldspar. If you get one with Omber then definitely mine this.

- Mission bonus time is usually a couple of hours so if the bonus is worth stopping mining, do so before the time is up, but if your can is still out there, make sure you bookmark the spot!
- On server restart, and assuming you have completed the objectives, all asteroids etc will disappear from the deadspace regardless of whether you have handed in the mission. So give yourself some time. If you haven't completed the objectives, everything including the rats will respawn – this is called mission farming.
- Mission mining is also used a lot with advanced miners – mining barges/exhumers.

There are really not that many other options unless you have a buddy/corp to watch your back and protect you and your can. But then, they could be off making ISK, so consider that as well.

You will start off just in a Frigate, Destroyer or even an Indy for mining because the skill requirements are low. But there are larger ships that also get bonuses for mining such as Cruiser, BC or even a BS. A BS setup to mine can be just as effective as mid end mining barges. You may consider getting a larger Indy to haul because it can hold a lot more so less trips and less inefficiency.

12.2 Using Jet Cans/Containers

There are really four types of cans. Jet Cans, Station Containers, unsecure containers and secure containers

Jetcans can be created from thin air by jettisoning some cargo. This automatically creates a can that can hold 27k m³. However, it will only last one hour if left unnamed or two if given a name and anyone within 1500m can open it and take the contents. Although this is considered theft and allows you to fight them, it is still possible and you can't just leave the can there for significant periods of time. Note that you cannot use a tractor beam on a wreck or can that is owned by another player (not in the fleet or player corp).

Station Containers are massive containers that must stay in a station because they are just too big to move. They are good for keeping some of your items separate from the bulk of items – ordered chaos!

Unsecure containers can be anchored (need the Anchoring skill to level 1) in 0.8 security space and below (i.e. not allowed in 0.9 and 1.0). They will stay there forever, so long as you access them at least once a month. You can't put them within 1.5km of other cans or objects. They don't hold much: Giant containers are the biggest and hold 3.9k m³. The problem with these is that

anyone can steal from them. They are good to separate cargo hold of your Indy and make it hold more.

Secure Containers are similar but you can set a password so that others cannot access them.

If you find an asteroid belt without many cans, you can setup a ring of Giant secure containers within 10km of the belt. To do this, anchor a container about 7km away from several asteroids. Then, orbit that container at 2km and drop cans around it. You should be able to place about 6 containers around the central one all within 10km of the asteroids. $7 \times 3.9 = 27.3k \text{ m}^3$.

The idea then is to fill up each can with your mining ship whilst you mine, then go get your [hauler](#) and pick it up. If you are really into safe mining, then this is very efficient. Finding a nearby belt that you can do this with may be tricky though.

You can also use containers to expand how much your industrial can hold. If your Indy can hold $20k \text{ m}^3$ then you could place up to 6 Giant containers in its cargo which will take up $3k \text{ m}^3$ each ($18k \text{ m}^3$ total) but because they hold $3.9k \text{ m}^3$ each your Indy will then be able to hold $25k \text{ m}^3$! Unfortunately, the items have to be small enough to fit in each container so this is good for ore and small items but can't be used to hold a packaged cruiser for example. It also takes a bit of fluffing about putting the ore in each container.

12.3 Low-Sec Mining

Similar to other operations in low-sec you will want to set up a safe spot. Align your ship to the safe spot and be on the lookout for pirates and recon probes. You may want to have some protection close by as well. The pay-off in low/null sec is much higher but the risk is also much higher.

12.4 Advanced Mining - Barges/Exhumers

Really the money is in Mining Barges / Exhumers. If you are going to go for Mining Barges, train for two weeks and get into a Retriever (10m). The next stage up is the Covetor (20m) but it will take another month of training to get there, and for one extra day of training you can get yourself a Hulk which is the best of the best (at a small cost of $100m+$ skill books). Use EveMon to check this training time out because it will depend on attributes and learning skills.

Mining barges/Exhumers use strip miners which all other ships cannot use. They also have a decent cargo hold – retriever is $2k \text{ m}^3$, Covetor $4k \text{ m}^3$ and then the hulk = $8k$

m^3 . These can be increased with cargo expander mods and cargo optimization rigs.

For about $150m$ ISK you can hence increase the Hulk to almost $20k \text{ m}^3$ cargo capacity which will take about 20 minutes to fill up with Ore. Veldspar at 7 ISK/unit will hence return $1.4m$ ISK per 25 minute round trip - much more with valuable ores.

These ships can also fit drones and can therefore defend themselves from rats in 0.5-0.8 space. To really maximise the payout, you will want a couple of miners in Hulks setup to mine efficiently with mining speed rigs and mods (rather than cargo). Then have someone else hauling in a good Indy. This person should have good skills in gang bonuses for mining (Leadership skills) so that both the miners get the bonus. This is what mining corps specialise in and can really strip an asteroid field in a short amount of time, especially with the new Orca mining support craft.

Also be aware of ship bonuses. Some are better at gas or ice mining than ore mining.

12.5 Advanced Mining – Ice

We have only discussed Ore mining so far and that is because there is much more of it around and because of some complexities with Ice mining.

Ice Asteroid belts are much less numerous than Ore. Usually only one belt in each constellation. However, Ice Asteroids are so huge that you really can't deplete an Ice Asteroid let alone an entire Ice belt.

Ice (e.g. Glacial Mass) can be refined to produce specific commodities that are used to fuel Player Owned Structures (POS). Ice is mined as a single block of $1,000\text{m}^3$ per Ice Harvester module on a Barge/Exhumer. The cycle time is much longer than normal mining turrets or Strip Miners. In fact, whereas bonuses for Ore mining work on amount of ore per cycle (60 sec mining lasers and 3 minutes for strip miners); bonuses to ice harvesting work to reduce the time per cycle. They start at 500 seconds (8.3 minutes) per cycle but with skills and support modules/rigs/implants etc can reduce this quite significantly.

Now because of this long cycle time, even with a Hulk you are only going to get 3 blocks every 8 minutes or so. But if you can increase your cargo bay to $>9k \text{ m}^3$ you can then handle three cycles. This is great if you want to do some ironing because you don't need to pay too much attention to it. You only need to watch for rats and then haul every 20+ minutes.

13 Complexes/Exploration/Wormholes

13.1 Complexes

This is a detailed area and can get quite confusing in that there are many variations.

Deadspace = When you need to use an acceleration gate to enter.

Plex/Complex/DED = Often referred to as plexes or DED's they areas that anyone can enter at any point in time (once found). Unlike Missions you don't need an agent to allow you to enter.

You are limited access by the type of ship:

Level	Ship Max	Possible Loot
1	Frigate	Small C-Type
2	Destroyer	Small B- Type
3	Cruiser	Small A-Type
4	BC	Medium C-Type
5	BS	Medium B-Type
6	BS	Medium A-Type
7	BS	Large/XL C,B,A,X - Type
8	BS	Large/XL C,B,A,X - Type
9	BS	Large/XL C,B,A,X - Type
10	BS?	Large/XL C,B,A,X - Type?

The above are the maximum size hull types that are allowed to enter so you can take smaller ships in especially as support for a small fleet. They also allow the tech 2 and faction variants. E.g. a Heavy Assault Ship and Republic Fleet Stabber can enter a level 3 DED.

For 7-10 I don't know the split of loot types and I'm not sure whether the level 10's allow capital ships.

There are several types which I will explain below.

Static Deadspace DED's

There are static (they are always there) DED's of level 1 and level 2. Look for them by looking at the star map and in the options filter "colour stars" by "DED". These require keys to progress rooms which are obtained by destroying a specific structure I'll refer to as the overseer building. Enemies will respawn frequently (approx 15 minutes), though the overseer buildings less frequently (approx 1 hour). The overseer buildings (especially in the final room) may drop faction/named loot which is worth millions (meta 10 or 11). The overseer building often looks a little like the now defunct Miir space station, in any case it will be relatively easy to destroy.

Since they key can only be used by one person (and their gang within 10 seconds of use), you may find it hard to get through to the next room because of competition for the key – especially on weekends or high volume time periods.

One tactic that helps is to place your ship at the entry gate to the first room just prior to server shutdown. Watch closely for when the server restarts and log in immediately. Your ship will automatically warp to the entry gate which you can then activate straight away.

Then you will want to try and tank damage long enough to destroy the overseer building and get the key before anyone else arrives. Otherwise destroy just enough enemies until you can tank the rest and then go for the building. If you have blown up the building, collect the can – don't let it sit there or someone may arrive and just steal it.

You will get bounties (except against drones), normal loot, and can salvage but no faction standing increases.

Now, feel free to try a level 1 DED with a frigate, but as soon as you can move on to a level 2 DED with a destroyer (that can salvage). Even if you just do the first room you will get plenty of good bounty, salvage and loot.

I did state that a beacon will show up on the overview. There may actually be static sites that are hidden and hence need to be scanned down, but these are generally either data centre locations (for turning in tags in exchange for faction standing), or hidden agent-in-space locations rather than actual DED's.

If scanned down, these static DED's will show up in your results as a "Waypost". They are only in specific constellations.

Static COSMOS DED's

These can be level 1 up to level 6. They can also be found using the star map. These DED's are related to [COSMOS](#) missions. They do not drop faction/named loot but rather provide specific items related to a specific COSMOS mission. If scanned down they will show up in your results as a "Waypost". They are only in specific constellations.

Dynamic Exploration Sites

There are several types: [LADAR](#), [RADAR](#), [Magnetometric](#), [Gravimetric](#) and [Unknown](#) (which includes Dynamic Deadspace DED's, Escalation Sites and Wormholes). They need to be scanned down using Core System Probes. All of these are explained in the [Exploration and Scanning](#) section.

Dynamic COSMOS Sites

These are hidden [RADAR](#) and [LADAR](#) sites that can be scanned down. They remain in the COSMOS constellation and hence referred to as being COSMOS but they will not relate to COSMOS missions. Once completed, they will generally re-spawn in the same constellation.

13.2 COSMOS Missions

In certain regions of space (e.g. for Minmatar = Nakugard/Inder/Traun in Ani constellation) there are agents that are located in space rather than in a station. You will see beacons in your overview. Warp to these locations and you will see ships with agents in them that you can talk to like regular agents.

These agents provide special ONE-OFF missions (in most cases anyway, they are non-repeatable even if you fail them). They are generally harder than regular missions but they provide good rewards - especially from loot, and good faction standing increases.

I would suggest that only when you are extremely proficient at a level 2 agent mission should you attempt level 1 COSMOS missions. Same goes for level 2 etc.

Some of the missions may require high end skills such as hacking, so make sure you have the skills and equipment to complete the mission. Further, most of these missions require you to pretty much complete a quest and collect a whole bunch of items. The quest may involve running a deadspace complex (as mentioned above). However, in most cases you can actually do the requirements and collect the items for the COSMOS mission prior to accepting the mission, in fact it is advisable to do so.

13.3 System Scanning – Exploration/Wormholes

The Apocrypha upgrade has completely changed the dynamics of exploration and scanning. It is now a much quicker and intuitive process with lower skill requirements to get into - but it still requires fairly high skills to be proficient at it.

Core System Probes are used to discover a hidden site or wormhole which has been dynamically spawned. It will hang around until it has been “completed” except for Wormholes which use a combination of time and transit mass.

Using the Combat Probes you can scan down a player ship in low-sec in order to kill them or scan down a mission runner in high sec so you can salvage all his wrecks (called Ninja salvaging). But we'll come back to this.

Basic Equipment

Core Probe Launcher I – Only Core Scanner Probes
 Core Scanner Probes -15 CPU, 40 St, .25AU base range, .125AU base Dev
 Most any ship will be able to fit this standard launcher.
 Cloaking Device

Basic For all scanning needs:
 Expanded Probe Launcher I – Allows Core, Combat and Survey (moon analysis). However with CPU of 220 will require larger ships or covert ops frigate to handle.
 Core/Combat/Survey Probes

Recommended Equipment:
 Covert Ops Frigate
 Gravity Capacitor Upgrade Rig (10% bonus)
 Sisters Core Probe Launcher -CPU 10, 5% bonus – use if only Core System probing
 or
 Sisters of Eve Expanded Probe Launcher – CPU 110, 5% bonus to strength – use if doing many types of scanning
 Sisters of Eve Core/Combat Probes (10% bonus to strength but same range/deviation)
 Advanced Cloaking Device

Skills to get: (minimum, recommended)

Astrometrics (1,4) – allows using the Core and Combat probe Launchers. You will need level 2 to use Expanded Launchers and level 5 to use Deep Space Probes
 Astrometric Pinpointing (0,4) – 10% scan deviation
 Astrometric Triangulation (0,4) – 5% scan strength
 Signal Acquisition (0,4) – 10% scan time ??
 Survey (1,4) – 5% scan speed ??
 Cloaking (1,4) - for advanced cloaking
 Science (3,3) - pre-requisite
 Jury Rigging (1,1) - for rigs

Optional Skills (minimum, recommended)

Covert Ops (1,4) if going tech 2 (will increase scan strength and allow using expanded launchers)
 Hacking (1,4) use codebreaker modules for RADAR sites
 Archaeology (1,4) use analyser mods for magnetometric sites
 Jury Rigging (1,4) for tech 2 rigs

Previously a lot of the skills, mods and ships concentrated on reducing scan time, but now they focus on scan strength and scan deviation. The probes only take a few seconds to scan whereas previously they took several minutes.

For both Core System Probing and Combat Probing you will want to be cloaked whilst doing the scanning and if in low/null sec space you may also want to be in a safe spot. This ensures you don't get scanned down yourself which may result in getting killed in low-sec but otherwise may give away your findings.

The first thing to do before you start scanning is setup another overview setting just for scanning. You will want to include things like Drones and Planets. But exclude moons. These are things you don't want to see in battle necessarily but are important for scanning. Once that is set up, change the scanner setting option to "Use overview settings" and make sure you have the scanning overview setting active.

13.3.1 Probing Process

If you have your probing ship setup and skills, the next step is to go find these spawned items.

First let's discuss how a Core System Probe works. There is only two probe types and they can scan for all signature types (Ladar, Radar, Gravimetric etc). Let's ignore the Deep Space probe for the moment and just look at the Core Scanner Probe.

Range Setting (AU)	Dev (k's km's)	Strength
32	16	1.25
16	8	2.5
8	4	5
4	2	10
2	1	20
1	0.5	40
0.5	0.25	80
0.25	0.125	160

For Core System Probing you will only be able to scan for "Cosmic Signature" and "Cosmic Anomaly".

You can drop multiple probes, their scan ranges can overlap and their scan strength will be boosted in these overlapped areas. However, note that only the "best" four probes are used to boost the strength, any others are ignored.

Note that sites can now appear anywhere in a system (previously were within 4AU of a planet)

a) Step 1 – Placement and 32 AU Scan

The process is to firstly warp to a safe spot if in dangerous space but otherwise it doesn't matter where your ship is. Open the system map and the scanning box and then launch a probe.

You will notice that the probe is represented by a white sphere (the current selected range) and a small cube in the centre with four arrows pointing outwards in each direction.



You can move the probe by either selecting the cube and dragging or selecting an arrow and dragging to ensure the probe only moves on one axis. The probe won't actually move just yet, so you can play around with it a bit.

Set the range of the probe to 32 AU, move the probe to close to the centre of the system check that the probe range covers all the planets easily. If not then you may need to move the probe a bit. Alternatively, you can do more than one scan or throw out a second probe to cover a larger area. You could even use a Deep Space Probe if you have the skills.

Activate the probe and in 10 seconds your scanning box will show the results. The strength of the probe at this range is quite low but it should see a site if it exists.

Now left click on the scan result and you should see a red sphere within the white sphere of your probe. This result means that within the red sphere there is a site (or more than one even), however we have used only a one probe which in 3D space cannot pinpoint location and because the signal strength is so low the deviation is very large and could be anywhere within the sphere. This means you will need to focus in on the site using triangulation methods.

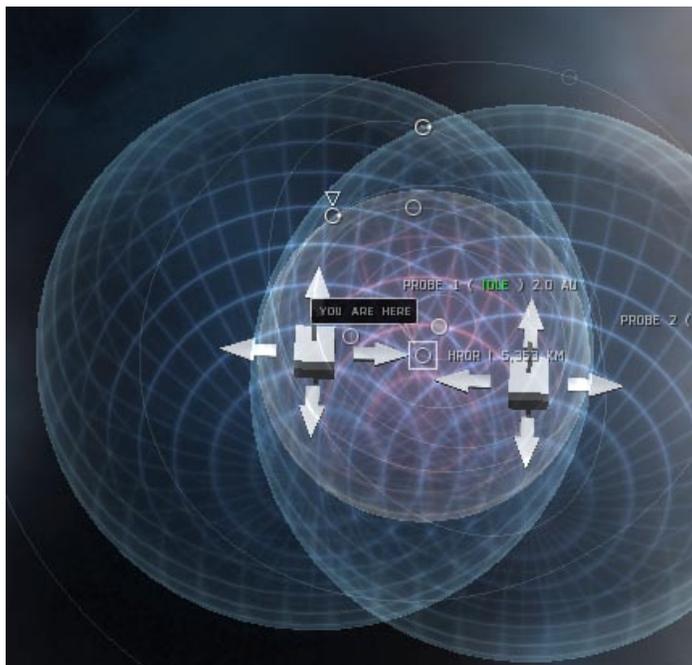
If nothing comes up then go to another system. You are likely however to get several hits.

b) Step 2 – Triangulation

It's not truly triangulation but that term is familiar so let's use that. Let us assume that you got a single hit showing an "unknown" at 7.5AU range (from the probe not your ship). This will be shown on the system map as a red sphere. Note that this means that there is a site somewhere in the red sphere.

Assume we got a pretty good hit on the first scan and a site was found within 2AU of the first probe.

Now the idea is to start narrowing down the location. So drop another probe, set both probes to 2 AU (i.e. > the range of the hit). Place them near the edges of the red sphere so that the sphere is entirely covered by at least one probe.



Then press activate again. The probes will warp to the new locations and then take a few seconds to scan.

The result should be narrowed down to a much closer range and deviation with a red sphere.

I used **two** probes to make it graphically easier to show. However, it is best to use **four** probes in a tetrahedral pattern. The idea is to keep narrowing the range of the probes and bringing them closer to each other to get to a stage where you have a signal strength of 100%.

*NOTE: you will only be able to warp to the site if you have **four** probes covering the site and have 100% signal strength result.*

This may take several attempts and a bit of playing around with the probe positions. This may take several minutes for the entire process. Much quicker than the half hour it took using the old system. On any particular scan you may get:

A red sphere: When very low signal strength and when only one probe has covered the site. For the next scan ensure that the entire sphere is covered by at least one probe.

A red circle: When two probes with moderate signal strength result. For the next scan ensure that the circle is covered by at least three probes.

A red dot or two or even three: When you get pretty good signal strength you may end up with more than one dot which if the probe ranges are already low is in fact likely to be the same site, just seen with reference to the various probes. For the next scan make sure that all dots are covered by all four probes.

The result of this scan should give you one dot and it may not be red but rather yellow and if lucky green. You should now be able to reduce the scan ranges of your four probes to 0.25AU and cover the site with all four probes and do one final scan. It is highly likely that this final scan will give you a 100% signal strength and with four probes will allow you to warp to the site.

If not, then you may not have the skills/equipment high/powerful enough to find the site. A quick way to check is to deactivate all but one probe, lay that probe over the dot with the shortest range and if <50%, sorry but you will never get it.

c) Step 3 – Investigate site

Once you have pinpointed the location and shown the option to warp to the site (right click on the scan result), you can warp to it. Now you should have a fair idea as to what the site is because it shown in the scan result but to be sure, warp to it and check it out.

Usually better sites can be found in low-sec but you can still find sites in high security space. Often the better the site relative to the security space you are in the lower its scan strength and so harder to pinpoint. This means that if it takes a fair while and several attempts to pinpoint it is probably a pretty good site.

Only use your scanning ship to find the location of the site. Bookmark the spot and then go and get the appropriate ship to make use of the site. If you don't know what exactly the site is, you can attempt to enter it using your scanning ship but stay cloaked and bug out asap.

Below I describe each of the main site Groups and types. These haven't been changed with Apocrypha with the exception that unknowns now include Wormholes.

13.3.2 Site Type - LADAR

These sites are for harvesting Mykoserocin (lowsec) and Cytoserocin (nullsec) gases which are used in the production of boosters. These sites are generally only

found in COSMOS constellations. In lowsec there should be no rats guarding the gas clouds, but in nullsec there should be. These sites are not deadspace, and will not despawn until all gas clouds have been mined out.

13.3.3 Site Type - Magnetometric

This is a semi-combat site where you will find cans that open with either *archaeology skill (using analyzer module)*, or *salvage skill (using salvager)*. The cans will mostly drop salvage loot and tech 2 bpc's with 0 research and 2 runs. Occasionally they can drop faction POS module bpc's such as Domination Small Autocannon Battery, or even a faction tower bpc. These sites are deadspace, and will trigger a despawn event once you attempt to hack a can. Killing the rats will not trigger the site to despawn.

13.3.4 Site Type - RADAR

This is another semi-combat site where you will find cans that open with *hacking skill (using codebreaker module)*. With the exception of COSMOS radar sites, which drop items used in booster production, the cans will drop datacores, decryptors, data interface bpc's, and the parts to build them. This stuff is all used for inventing t2 bpc's. These sites are deadspace, and will trigger a despawn event once you attempt to hack a can. Killing the rats will not trigger the site to despawn.

For each radar or mag site there are 4 "bases". If you look at the solar system map, you can see the name of the site once you have spawned it. Ex. Profession - Hacking û Base 3 - Lowsec - Guristas. These range in quality from the lowest, base 1, to highest, base 4. This does not mean you will make more from a base 4 than a base 1, but the potential is there. Like anything else related to exploration, loot is random. Sometimes you get cool loot, other times it's a waste of probes and ammo

13.3.5 Site Type - Gravimetric

These contain asteroid belts for mining. The asteroids are generally better, and more numerous, than what you would find at a static asteroid belt in the area (high/low/nullsec). There are usually rats floating around, either of the local faction, or rogue drones. More rats may spawn while mining, so be alert. Hidden asteroid belts range in size from small to large. Small sites take a few hours to complete, while a large belt can take days to mine solo. These sites are not deadspace, and will not despawn until all asteroids have been mined out

13.3.6 Site Type – Unknown (Incl Wormholes)

There are 4 types of sites that may show up as unknown.

a) Cosmic Anomaly - This will only show up on a scan if you have the cosmic anomaly scan group selected.

Anomalies are not true exploration sites. These can be scanned down using either the ship's on-board scanner, or with scanning probes. They are always combat sites; they have no gate and are not deadspace, but they do have a very small chance (less than 1%) to escalate into a rated DED complex appropriate for the area you are in (highsec = 1-3/10, lowsec = 4-6/10, nullsec = 7-10/10)..

b) DED complex - These will all have a pop-up window when you enter the deadspace area which tells you the rating of the complex on a scale of 1-10, 10 being the hardest. Most of the harder sites (6/10+) will require more than one ship to break the tank on the boss. These complexes have the potential to be the most lucrative of all exploration sites since they have a good chance to drop one or more deadspace modules (ex Gist B-Type Large Shield Booster), faction ship bpc's (ex Machariel bpc), etc. You will know what type of deadspace loot a site can drop by the rating. 1/10 can drop Small C-Type modules, 2/10 can drop Small B-Type modules, and 3/10 can drop Small A-Type modules of the local faction. 4-6/10 can drop C, B, A-Type Medium modules respectively. And, 7-10/10 can drop C, B, A, X-Type Large/X-L modules. In addition to the chance of deadspace modules, all DED sites will drop a few n'th tier overseer's personal effects which can be worth a bit. These sites are deadspace, and will trigger a despawn event once you kill the boss or boss structure.

c) Escalation site. If you are only scanning for deadspace signatures, and there is no pop-up message indicating you are at a rated DED complex (x/10), then you have found an escalation site. This is a combat site that once completed will have a chance of escalating to a similar, but slightly harder complex. Once you kill the site's completion trigger - this is usually a 'boss' rat or a structure like a bunker - if it escalates you should get a pop-up message and an entry in your journal under expeditions. If you are not sure whether you have completed the site, warp out of the area for a couple minutes, and then warp back. If the site is still there then you have not found the completion trigger. If it is gone, you have completed it, but did not get the expedition.

You will usually have to travel around 5 hops each time it escalates, and each expedition has roughly 2-5 sites to complete along the way. Each time you get a new escalation, you have 24 hours to finish it or you will hit a 'dead end'. The exact chance of escalation is unknown, but the first part has a much lower chance than the latter parts of the expedition. I would estimate a 50% chance to get the first escalation in a series, then around 80% for each site after that. The rewards for these expeditions are moderate. The rogue drone sites will drop heaps of t2 salvage at the end (50+ pieces), and the faction ones have a chance of dropping deadspace modules just like a DED complex. The initial part of the escalation site - the one

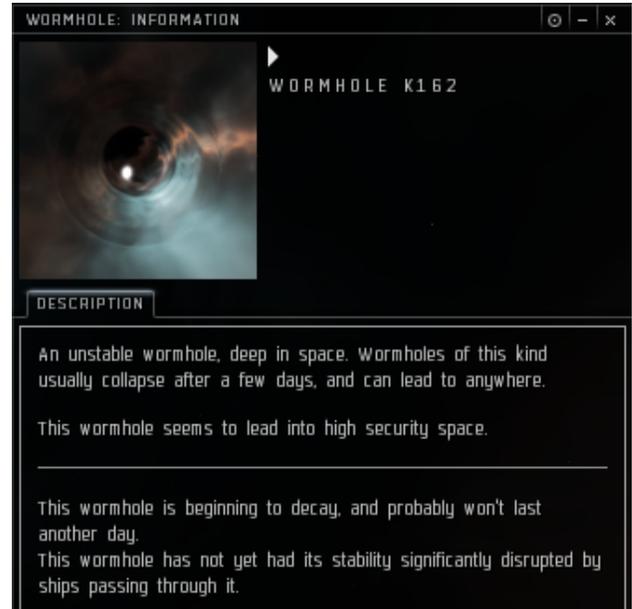
that you have to scan out - should be deadspace, but if it does escalate via an expedition, the new site will not be deadspace.

d) Wormholes and Uncharted space



New to Apocrypha you can find wormholes which will take you to a preset randomly generated destination. The wormhole will collapse after a certain amount of time (random - a day to several days) and/or after a certain amount of mass has passed through it (also random). Click on the info of a wormhole and it will state whether it is likely to collapse soon or not.

The info tab will also tell you whether the wormhole leads to high sec, low-sec, null-sec or unknown space.



The wormhole will allow you to come back though it, but make sure you bookmark both sides of the wormhole!

A wormhole leading to known space may end up many jumps away. This can be fun to see other parts of the eve universe and could lead to good trading opportunities or fleet operations.

The real fun is where the wormhole leads you into unknown space. Obviously since this space is uncharted, there is no CONCORD presence and thus is automatically 0.0 security. It will consist of a system with some planets and the only entrance-exit is via the wormhole. No static asteroid belts.

The only way to find stuff in uncharted space is to scan it down. As to what you will find, well in addition to many of the site types mentioned above (but remember you are in 0.0 space) you will also find Sleeper sites. These sites will drop tech 3 materials and blueprint copies!

It is advisable to be well prepared for any trip through a wormhole leading to anywhere but high sec space, meaning insuring your ship, have sp clone and even better be in a low-implant jump clone. Further, it is much safer to fly in a small fleet – and important to have someone that can scan.

With uncharted space you are going into 0.0 space and thus, there is a significant chance you won't make it back, either because of the dangerous NPC's or because of other players.

If the wormhole collapses whilst you are in uncharted space, you are in trouble, especially if you don't have a ship that can scan down a new wormhole. There will always be a way out of unknown space at any point in time – it just might be a long way from where you started.

Note that there can be multiple wormholes in any system leading to/from different areas. Further, in unknown space you may find other wormholes leading to other parts of unknown space.

13.4 Combat Probing – Other Players

This scanning is entirely for tracking down other players. Scan groups can focus on ships and drones.

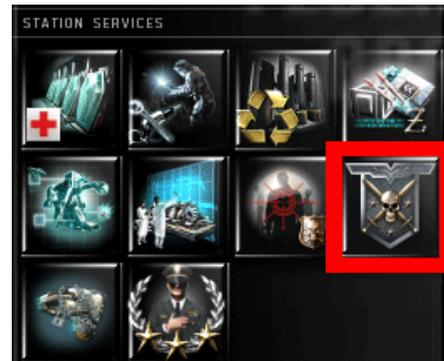
In theory the process is exactly the same as Core System Probing, however you should note the following:

- You will need to setup safe spot bookmarks at various points in the system so you can do your scans safely rather than being near planets.
- You should be cloaked and don't forget though that if the enemy is cloaked, your scan won't pick them up.
- The larger the enemy ship the higher the scan resolution and easier to scan down.

14 BattleClinic's Exclusive Guide to Factional Warfare

By Matthew Woodward, Game Designer, Emyprean Age

All right you no-good clutch of Fedos, listen up! My name is Sergeant-Major Illivia. Today I'm going to teach your scrawny hides how to enlist in the Federal Defence Union, complete a mission for the glory of the Federation, and not die too often in the process! You've all graduated from the Academy as qualified capsule pilots. I'm guessing you think this makes you top dogs. Well I got news for you, sunshine – you don't know JACK, and it's a big bad world out there so you'd better listen good!



Now you all here have shown one shred of intelligence so far by joining the FDU, where you'll help us take that psychopath Heth down a notch and show the Caldari State who's the real power in this part of the EVE cluster. The Gallente Federation stands for freedom and tolerance and kicking the goddamn crap out of anyone who gets in our way. I'm sure you've heard all kinds of scuttle about Malkalen and Luminaire, and some of you are concerned with our ability to hit back. Well, don't worry your pretty heads - the sleeping giant has awoken and soon there's going to be a whole world of trouble!

You kids are the sharp end of that trouble, gods help us, so it's my job to make sure you do a decent job of it. First things first, I hope to hell you've all completed your graduate programmes! If not, you'll want to head back to your agents and finish the tasks he's set you. These will give you essential information, and they'll give you the hardware to act on it. Make sure you remember the basics at all times – keep your ship insurance up to date and your clone current!

Now, assuming you're all smart enough to remember that, you're just about ready to get your feet wet and join the

war effort. There's no time like the present, and no such thing as being "too new" to start fighting. You – yes, you at the back there with the floppy hair – can and will make a valuable contribution right now! The first thing you need to do is enlist in the glorious FDU!

Every station belonging to the Federation – including this Academy station that we're standing in right now – has a Militia Office. This is prominently displayed on your Neocom interface: it's the big square button with the shield and skull on it. Hit that, and a nice friendly window will appear in your interface. You'll see here you've got some news, a bit of fancy writing dreamed up by some bureaucrat, and the INFORMATION section.

READ THIS! By joining the FDU you're throwing your lot in with the war effort, and there's a WAR going on out there. Be prepared to be shot at, and don't expect the Caldari or those Amarrian nutcases to welcome you into their core systems with open arms. Does that scare you? Of course not, you're IMMORTAL!

If you haven't chickened out, hit the "Enlist Me" button and tell the nice computer that yes, you're sure you want to crack some Caldari skulls.

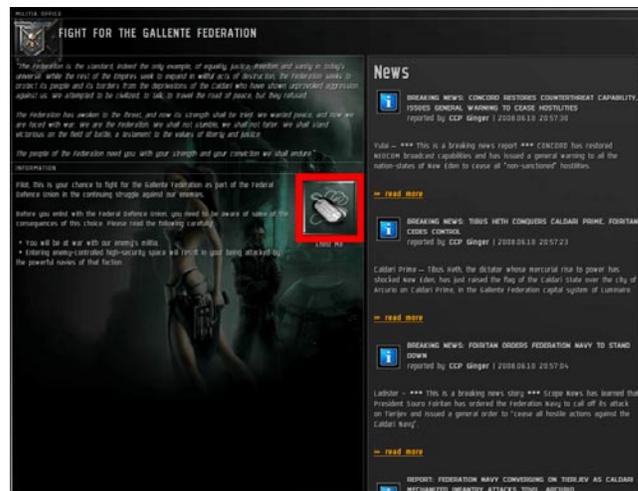


That's assuming you've demonstrated some basic loyalty to the Federation, you're not in your own fancy corporation already and you have a fully-registered and paid up capsuleer license. Congratulations, you're now a member of the Federal Defence Union.

OK, so that's step one done, you're signed up. Step two is to get you shipped out to the front to do something worthwhile with your infinite life!

You'll note a few things have changed once your application goes through. The screen you used to enlist now has a whole lot more on it, including who you're at war with, your rank, and a whole bunch of statistics. This will all become useful to you soon enough, but for now you can just close the window. You'll also see that your "corp" communications channel has new people in, and there's a

new channel called "militia". In these channels you'll find your fellow soldiers, including fellow rookies as well as old hands who can help you out if you're in trouble.



Now, to war! Hit the "corporation" button on your neocom – yes, that one on the left with the five gold stars. This pops up a screen with some information about your new corporation, the FDU. Under the "details" section on the Home page you'll find the Headquarters station listed – Ostingele IV. This is as good a place as any to start your career, so set it as your destination and make your way on over there.

Be aware: you're now a soldier in an active war! If you see another pilot marked by a white star on a red background, they are your enemy and will shoot you given the opportunity! Your dinky little frigate should be fast enough to get away from most enemies, but don't take any chances, and DON'T rely on the autopilot. If I had a single ISK for every new soldier who lost their ship because they were on autopilot in hostile space, I'd be richer than all the Empires put together!

Also be aware that your trip will take you into Low Security space. Out here on the borders, anyone can take a pot-shot at you if they choose to, and while sentry guns will fire on illegal aggressors, don't expect them to finish the job before you're toast. Your best bet is to just stay sharp and keep moving, and you'll reach Ostingele without any serious damage.

Right, so you're at home base and you're ready to kill. Next step is to talk to an agent and get hold of a mission. Looking at you all I don't think you're ready for a Level II assignment yet, so I'd recommend talking to Mr Ferrier and seeing what he has available.



So, say for example he gives you... what do we have in the database right now... here, "starbase smashing". This looks like a promising one. The objective here is to knock out the main reactor of a partially-constructed Caldari starbase, which, if our intel is correct, should bring the whole thing down in one beautiful explosion. You'll notice that the objective is located deep inside Caldari territory – you didn't think we were paying you to do the easy jobs, did you? But this should be well inside your capabilities, if you play it smart. If it's not, well... find some friends! Nothing increases the chance of success like a wingman, and if you scratch his back he'll scratch yours.

Get yourself geared up and then head out there! You're in the middle of a combat zone so the first order of business is reaching the objective, but be prepared to dodge enemy ships and keeping moving. Eventually, if everything goes to plan, you'll get to the target system, and you'll warp in to the objective.

From this point, you're working against the clock: once you show up, every pilot in the system can see where the target is, so move quickly! Get yourself into the site and knock out that reactor! You'll want to try and avoid weapons fire from the defenders, but they're not flying capsule-wired hotrods like you kids are, so they shouldn't be a big problem. Once the reactor goes down, your job is done, and you just need to get home alive.

But say, while you're in there doing the dirty work, someone else shows up, someone enlisted with the Caldari? That's when you use your smarts! Size them up and decide how much of a threat they present. If you're on your own and the enemy looks to be pretty experienced, you might want to cut and run, maybe find somewhere safe to hang out and come back again for another go later. On the other hand, maybe you've got a couple of wingmen with you and he's sitting there all alone; then, by all means, kill the bastard! If he's showing the red-and-white star he's a valid war target, and if you can bring him down

you get to loot whatever he was carrying, which can be a nice money-maker!

So you finish your objective, kill or evade anyone trying to stop you, and you get back home alive. Let your agent know you've done the job, and he'll reward you.

Congratulations! You've taken your first step on the road to becoming a bad-ass pilot!

As you complete more missions you'll find your rank within the Union increasing, and your wallet and loyalty point totals climbing steadily. Soon you'll find yourself able to buy bigger ships, take on tougher jobs and form your own posse. You may even find yourself looking forward to the next proper fight, waiting for the red mist to come down and the adrenaline to kick in as you put down another Caldari dog!

After all, if you lose the fight, all you need is another ship and you can get straight back into the fray – and if you win, the loot and the glory are yours! Now get out there and show the world what the Federation can do, soldier!

15 Alternates and Additional Accounts

As you know by now, you can create up to three characters on any one account. Since you can only train one character at a time, splitting your training amongst two or three characters will mean training similar skills twice or three times and you will find that it takes a long time to progress your characters. Note also that you can only be logged in as one of these characters at any one time since they are part of the same account.

Alternates are then best used to perform one specific task that require little or no skills and that you don't want your main to do. Perhaps to scout out low-sec systems before you attempt to enter with your main or to keep tabs on market prices in other regions. If your corp gets war deced, an alternate that you haven't made a corp member is ideal for scouting (so long as you can identify your enemies as they won't appear as red to your alternate).

Now, if you have enough cash to pay for an additional account for a while, you can train up a character in this secondary account to a sufficient level that you are happy with and then pay a small fee to port the character over to your main account as one of your three alternates. This alternate may then be more useful. For example, you could train up an alternate in purely trading and industry skills or just as a covert ops pilot. This may mean 3 months or more of training and hence paying for two accounts for a while but at the end of it you will have a quality alternate or two that can therefore let your main concentrate on more pressing skills. You could then choose to close the secondary account down, keep it running and train up a third alternate or even use it permanently.

Maintaining more than one account is obviously a costly thing to do but there are several benefits from having more than one account. It really comes down to two things: a) being able to train more than one character at a time and b) having more than one character logged in at the same time.

You don't have to install additional copies of the Eve client necessarily you just need to run the program twice (or more), log in under each account and "alt-tab" between them. You may need to tone down your graphics settings so your machine can handle it and expect increased lag.

You are not limited to this but just some things that this may allow you to do:

- Mine and Haul at the same time

- Trade and haul/ transport across regions whilst doing missions etc.
- Do a mission and follow with a salvaging/looting ship.
- If really good at multi-tasking, even bring in both accounts to missions or in PvP ops. Beware though of the increased lag and system performance – you could lose both ships!
- Provide leadership bonuses with the alt so everyone including your main gets bonuses.

16 Avoiding Common Scams

This section is not for the purpose of telling you how to do it so much as how to avoid it. The world of Eve and many on-line games create a situation of ignominy. People have the opportunity to be real thieves and prats without any real repercussions. Unfortunately this is unavoidable. But you can avoid them.

I am hoping that by getting the standard tricks to be public knowledge, the tricks will no longer work. At the end of the day, none of these will work if you pay attention and are careful in your dealings.

This is by no means a complete list but just some of the more common ones. I would thank the character that compiled this list but they were a scammer and I don't subscribe to these acts. I have never been scammed myself, but have been approached by scammers many times.

- **Contract Item Deception-** Scammer creates a contract for an item that has an expensive counterpart (e.g. rocket launcher I for a rocket launcher II) and sets the price to the counterpart's market price @90 or 80%. They may change the Description field also. They then drag the contract into the Local chatbox, changing the name to the counterpart's and spam until they get a hit.
- **Contract Price/Quantity Deception –** Scammer swaps the price and quantity around. E.g. contract cost is 4m ISK = 2,00,000 units of tritanium for 2 ISK each when in fact you are getting 2 units of tritanium for 2,00,000 ISK each. Note that sometimes you will see similar scam in the market tab which relies mostly on you hitting the wrong one by accident.
- **Contract WTB Price Deception-** Scammer creates a WTB contract for some shiny item but sets what the price to 0.01% of the actual price (e.g. item costs 38 mil they put in 38k) then spam local saying "WTB for actual price". Note: the WTS version of this is the reverse.
- **Courier Contracts-** Scammer sets up a contract to transport a small amount of worthless but reasonable m3 to a 0sec station and set the collateral required quite high. The idea is that it is unlikely they will succeed because they will get podded and hence lose their collateral. Obviously this can backfire.
- **Want to Gift-** Scammer sets up a WTB contract to a seller in local. Everything is legitimate except for the fact that instead of paying money they receive the money.
- **Freeform Contracts-** Freeform contracts are just text boxes nothing else. Scammer will type in a bunch of stuff to make it look like a wts item exchange. Scammer will put in the collateral for the same price as the item they are supposed to be selling.
- **Trade Window Deception I-** A scammer changes the name of a T1 ship/item and names it to the t2 or faction variant of it. They put out an ad in local for it (convo or trade). They may put the real ship in first in case you check it and after a couple seconds they switch it out for the t1 variant.
- **Broken Market /WTB –** Scammer puts out a fake WTB statement in local at higher price than local market. They may complain about how their market is bugged and need someone to buy that item for them. What the victim doesn't know is that the scammer has bought up all the items in local and is probably the only seller at a high price. The victim buys these goods at these inflated prices but when they try to sell to the scammer, he suddenly doesn't want to buy them anymore.
- **Corporation Shares –** Corporation shares are a big waste of time for anyone not in the corp and actively involved. Unless a specific scheme has a lot of street cred, it is most likely a scam so better to avoid it.

17 Goodbye and Thanks for all the Fish

Well it's time to sign off. We hope you have found this guide useful and that it has helped you enjoy Eve as much as we do. Thanks to everyone that has contributed their time and knowledge to making this guide something that we are very proud of.

This game will be fun from the start, but it is a long game, and you can't expect to be in a Battleship in a week. No, no matter how long you spend on-line, at the end of the day you are limited by the skills you have and this quite simply just takes time, so don't feel pressured to be on-line all the time because it won't make that much of a difference in the end. Sure, you can collect more ISK, LP's and corp/faction standing the longer you stay on line but there'll be a limit as to what you can spend it on.

The developers have cleverly set this game up so that being a long term player is the only way to progress. It is quite the opposite from WOW, where basically the more time you spend actually on-line the faster you progress. The Eve approach is better I think because it creates a more loyal base of players and only those with a certain level of maturity have the patience for it – like this guide.

The game is very deep with untold options for your career. Unlike WOW, you are not restricted to one path and you don't get penalised for changing paths. Although a jack of all trades is never as profitable or effective as a specialist, you may find that the variety is much more rewarding than the cash or continued success.

Don't rush, take your time, explore the galaxy, experiment and interact.

One last thing: There are many ISK sellers out there. It is against the ULAE but it happens and will continue to happen unless CCP take a more active approach to barring these characters. Also, the ISK sellers make their ISK by using methods that are also against the ULAE like macro mining, which then makes it more difficult for real players to mine. At the end of the day, if you purchase ISK then not only are you supporting people that lessen the game experience for others, but you are also cheating yourself the satisfaction of the true game experience of getting there yourself – It's the journey not the destination. Your call, do so at your own risk.

Fight Smart!
Ruprect Belganor
Player Guide Editor and Contributor

18 Appendix I – Quick Ref Tables

Skill Category	Use
Corporation management	Creating a Corp and Being CEO. Anchoring useful for mining
Drones	Using/stats drones
Electronics	CPU stats, Targeting and Scanning
Engineering	Powergrid and cap stats, shields
Gunnery	Using/stats Turret weapons
Industry	Mining, Production and Refining
Leadership	Give gang bonuses
Learning	Increase attributes and speed of training
Mechanic	Armor/Hull Stats, Rigging, Salvaging
Missile Launcher Operation	Using/stats Launcher weapons
Navigation	Using/Stats of AB's, MWD's and ship speed and agility stats
Science	Blueprint Researching, Copying and Invention, Scanning, Jump clones, Mining
Social	Agent/Corp Standing, LP and Security
Spaceship Command	Using/Stats Ships
Trade	Market/Contracts – order limits, range to setup/change, transaction costs

Skill Category	Primary Att	Secondary Att
Corporation management	Mem	Char
Drones	Mem	Per
Electronics	Int	Mem
Engineering	Int	Mem
Gunnery	Per	Will
Industry	Mem	Int
Leadership	Char	Will
Learning	Mem	Int
Mechanic	Int	Mem
Missile Launcher Operation	Per	Will
Navigation	Int	Per
Science	Int	Mem
Social	Char	Int
Spaceship Command	Per	Will
Trade	Char	Mem

Agent Usage Formula:

$$F=2*(A-1)+0.05*Q$$

Where:

A = Agent level (1 to 5)

Q = Agent quality (-18 to +18)

F = The corp, faction or personal standing required.

Agent	Kill	Courier	Trade	Mine
Administration	50%	50%		
Advisory	34%	66%		
Archives	5%	90%	5%	
Astrosurveying	40%	30%	5%	25%
Command	97%	3%		
Distribution	5%	95%		
Intelligence	85%	15%		
Internal Security	95%	5%		
Legal	50%	50%		
Manufacturing	5%	95%		
Marketing	5%	95%		

Mining	5%	85%		10%
Production	5%	95%		
Public Relations	34%	66%		
R&D		50%	50%	
Security	90%	5%	5%	
Storage	5%	95%		
Surveillance	95%	5%		

Group	Dmg 1	Dmg 2	Weak 1	Weak 2
Angel Cartel / Gist	Explosive	Kinetic	Explosive	Thermal
Blood Raider/Corpus/Dark Blood	EM	Thermal	Thermal	EM
Cent/Sanshas Nation/Sanshas	EM	Thermal	EM	Thermal
Bounty Hunters	EM	Explosive	Thermal	N/A
Dread Guristas/Guristas/Mordus Legion	Kinetic	Thermal	Kinetic	N/A
Domination	Explosive	Kinetic	Kinetic	N/A
Mercenaries	Thermal	EM	Thermal	N/A
Rogue Drones	Kinetic	Thermal	EM	Thermal
Shadow/Serpentis/C ore/Pith	Kinetic	Thermal	Kinetic	Thermal

No. Of mods	Approximate Stacking Penalty adjustment
1	100%
2	87%
3	57%
4	28%
5	10%

Name	Dmg Type	Base Dmg	Multiplier
Acolyte I	EM	15	1.15
Warrior I	Explosive	15	1.3
Hornet I	Kinetic	15	1.45
Hobgoblin I	Thermal	15	1.6

Sec	Sec Desc	Player Rating Restriction*	System Notes
ALL	ALL	>-1.9	
1.0	High	<-2.0 cannot	There are no rats in asteroid belts and you cannot anchor cargo containers. Police and gate guns are prominent
0.9	High	<-2.5	
0.8	High	<-3.0	Polics and gate guns are prominent
0.7	High	-3.5	
0.6	High	-4.0	
0.5	High	-4.5	No police but there are gate guns. Players can be attacked and killed without CONCORD response
0.4	Low	-5.0 is outlaw and cannot enter any high sec system	
0.3	Low		
0.2	Low		
0.1	Low		
0.0	Null		No system defences

DED levels

Level	Ship Max	Possible Loot
1	Frigate	Small C-Type
2	Destroyer	Small B- Type
3	Cruiser	Small A-Type
4	BC	Medium C-Type
5	BS	Medium B-Type
6	BS	Medium A-Type

7	BS	Large/XL C,B,A,X - Type
8	BS	Large/XL C,B,A,X - Type
9	BS	Large/XL C,B,A,X - Type
10	BS?	Large/XL C,B,A,X - Type?

Here is a small list of what rigs do and what kind of parts they need to be assembled:

Armor rigs require:

Charred Micro Circuit
Contaminated Nanite Compound
Fried Interface Circuit

Role: Armor improvements, salvaging improvements.
Drawback: Reduced speed.

Astronautic rigs require:

Burned Logic Circuit
Charred Micro Circuit
Thruster Console
Alloyed Tritanium Bar
Fried Interface Circuit
Tripped Power Circuit

Role: Improved speed and agility (also AB and MWD). Some hull upgrades.
Drawback: Less armor.

Drone rigs require:

Broken Drone Transceiver
Burned Logic Circuit
Charred Micro Circuit
Tripped Power Circuit

Role: Upgrades for all drones.
Drawback: Reduces ship's CPU.

Electronic rigs require:

Conductive Polymer
Damaged Artificial Neural Network
Tripped Power Circuit
Fried Interface Circuit
Charred Micro Circuit

Role: Improvements to hacking, archaeology and scanning. Also reduces the requirements of CPU and Capacitor for Electronic modules and ECM.
Drawback: NONE

Electronic Superiority rigs require:

Damaged Artificial Neural Network
Fried Interface Circuit
Tripped Power Circuit
Charred Micro Circuit
Burned Logic Circuit

Role: Upgrades to ship's sensors, ECM modules, targeting, tracking etc.
Drawback: Less Shields

Energy Grid rigs require:

Burned Logic Circuit
Tangled Power Conduit
Tripped Power Circuit
Melted Capacitor Console
Fried Interface Circuit

Role: Improvements to Capacitor, powergrid.
Drawback: NONE

Energy Weapon rigs require:

Charred Micro Circuit
Defective Current Pump
Fried Interface Circuit

Role: Improvements to Energy Weapons.
Drawback: Guns need more powergrid.

Hybrid Weapon rigs require:

Charred Micro Circuit
Contaminated Lorentz Fluid
Fried Interface Circuit

Role: Improvements to Hybrid Weapons.
Drawback: Guns need more powergrid.

Missile Launcher rigs require:

Burned Logic Circuit
Scorched Telemetry Processor
Tripped Power Circuit

Role: Improvements to missiles and launchers.
Drawback: Launchers need more CPU.

Projectile Weapon rigs require:

Charred Micro Circuit
Fried Interface Circuit
Smashed Trigger Unit

Role: Improvements to Projectile Weapons.
Drawback: Guns need more powergrid.

Shield rigs require:

Charred Micro Circuit
Fried Interface Circuit
Malfunctioning Shield Emitter
Burned Logic Circuit
Tripped Power Circuit
Ward Console

Role: Improvements to shields.
Drawback: Increased Signature Radius.

19 Appendix II - Chat Terms

In EVE chat, use the switch /me to refer to yourself in the third person.

Short	Description/Use
Afk	This is more of an Internet term, meaning Away From Keyboard.
Atm	Internet term meaning At The Moment.
Blob	Big fleet of ships.
Brb	Internet term meaning Be Right Back.
Brt	Abbreviation for Be Right There.
Bubble	Term used for a warp disruption 'bubble' that is deployed to stop people from warping off.
Camper	Someone who hides or stays in safe areas. In FPS games, someone who hides in one spot and shoots others, usually with a sniper weapon.
Carebear	A player in EVE who stays completely in high-security space and never goes into low security space.
Frag	Term usually reserved for FPS games describing the action of having killed (or fragged) an opponent.
Gank	Blowing a ship or small group of ships up using higher numbers and heavy firepower.
Imo	Internet term meaning In My Opinion.
ISK	Currency in EvE; Inter-Stellar Kredits.
Lol	Internet term meaning Laughing Out Loud.
NBSI	Not Blue Shoot It. In 0.0, if you're not in a player's alliance or corp, you're not blue and they'll shoot you.
Newbie or NOOB	Term meaning new player. Used when referring to someone who is new to the game or a particular aspect of the game.
Nerf	Term used by players to describe game aspects that have been changed by the developers of the game. Most often, a nerf is a change for the worse (in the player's eyes), such as lowering an ability's effectiveness, or removing it all together, etc. While they may be necessary for such things as game balance, everyone hates them.
Nm	Internet term meaning Never mind.
Np	Internet term meaning No Problem. Used frequently as a response to thank-you.
Npc	Abbreviation for Non-Player Character. Used to describe characters that are computer controlled.
Omw	Internet term meaning On My Way.
Pc	Abbreviation for Player Character. Used to describe characters that are human controlled.
Podding or Pod-killing	Destroying someone's escape pod. This results in the death of the character and the player's clone (hopefully) wakes up in a new ship. "I've been pod-killed" means, "My character died and you're now talking to my clone."
Primary	If you're called "primary" you've been selected by the enemy as their primary target. We know of several players in the game who are called primary every time even if they are in a shuttle.
Tank	Term used to describe ships that are loaded out to take lots of damage.
Ttyl	Internet term meaning Talk To You Later.
Woot	Term used to describe a state of happiness that is greater-than-great.
Wtb	Abbreviation for Wanting To Buy. Used as a means of advertising an item or service that you are looking for.
Wts	Abbreviation for Wanting To Tell. Used as a means of advertising an item or service that you are looking to sell.
Wtt	Abbreviation for Wanting To Trade. Used as a means of advertising an item or service that you are looking to exchange for another item or service.

20 Appendix III – General FAQ

Q) What is PK (player killing) like?

A) PK can happen in any system with any player. If you are in a high security system the attacker may get attacked by the police. If your ship is destroyed you lose it and most (often all) of its equipment, cargo, and drones. A wreck is left behind with some of the stuff, which the victor will probably take. Also you are ejected into a fragile pod. The pod can move and warp. If the pod is destroyed and you don't have a good clone you can lose skill points.

Q) Can I use a joystick to fly my ship?

A) Not exactly. This is not a twitch game so you can't control your ship the way you could in a flight sim. If you double-click in any direction your ship will go in that direction. Most movement is done based on fixed objects. For example you can warp to, approach, orbit, or keep a specified distance from a target.

Q) Is there a leveling treadmill?

A) Not in the typical sense like WoW. EVE has no levels. There are skills that you buy with money. There are hundreds of skills. To raise a skill you need to train it. You can only train 1 skill on any of your characters on an account at a time. Training occurs whether you are online or not. Training times depend on the level and the skill's attributes. For example science is a skill whose primary attribute is intelligence. The higher your characters intelligence the faster science will train. There are skills that increase your attributes, and reduce training times. The first level of a skill takes between a few minutes and an hour. The final level (fifth level) can take weeks. Your effectiveness is based on your ship and equipment. Ships and equipment can be bought or made.

Q) What is combat like?

A) Combat can be very complicated. There are many weapon types to choose from. You can shoot at multiple targets (with different weapons) at the same time. You can use multiple weapons on one target. You can use equipment to increase your ship's max speed. You can use equipment to reduce an opponents max speed and ability to warp. You can use equipment to increase your capacitor (power) and equipment to drain your opponent's capacitor. You can use weapons that use your capacitor or you can use weapons that shoot ammo. Several skills come into play during combat.

Q) What type of player organizations are there?

A) Gangs. A gang is a temporary group. With it comes gang chat, the ability to warp to a member's position, and the ability to see the damage the other player's ship is taking in combat. Gangs share bounties from NPC combat.

Fleets are groups of gangs. Special options are available to fleet commanders to help coordinate battles. Both fleets and gangs can have special bonuses applied to all members if one or more members have the ability. For example, a pilot with a gang assist module would enhance all members of the gang he's in.

Corporations are created by players and are permanent for as long as the CEO wishes. Players in corps may be able to access group hangars for the purpose of obtaining modules or ships, often for free, or for dumping loot or minerals if the corp requires it. Executive members can see the contents of member hangars. Votes are built into the game, and a CEO can call a vote. Owning shares gives you voting rights.

Alliances are made up of corporations who band together. Alliances can be big or small.

Q) How do clones work?

A) Clones are useable one time (for one death). There are grades of clones. The higher the grade the less skill levels you will lose. If you die in a pod you will be re-animated at the location you bought your clone.

Q) How does insurance work?

A) If your ship is destroyed you get an amount of money to buy a new ship. You can buy 50%, 60%, 70%, 80%, 90%, or 100%. Insurance does not cover what you paid for the ship. Instead it covers the amount of the base mineral cost it takes to make the ship. So really 50% might actually be more like 10%. If your ship is destroyed you get that amount of ISK. If you plan on being in combat often, get good insurance. The starter ship has free unlimited insurance, so blow it up as often as you want!

Q) How are the patches distributed?

A) Just log in; most patches will be downloaded and installed automatically. Patches are posted when they are complete and have been tested. New content is often added without the need for a patch.

Q) What professions are there?

A) Many.

1. Player-vs-Player – The main “profession” of EvE. Kill and loot, rinse and repeat.
2. Mining - Spending time mining asteroids and refining the material into minerals.
3. Trading - Buying low and selling high.
4. Bounty hunter - hunting player-pirates for bounty and loot.
5. Ratting – Flying out to roid belts or deadspace complexes and destroying bad NPCs.
6. Mission Running – Work for an agent, get faction stuff with enough loyalty points.
7. Industry - Making goods.

8. Pirating - Attacking other players to get ransoms/tolls and cargo.
9. Archeology – Do research on ancient items in order to make them build-able.
10. Hacking – In conjunction with Archeology, hacking is necessary to unlock rare items.
11. Salvaging – Mount some Salvager turrets and start targeting wrecks.
12. Exploration – Scanning down everything from hidden complexes to hidden roids.

Q) What's role-playing like in this game, if there is any.

A) There's not much. Someone should do a research project on why not.

Q) How many characters do I get for 1 account?

A) Three. But take note, training of skills on and offline can only be done for 1 character per account per server at a time.

21 Appendix IV – A Noob's Three hours in Eve

By belurium

Here's a great little true story that might help inspire new combat pilots.

First a bit of background: I'm totally new to online games and just created an Achura character about 6 days ago in my trail account. After graduating from the State War Academy and doing some missions in the safety of 0.7 space, I moved to a 0.5 system two days ago to work as a freelancer for the Caldari Navy. My base is right next to a 0.4 system, and despite warnings from more experienced members in the newbie help channel, I ventured into the 0.4 system for missions shortly after I arrived. Fully knowing the dangers in low-sec, I armed my Kestrel cheaply, with all standard t1 gears, mostly from my own pile of loot. And with luck, I made about a dozen trips to low-sec without incident.

Last night about an hour and half before downtime, I said something a bit provocative to my agent, and as a result, was given the Worlds Collide mission, in the 0.4 system. From the promised reward I guessed this is going be a rather "crowded" mission, so I decided to do the mission today to give me some more time in case things go wrong. It's not until today when I read some forum posting that I realized the "seriousness" of Worlds Collide. After some deliberation, I bought myself a Condor for cheap, and armed it with two standard missile launchers, an afterburner and a small shield booster - all cheap enough to lose without regret. When finally ready, I jumped into 0.4 space, warped into warzone, turned on AB, raced to the acceleration gate, then another, killed everyone in the last room, rescued the dudes, warped out and back to 0.5, and took a long breathe. Hurray! At this point I felt my Kestrel should be able to clean the rooms, so I decided not to report back to my agent yet, and took my slightly refitted Kestrel (replaced a missile launcher for an AB) back to the mission area. With a >30km missile range I easily killed the frigates & destroyers group by group, without ever taking much damage into shield. Shortly before I cleared the Guristas base, I received an invitation to join someone's fleet. Confused I started a chat with this much more experienced capsuleer, and admitted I have no clue why I received the invitation. To my greatest surprised, he replied, "so I could warp to you and kill you. I'm a pirate." I thanked him for his frankness, and politely rejected his invitation (to death), telling him that I'm finishing up Worlds Collide and would prefer some privacy. Again to my surprise, he started giving me tips about the mission and survival tips in low-sec! He left the chat

shortly after I started cleaning the Angel Cartel base, wishing me "fly safe" and telling to call him if I need help!

Finished I got back to my system and started my routine "belts patrol" that I always do before and after a mission. No living rats this time, but I noticed someone in a Punisher targeting me. As a precaution I targeted him back, until he got into a uncomfortably close range (I know my advantage is range if he somehow decides to fight, in high-sec) when I warped to another belt. Still no rats, but he again warped close to me and targeted me. After belt-hopping a few more times, I know I'm being followed, and I guessed he is looking for a fight. Then the opportunity came: a few rats appeared and got killed by my missiles. As expected, he took my loot, so I got, for the first time, a "kill right". Having read a forum post earlier about someone getting ransomed and then killed in high-sec after falling for a "stolen loot" trap, I invited him to a chat. Immediately he asked the same question I was about to ask, "want to fight?". Punisher, as I remembered, is about the same class as my Kestrel, and one on one may be a good fight. So I asked "is it just you or do you have backups?". Just him.

I decided to trust him (he's about two years into the game and has a very positive security standing). I told him I'm low on ammo (which is true), and I don't want to lose my loot from the mission in case my ship got destroyed. We agreed to meet again in the same belt in a few minutes, so I headed back to unload and resupply. Never fought a human player before, I scrambled to refit my Kestrel somehow for PVP. I noticed that he's always faster even when I'm on afterburner, so I decided to put on a webber to slow him down in order to use my range advantage. As a result I'm down to two missile launchers, both loaded with Piranhas (after some quick research on Punisher). At one point I thought about bringing my Griffin to scan him first. The Griffin was fitted with ship-scanner, passive targeter, scanner-boosters, warp stabilizer, ecm & missiles, and I used it to sit around in the 0.4 system and quietly observe other ships. But I decided not to bother and took-off in my "PVP" Kestrel.

I just lost my 15-min killright when I got back to the belt, so I asked him to take another one of my loot, while I tried to put some distance between us. I also got the assurance that he's not going to destroy my ship. With that final assurance, I typed "let's start" and fired a volley of Piranhas. I ran away from him on afterburner, but he still caught up with me before I could fire my 4th volley. I webbed him, and immediately got webbed myself. I was stupid enough to forget he could also web me! So we circled around within 3km, exchanging fire for a few minutes. At one point he lost web on me, so I got away a bit and recovered most of my shield, but as a result I lost web on him as well (I somehow thought I could keep him

webbed while I put distance between us). He easily caught up again, and eventually he got me close to half into structure (I'm only about 15% into his armor). Realizing I have no chance to win I conceded and stopped firing. And to my delight he immediately stopped shooting (he could easily destroyed my ship if he has warp scrambler), and declared "good fight. thanks for the fun".

It's apparently nothing for an experienced player, but for me it was indeed a good fight as I have learnt tremendously. I was already getting bored of the easy & repetitive missions at that point and was thinking about quitting the game, but I'm glad to have discovered the charm of this game and my fellow capsuleers during the encounters in those three hours.

22 Appendix V – Ore Refine Table

Ore (group)	Ore	Tritanium	Pyerite	Mexallon	Isogen	Nocxium	Zydrine	Megacyle	Refining Batch	Volume
Arkonor	Arkonor	300					166	333	200	16
	Crimson Arkonor	315					175	350	200	16
	Prime Arkonor	330					183	366	200	16
Bistot	Bistot		170				341	170	200	16
	Monoclinic Bistot		187				375	187	200	16
	Triclinic Bistot		179				368	179	200	16
Crokite	Crokite	331				331	663		250	16
	Crystalline Crokite	364				364	729		250	16
	Sharp Crokite	347				347	696		250	16
Gneiss	Gneiss	171		171	343		171		400	5
	Iridescent Gneiss	180		180	360		180		400	5
	Prismatic Gneiss	188		188	360		188		400	5
Hedbergite	Glazed Hedbergite				779	389			500	3
	Hedbergite				708	354			500	3
	Vitric Hedbergite				744	372			500	3
Hemorphite	Hemorphite	212			212	424			500	3
	Radiant Hemorphite	233			233	466			500	3
	Vived Hemorphite	223			223	445			500	3
Jaspel	Jaspel	259	259	518		259			500	2
	Pristine Jaspel	285	285	570		285			500	2
	Pure Jaspel	272	272	544		272			500	2
Kernite	Fiery Kernite	425		850	425				400	1.2
	Kernite	386		773	386				400	1.2
	Luminous Kernite	405		812	405				400	1.2
Ochre	Dark Ochre	250				500	250		400	8
	Obsidian Ochre	275				550	275		400	8
	Onyx Ochre	263				525	263		400	8
Omber	Golden Omber	338	135		338				500	0.6
	Omber	307	123		307				500	0.6
	Silvery Omber	323	129		323				500	0.6
Plagioclase	Azure Plagioclase	269	538	269					333	0.35
	Plagioclase	256	512	256					333	0.35
	Rich Plagioclase	282	563	282					333	0.35
Pyroxeres	Pyroxeres	844	59	120		11			333	0.3
	Solid Pyroxeres	886	62	131		11			333	0.3
	Viscous Pyroxeres	928	65	132		12			333	0.3
Scordite	Condensed Scordite	875	437						333	0.15
	Massive Scordite	916	458						333	0.15
	Scordite	833	416						333	0.15
Spodumain	Bright Spodumain	735	147					147	250	16
	Gleaming Spodumain	770	154					154	250	16
	Spodumain	700	140					140	250	16
Veldspar	Concentrated Veldspar	1050							333	0.1
	Dense Veldspar	1100							333	0.1
	Veldspar	1000							333	0.1