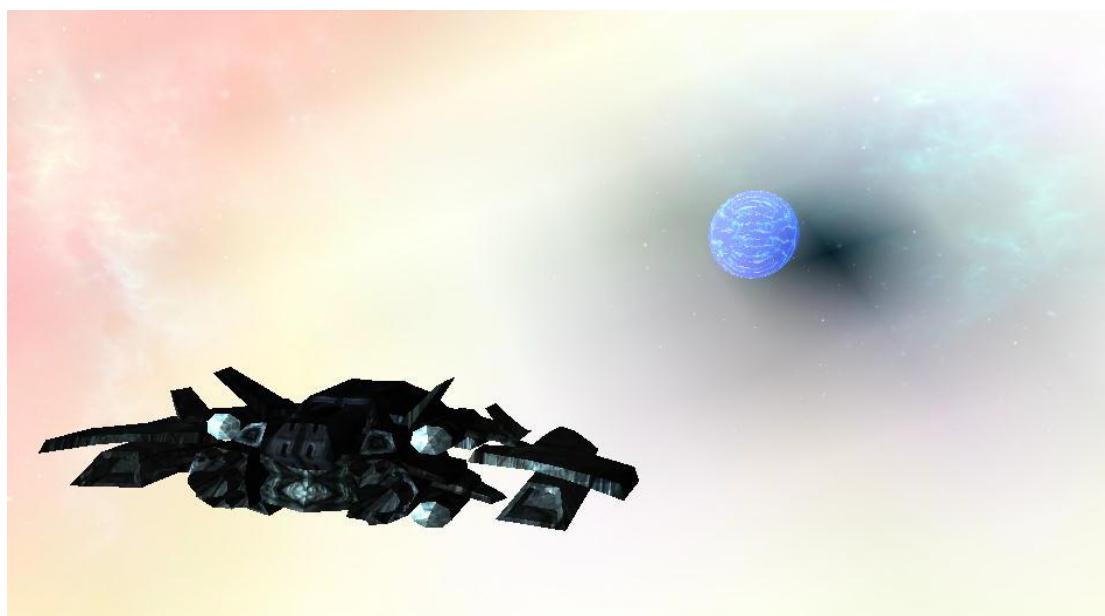


EVOCHRON MERCENARY: A BOOK OF HINTS AND TIPS

compiled by **DaveK** (callsign *Incoming*) from contributions on the forum - **V05**



... it's amazing what you can find in an asteroid cave!



... approaching the wormhole at the centre of a black hole

I do not claim ownership of most of info in this guide - it has been gleaned from the generous contributions of many, many players on the Forum threads and a little bit of hard earned knowledge. I complied the notes in Microsoft Notes for my own use and so didn't always, at the time of collection, note down who posted them. I must mention *Flying Brick* in particular; he trawled the forum threads and compiled over 80 pages of questions and answers and generously made them available to the community via this guide. even when condensed it consisted of 60 pages of hints, tips and his suggestions!

To optimise the size of the guide I have amalgamated and edited some of the contributions and where appropriate checked out the claims made.

The information is grouped into what I think are sensible chunks - others might have chosen a different way of grouping them. Each main section starts with snippets of info and answers to the commonest newbie questions. It is then followed by tutorials and "opinions"

There is a Contents Table to make using the guide as easy as possible and to prevent you having to see hints you don't want to see. You should find that the Contents are interactive: click on a question and you will jump to that section.

Don't forget the ***Evochron Mercenary Guide*** (The ***Legends Guide*** is also extremely useful, with more detail - though some is Legends specific a lot is applicable to ***Mercenary*** as well!)

The ***Training Sessions*** are also worthwhile. The ***IMG Quest*** is a great way to learn and earn!

Finally the ***Tutorial Videos*** are a must (plus several ***player produced tutorials*** on YouTube). Mecingo's excellent tutorials are now available from SeeJay's website. They answer many of the questions that keep coming up in the Forum, but with moving pictures in colour and sound and everything! (even cool music in some)

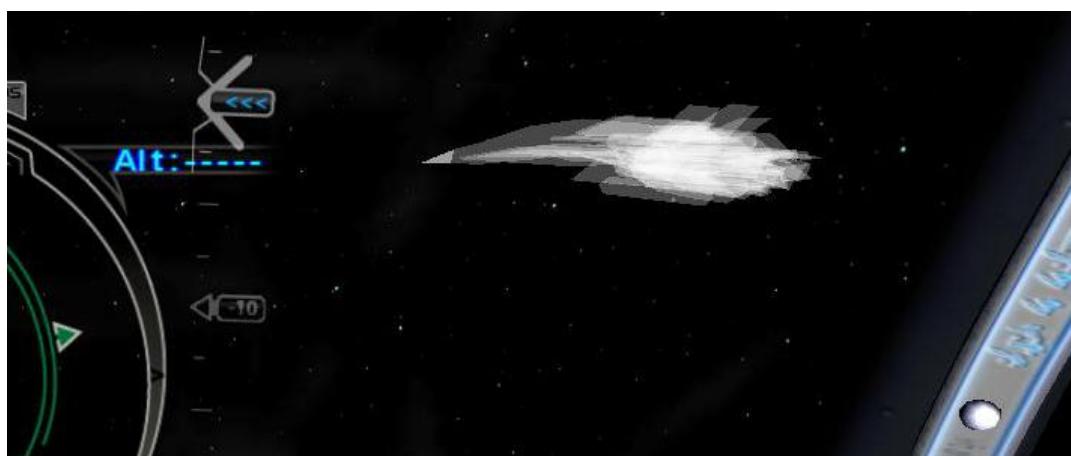
On the forum there is a thread maintained by ***Viper*** called

>>> NEW [EM] PLAYERS: Guides, Tutorials and Other Useful Information <<<

<http://www.starwraith.com/forum/viewthread.php?tid=8676#pid127309>

which acts as a contents page of links for information that, despite the title, will be of enormous use to all pilots .

If you have any comments to make, hints to offer or any requests please U2U me @ DaveK



. . . ghost ship spotted in deep, deep space

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Basics - Fundamental stuff about gameplay and role play

Intro

There are two questions to ask yourself. One, do you care about getting the best stuff quickly or will you take a harder route for role-play *etc* reasons? Two, do you care about finding stuff out for yourself or are you happy to have locations etc pointed out?

Want to do it the hard way and not read spoilers? Be careful about what you read on the forums. In the extreme, you shouldn't read anything on the forums as people have differing definitions of spoilers. Let pain be your friend, I applaud your masochistic tendencies and desire to figure it out yourself. While you're at it consider not reloading for better equipment/contracts. If you want to be really extreme play dead is dead (ie you die = start new game). Or you might roll a dice and jettison a piece (or three) of equipment

Want to do it the hard way but not adverse to spoilers? Read up in the forums skipping spoilers you don't want to know and make a decision about how you want to get rich and then follow that path. Kudos to you for imposing some discipline on yourself.

Want to do it the easy way but don't want to be spoiled? Finish the IMG quest, do non-combat missions/trading/mining if you can't handle the next IMG quest with your current kit. The quest will lead you to areas where you can get better equipment. On MP you can get help with missions if you want it

Want to do it the easy way and want to be spoiled? Check out other forum posts or get someone to send you a U2U of something profitable, you can make money really easily and get all the best equipment without touching the IMG quests. You might also want to ask yourself why you bought the game!!

And of course there are many shades in between those answers. For most new players checking out more of the forum posts (including in the Legends forum) is a really good idea. Just remember to avert your eyes when someone mentions a spoiler you don't want to know about. Most of the advice in this guide appears elsewhere in many forms and time spent reading old posts is often better practice than actually playing.

Basics - General Stuff

I'm new to the game - where should I start?

As a rookie, Explore Sapphire...that system has a lot to do for a beginner pilot...if you want to try combat go to the Olympus system.

Source Vice: Some of what you may read on this forum is from ambitious rookies who attempted to take on challenges in areas of space they were not ready for. ***A new player should not just dive in to Thuban, Sierra, or Pearl expecting to 'win'.*** You will need to pace yourself and establish a skill set of tactics as you learn combat. Once you become more skilled, you'll be able to venture further out into much more challenging systems with much more capable enemies. ***But early on, I would recommend staying close to Sapphire and practice in the Olympus system for a while until you've got the basics down.*** That will let you practice with a limited number of hostiles using limited ship configurations, limited tactics, and limited weapons. Then work toward more challenging objectives and hostile forces.

There is a learning curve to this game and you often need to employ tactics on a multiple levels, rather than just always doing A when B happens. Combat does require practice, but the trade off is, by many accounts, improved depth to gameplay because of the range of options and needed tactics.

Save and self-destruct is the fastest way of reloading! Also has the added side-benefits of regenerating contract.

When you exit a jump you come out of the jump 2500 to 3000 units before your set navigation jump point depending on your ships frame.

You don't have to destroy more hostiles than the contract requires. If the contract says four, you'll get a message saying you've completed the contract after the fourth kill. You can then walk away from however many are left over. The only exceptions are when you have to kill a named hostile and his team - you have to kill the named leader and when doing an escort - you need to keep defending the capital ship until it jumps.

Snippets

Freebie: Once in Rucker head to the Pearl gate, but do not enter it. Travel East from the Pearl jump gate and keep your eye on your screen 1 to 2 sector from Pearl gate you will see a purple blip. Follow it to you get to the gate there. It a surprise. ([Gate to Lost Rucker - not on Nav Map](#))

There is a graphic file of the keyboard layout in the main game folder

To gather a fleet of your own You need to ask **green** ships that are friendly to you. Yellow ones are only neutral and very unlikely they will join your fleet

Basics - problem solving, customising and game maintenance

What can I do when EM stops loading at a certain %, can include error messages about an image, sound, or object...

Game Closes During Loading, Often Displays 'File Error, Unable to load image/sound/object'

When the game displays an error message about not being able to load an image, sound, or object, it indicates that your system blocked the game from being able to load that media file into memory. This can mean your system either lacks sufficient memory or something else running on your computer has blocked the game from loading the file.

This can occur if your system lacks sufficient available physical memory for the game. To check the available physical memory on your system, click on Start > Run/Search > type in MSINFO32 and press enter. On the system summary screen, note the value next to 'Available physical memory'. If that value is near around 1.2 GB or less, your system may not have enough memory resources to run the game reliably with full details. If it is close to that value, you can often get the game to work by reducing the 'Planet Detail' setting to 'High', 'Medium', or 'Low', which significantly lowers the memory required. Lowering other detail settings may also help. If changing the detail setting(s) doesn't work, you may need to stop any non-essential background tasks to free up more memory for the game.

If you have ruled out insufficient memory as being the cause, then the error is likely caused by another program running on your system at the same time that is interfering with the game's ability to load critical media files it needs into memory. Games can have unique requirements and dependencies that may conflict with other software. Eochron Mercenary and Arvoch Alliance are fairly memory hungry games. They generally need a higher level of free physical memory than many other games. While you can reduce the level of memory the game needs by changing various detail settings in the Options menu, you may find that your system has plenty of memory (perhaps 4 GB or more) and should be able to run the game at maximum detail. In such cases, external interference is often the cause.

Since a game generally requires a lot of your computer's resources, it often takes a game to bring a restriction problem on your system to the surface. You may not know your system's resources and/or performance is being restricted until you encounter a problem with a game that needs those resources and performance. Small programs and small games that require few system resources can often run fine, but games that require a lot of memory, CPU, GPU, and hard drive resources can run into problems on systems with restricted resources caused by background/residual programs running on the computer at the same time.

Some programs, particularly security related, can block/restrict certain portions of your system's memory from being available to other programs and games. This can result in a limitation caused by a running security program that may prevent a game or application from using even just a small portion of that memory, even though the system may have plenty of installed memory. So it isn't necessarily how much memory is used up or available, but whether enough consecutive memory is available.

Another possible interference problem is disk access. If a security program blocks or otherwise interferes with a game trying to access and load a media file, the result can be a crash or error message. A security program may decide to begin a scanning or updating process in the middle of when you are playing the game, so the problem can occur intermittently and at different points in the game.

Here are steps you can try to help troubleshoot and locate possible interference from other programs:

Adjust or Change Running Security Programs

- If your antivirus/antispayware software has a 'gaming mode', try that first. If the software has an exception list, add the game's install folder and save data folder (if different, default is c:\sw3dg\GameName) to the list. If the problem persists, you can try temporarily disabling one or more of its residual services. Some programs may still have interference issues left behind even when disabled, in which case, you may want to try uninstalling the program entirely (using something else in the meantime for protection as desired), then test the game. Not every antivirus/antispayware program is the same, some have far fewer interference problems with games than others. There are several free options available that have few or no reported issues with the games available here. Avast has generally been considered a good alternative (even while leaving its full protection mode on). Some gamers also use Microsoft Security Essentials.

Stop Unnecessary Background Programs and Services

- Click on Start > Run/Search > type in MSCONFIG and press enter > click on the Startup tab. You can uncheck any programs you want to test disabled to try and locate which one might be causing interference. After making changes, restart your computer. You can recheck them later to enable them as desired. If you discover a specific program that was causing the interference, please send an e-mail to the address at starwraith.com > contact with the file/service names so they can be kept on record for future reference.

Try Launching the Game as Administrator

- Right click on the game's desktop icon, then left click on the 'Run as administrator' option and test for changes.

Check for Possible Windows System File Damage

- This or similar problems may occur on systems that have residual damage from virus/malware infections or other system corruption/damage. You can perform a system file scan to check for missing or damaged system files. Click on Start > Run/Search > type in SFC /SCANNOW and press enter. The scan will generally take several minutes.

If the screen just flashes a bit and returns to the desktop, then the program didn't run and you'll either need to run it with an admin account or in safe mode.

If You Are Using an HP System, Check for the Cyberlink Media Service Program

- One apparent culprit of causing interference with a number of games is a program called Cyberlink Media Library Service (background task filename is CLMLSvc.exe). This program is apparently pre-installed on some HP computers and has been confirmed as being a cause for some error code related problems. Stopping this process has solved the problem as reported by several users so far.

Check for Defective Hardware

- Although somewhat rare, bad memory and/or hard drive can cause such problems. It can be consistent or intermittent. Microsoft offers a memory diagnosis tool here:

<http://oca.microsoft.com/en/windiag.asp>

If you suspect defective memory might be a factor, follow the instructions carefully to run the test, then replace any defective memory as needed.

One or more of these steps will generally solve any loading error problems. But if you try all of these steps and the problem continues, you can follow the steps listed here:

<http://www.starwraith.com/evochronmercenary/faq.htm>

And I can review your system configuration for possible causes.

Testing Available System Memory

The program at the link below will test the available **consecutive** memory on your system. There are 4 tests you can run for different memory limits. Generally speaking, your system will need to pass test 1 to reliably run Evochron Mercenary or Arvoch Alliance. If your system passes the test, the program will display a 'Success!' message and prompt you to press the space bar to close the program. If your system fails the test, the program will just close on its own.

<http://www.starwraith.com/evochronmercenary/MemoryTest.zip>

Memory Address Space

On some systems with a certain set of background programs running, a crash may occur right at or near the end of the loading process and it may not be possible/feasible to disable the background programs that are using up the memory that the game needs. There is another available option that has worked around the problem, although it is not supported. Also, the option is generally limited to systems that have at least around 4 GB of memory or more installed. Here are the details.

When enough lower memory is used up, available addressing space gets pushed higher which can result in a game encountering a limit that results in an error message, freeze, or crash when no more consecutive memory is available. Even though the system may have plenty of memory capacity available, certain limits can be encountered when the base address level is moved higher. The preferred solution to the problem is lowering the base memory load until the game can access all of the memory it needs. But if that is not an option, you can use a utility called CFF Explorer to alter the memory limit for the game's executable. Again, this is not a supported option and may cause other problems (which is why the game is not configured this way by default). But if you want to try this option, you can download CFF Explorer from the author's website here:

<http://www.ntcore.com/exsuite.php>

Then follow these steps to apply the change:

1. Backup the original EvochronMercenary.exe or ArvochAlliance.exe file located in the install folder.
2. Open CFF Explorer, then open the EvochronMercenary.exe or ArvochAlliance.exe file.
3. Go to the "File Header" section (under Nt Headers) and click the "Click here" on the characteristics row.
4. Check the "App can handle >2gb address space" box, then click OK
5. Save the altered version as EvochronMercenary.exe or ArvochAlliance.exe.

I have a problem running the game and the suggestions here and in the Forum haven't fixed it. What can I do?

Vice is a wizard at solving problems and replying to you quickly!

- If you haven't been able to find a solution to a particular problem, you can complete the following steps to forward your system specifications/details in an e-mail so further assistance may be possible
- Click on Start, Run, then type in **MSINFO32** and press <enter>
- Click on the File option at the top and click on Save
- Save the NFO file, ZIP it to compress the size of the file, then attach it to an e-mail and send it to **sw3dgames@gmail.com** with a subject line: **Technical-Support** and include a detailed description of the problem

How do I save my important files, like pilot saves?

(Forum Thread by Vice) <http://www.starwraith.com/forum/viewthread.php?tid=3433>

The thread also includes reasons why the files are set up as they are, how to moving the game, and how to keep the game and your data files in different locations

Save data, settings,

For all current SW3DG games, save data and settings are saved in this location by default:

C:\sw3dg\GameName

This is also the folder you can install the game to by default, usually the same drive that you have Windows itself saved on (typically C:). You can specify a different folder during installation for the core game files (binary, certain static data files, instructions, etc), however, files that the game needs to save data to are kept in the folder listed above. This is done for several important reasons:

This setup works with Windows XP, Vista, and 7 so it's easy to transfer the files from one OS to the other and from one computer to the other.

Pilot profiles are saved with the filenames PILOTX.SW where X is a number ranging from 0 to 7 (pre-Mercenary) or 99 (Mercenary and more recent games). Each number corresponds to the slot for the profile, starting with 0 at the top. These are the most important files to back up. They are small and can even be kept on a floppy disk. It's a good idea to back up these files periodically so you can restore your progress in the future, if needed.

Settings are saved using the filenames SW.CFG, KEYMAPX.SW (where X is a number), and STICKT.SW. These files are not critical for backing up, but can be useful in case you want to save your key/button and joystick axis control profiles along with video, audio, detail, and other control settings. If these aren't backed up, the game will simply rebuild them the first time you launch a new installation of the game and you can remap your controls and change settings as desired. If you install the game on a new system, it's a good idea to let the game rebuild the SW.CFG file anyway to accommodate differences the new system may have compared to the old one. The game will build that file based on what it detects on the system and will attempt to optimize settings based on the configuration it detects.

How do I update the game?

Download the latest full version of the game and run the installer. An update is the full game but it will not over write your player info or effect most mods if you have any. It is however a very good idea to back up your Pilot profiles in case of a hard drive crash or human error!

Editing and deleting posts on the forum

Press the Edit button and you can edit your post! This included editing the automatic list of when you edited the post before (this can save embarrassment sometime). You can also delete one of your own posts by clicking Edit and then ticking the "delete this post" box.

Keys to consider remapping

to use the IDS multiplier you must map them - by default they aren't mapped
F2 - activates jump drive by default - remap it if you find yourself jumping instead of opening the NavMap (F1) or Inventory(F2) screens
Left-Shift - if you find you're firing missiles at the person in the station you are wanting to chat to!

Etiquette in Multiplayer

Source: SeeJay's Evoxron Basics Schools - <http://www.junholt.se/evoschool/index.htm>

This is not to be considered as any rules.

The R1 server, hosted by MMaggio, is a no rule server, except language. (Be nice)

This is what we consider common sense and honourable behaviour.

fighting

Before engaging anyone in combat (PvP), ask if he/she wants to fight.

There are a few pilots/clans that do attack without any warning to "welcome" new pilots.

Do not fear, most pilots out there will rush in and fight at your side against them.

They normally just do this once, then they fight at your side as well if you want them to.

clans

Attacking another clans systems when they are offline is considered dishonest behaviour by most pilots, but it does happen.

Attacking is done by doing contracts and/or destroying their stations. Also building your own stations there.

new pilots/emergencies

Most pilots will offer their help in any way they can out there. Listen to the "oldies"!

If a pilot runs out of fuel, it's honourable to fly out to him/her with some fuel so that he/she can get back "home", or build a station nearby and help him/her dock with it.

Blocking Contracts for other players - a no no!

If you accept a contract then no-one else is able to accept a different contract in that sector until you have finished. ***So please don't accept a contract and then go for a coffee break!***

What is the link between SP and MP?

Source: SeeJay's Evoxron Basics Schools - <http://www.junholt.se/evoschool/index.htm>

All that you do in SP carries over to MP and what you do in MP carries over to MP regarding any progress that you make.

Only two things don't carry over:

Reputation: The main reason for the separate reputation structure between SP and MP in Evoxron is to allow players to perform activities in MP that do not impact their earned individual SP reputations while still allowing them to keep everything else they've earned to use in both SP and MP. For more details see the paragraph : Vice (developer) on reputation in SP vs MP

The only other thing that does not carry over is any object you build/construct. What you build in SP stays there and what you build in MP stays there. Those items are saved on the server side for MP.

Getting rid of Background Radio Chatter

from Mecingo

When your chatting with someone by microphone you get a somewhat annoying radio chatter in the background that makes it hard to hear what players are saying. You need to record a blank audio file a .wav file (or download one from the web - surprisingly rare!) Name it radiochatter.wav. Create a folder titled sounds, put that folder in your EM folder, and put the sound file in that folder.

How do I add those cool Rank graphics to my signature?

go this thread: <http://www.starwraith.com/forum/viewthread.php?tid=7864>

Viper has created a graphic for every rank;



- copy the photobucket location underneath the relevant image
- goto your User Control Panel
- click on Edit Profile (at the top)
- go down to "Your Signature"
- type [img]
- then paste the url for the photobucket location
- then type [/img]

This should wrap the URL in the commands to make it an image! - and it should appear in all your posts, past present and future

Adding an Avatar

contributed by Marvin

How to add one of these...



... to your name (the above is just an example!):

1. Get a free account with somebody like Photobucket.

Added by DennyMala: You can host your pictures in many other spaces.... just like Windows Live space, the Sky Drive, your ISP space - no need to register with a host for pictures just for some bytes.

2. Place a copy of your avatar in your (Photobucket) account "Album."

3. Copy the (Photobucket) link to the avatar in your Album. If you're using Photobucket, just go to your Album, find the avatar, left-click to select "Direct Link," then right-click and Copy the readout in the window ... like this:



4. Log on to this forum and go to your User Control Panel.

5. Select the "Edit Profile" option.

6. In the window next to "Avatar URL:" paste the link you copied from your (Photobucket) Album.

7. Click on the "Edit Profile" button at the bottom to save your avatar.

8. Go to "My Home" and check that your avatar shows up under "Avatar & Member Status."

How do I chat to other pilots?

it's a big galaxy and, therefore, other pilots could be busy elsewhere. If they don't chat, the only way you'd know you're not alone is if you use the tilde key (~) to display a list of players currently on line. To actually chat, press the <Enter> key and type your message then hit <Enter> again

What's a payment "cycle"

It's the length of time between "pay periods" ... intervals where you get charged for storing equipment at a station, where you are required to pay your crew, and where you get paid for territories you control if you are in a clan. Clan members get paid 100K credits per controlled system every 10-12 minutes.. You get charged for a hangar and crew around every 20 minutes.

Things to do in the game after you finish the quest storyline:

- go to Sol system, also Riftspace and Vonari space and the Andromeda Galaxy!
- you can start changing your reputation in the systems by doing quests for navy/energy, to change them to "Good", so there won't be any more hostiles in there
- get maximum rank both for civilian and for military
- you can change the economy of systems by building stations (of all types) in those systems (trade stations, research stations, ore stations, energy stations, etc.) See what kind of impact **that** has. Raise economies! Create good trading systems for relatively new pilots
- join or create a clan
- become a baddy and join the Reavers Clan
- join GDF and help pilots (SAR missions and general help and assistance)
- Explore. Either looking for new systems on your own (especially by using a deploy constructor which you can use both for refuelling, and the sensor array which helps you scan the present sector for other AI and human ships)
- There are hundreds of uncharted systems, several asteroid caves with a variety of goodies inside
- Visit the server (9999,9999,9999)
- Or, just load up the coordinates from the many hidden systems already found by other players and go there, see what's there.
- run your own MP server - create a Universe that's a bit different
- organise community activities like a "last man standing" competition
- create a quest - there are people who will help you code it when you've got the story line sorted
- check out some of the "facts" bandied about on the forum; how long can a C1 particle cannon fire for non-stop. Does it depend on the frame? How does it compare to a C10 etc
- If you have the flair, turn some of your adventures into stories for others to enjoy

Evochron a freeform space-sim, a sandbox, so you can do whatever you want.

Source Vice:

And believe it or not, there is also a sizeable number of players who want (and have even demanded from me, lol) that they be given the option to have 'no hardship'. They literally want to fly around in peaceful space as much as possible just to calmly mine asteroids, explore caves, traverse planets, deliver items, transport people, find lost items, design ships, race, and/or recover/sell fuel. It's part of the reason why there are significant areas of peaceful space in the game along with hardship bypasses like high speed travel and stealth/cloaking devices.

Basics - The Evochron Universe

What units is speed and distance measured in?

Source Vice: Speed is indeed 'mps', (meters per second)
distance is measured in Dm (decametres; 1 decametre = 10 metres)

Therefore a container 1000 coordinate units out ahead of you would take about 10 seconds to reach at 1000 mps (=1 kilometre per second). The calculation is as follows

1 Coordinate unit = 1 Decametre = 10 Meters
1000 Coordinate unit x 10 = 10000 meters = 10 kilometres

Time = Distance/Speed = 10000/1000 = 10 seconds

1 sector = 200,000 coordinate units = 2,000,000 meters = 2,000 Kilometres!

1 Decametre = 10 Meters. So 1 Kilometre = 100 Decametres!

Why are distances measured in decimetres?

Mostly just to help keep coordinate entry a little more manageable so players don't have to try and keep track of too many zeros when plotting nav/jump points, tens of thousands being a little easier to manage than hundreds of thousands.

Source Marvin: I prefer to work in sectors and sub-sectors. 1 sector = 10 subsectors

At a speed of 1000 mps, you travel 100 subsectors per second.

This ratio holds at any speed.

100 subsectors per second equals 6000 subsectors per minute.

6000 subsectors per minute equals 360,000 subsectors per hour.

360,000 subsectors per hour equals 1.8 sectors per hour.

Ergo, if your speed indicator reads 1000, you are travelling 1.8 sectors per hour.

To determine your speed in sectors per hour, you multiply what's displayed on your indicator by .0018.

To calculate subsectors per minute, multiply what's displayed on the indicator by 6.

For example, you run out of fuel and are drifting at 1800. At that rate, you will drift 10,800 subsectors per minute, or 3.24 sectors per hour.

Are the rumours about uncharted systems true?

Yes! - there are a couple of hundred "uncharted" systems to find and explore, plus several major uncharted systems from earlier Evochron History (RiftSpace, Vonari, WolfZone, Andromeda Galaxy, Lost Rucker)

How can I find cities on a planet?

Source Vice: The highlighted plus symbol (**[+]**) is the primary trade city of the planet. Other plus symbols (**+**) indicate smaller cities.

Help - I landed on a planet and got killed just sitting there (no attackers!)

There are planets usually in an uncharted system that deplete your shields even just sitting there after you landed - I just managed to land and enter before the shields went. I was OK whilst I was in the city "station" - I could even repair the shields and ship damage, but couldn't climb out of the atmosphere quickly enough to escape. It should have a "stay away" beacon in orbit! It is possible to leave but it involves shields and looking like a firework!

Nebulae

Is there anything special about nebulae?

Besides the fact that you have reduced sensor range and you can't jump inside the dense ones , what DO they do, or what are they good for, if anything?

Not all systems have nebulae - some have several! They come in a variety of colours

If you have a mining/tractor beam fitted (and every pilot should!) you can use it retrieve photon particles from stars, nebulae, some planetary rings and gas giants. You have to have a fuel converter fitted. A fuel converter is a remarkable piece of equipment that can transform high energy photon particles into fuel. It connects to the tractor beam system and fuel tank to directly deposit the converted fuel into the tank.

In high energy/density nebulae jump drives and missiles don't work. You can jump in but you have to fly back out!

There are various things to be found in nebulae - stations, wrecks, containers!

What's the difference between background nebulae and those in the NavMap?

Source: FADM Busch

The "background nebulae" are just that, background and eye-wash. There are nebulae in-game that aren't, and all may be flown into and through. Some have objets d'arte (hidden/obscured items), some are "lumpy" (asteroids), somewhere you just can't fire your missiles (high-energy nebulae). Not every system has nebulae as part of the system's "furnishings". One may turn off the background nebula effect in the Options menu, if desired. Hope this helps some.

Basics - The Shipyard

Source: SeeJay's Evoxron Basics Schools - <http://www.junholt.se/evoschool/index.htm>

One of the most important activities in the game is designing your ship. This is done in the shipyard, which is available at stations, carriers, and planet cities. Note: Stations and some other objects in space have their own gravity protection field to prevent ships from ramming into them. Your HUD will display a pathway that will help guide you to the docking area. The pathway will be red if your approach is outside of the required docking angle and it will be green when you are approaching correctly. Line up your ship with the flashing docking lights to approach at the correct angle. The 'Landing and Docking' section below will provide more information on descending into planets and docking with stations.

To access the shipyard, fly to a docking zone near the top of a station, a carrier hangar, or in the middle of a city with a landing zone on a planet. The automatic tractor beam will engage and your inventory console will be opened. Simply click on 'Enter Station/Carrier/City' then 'Shipyard' to open the menu shown in the image above.

Descriptions of each frame and ship component are available on the bottom two displays of the menu. Use the scroll bars to toggle through the available options, then click on one to read its description. To design a ship, select a frame from the right side menu then drag and drop it to the middle display (click and hold the mouse button to move the frame of your choice). If you're designing a civilian ship, the Frame Config menu will open automatically and lets you adjust the available frame's configuration capacities for crew members, equipment hardpoints, countermeasures, and secondary weapon hardpoints. Just click on boxes under the capacity number you want to increase or decrease each limit.

Next, select the parts you want for your ship. You can toggle through the 5 different ship components by clicking on each one on the bottom left display. Each frame provides a certain level of assembly resources that you use to design your ship. Larger frames provides more assembly resources and offer better shielding/armour, but aren't as manoeuvrable or as fast and use more fuel.

If you design a ship that exceeds the assembly resources available for the frame you selected, the 'Assembly Left:' value at the top will turn red and you'll need to reconfigure your design to stay within the resource limit. Each component will use a certain amount of the assembly resources and will effect various aspects of your ship.

Larger fuel tanks will give you more range, larger cargo bays will let you carry more items, more powerful shield cores provide better protection, more powerful engines provide higher speed, and better wing/thruster systems improve agility. You will need to carefully prioritize your design for the features that are most important to you and the role you want to play in the game.

Once you've selected the frame and components you want, you can further customize your ship's appearance by using the position and scale sliders on the middle display. If you make a change you don't like, simply right click on a slider to reset its value to centre. For visual enhancement while editing your ship, you can highlight the component you're editing and paint your ship a different colour. You can also stop the rotation, and/or remove the direction planes. Once you've designed your ship the way you want, simply click on 'Trade and Build'. You will be given credit for your current ship, then any additional amount will be deducted from your account. The difference between the value of your current ship and the cost of the ship you want to build will be shown at

the top of the middle display. If the ship you are trading in is damaged, the total cost for repairs will be deducted from its trade-in value and the adjusted amount will be displayed in red.

You can save the current ship design with the template option. Click on Templates near the top of the shipyard menu, then click on 'Save Current Design as Template'. You can reload a design later to rebuild it, although you will need to be docked at a station that can build the ship saved in the template. Templates are saved in the game's data folder using the filenames shiptemplateX.sw where X is a number from 1 to 10. All of your profiles will have access to the ship templates and you can even share them with other players.

Basics - The Hangar

A Hangar option is also available near the top of the shipyard menu and it lets you store a ship and up to 5 containers of cargo. The option is only available at trade stations and you are required to pay a fee to rent the space. There is a limit of one hangar per pilot at each trade station, but you can rent as many individual hangars from trade stations as you want and can afford.

Hangar fees will be charged on a common billing cycle and will apply for any hangars you are storing ships or cargo in (a list of the station names will be displayed in the message system each time you pay the fees). To remove the fees for a hangar, you'll need to either sell or remove its contents. If you want to store the ship you are flying at an empty hangar, you'll need to rebuild your current ship so you are never left without a ship. This will be done automatically for you when you select the Store option in the hangar if you have the funds to build another ship of the same design. You can then change the design as desired once you've stored the original. To recover a stored ship, simply use the Swap option that will appear once a ship is in storage.

Your stored ship will then be exchanged with the ship you are currently flying and the contents will attempt to be transferred between the two so you still have the weapons, equipment, crew, and cargo you currently have. If the ship you are swapping to can't carry the same items, they will be discarded or sold. So make sure you sell or store them before you change ships, if you want to recover the credits for them or use them later. If you have crew members and swap to a military ship, they will be dismissed. If you want to keep your crew, make sure you swap to a civilian frame that can carry them. The game will autosave your progress any time you make changes to a hangar.

Opinion: Customize your ship!

That's what the Shipyard is there for! Not going to do much cargo/mining/trading? Get rid of some of the cargo bays, it leaves you more space (assembly) for other equipment. Same with fuel - don't take tons of fuel in a ship designed for combat!

Don't want to have full crew? Reduce the crew space to whatever you want!

You have all the reasons to experiment with these all you want, and no reason not to do it, because your ship (frame) costs just as much to buy and to sell, so you never lose any money by experimenting with your frame (you "buy" a differently-customized frame of the same type at the same price that your "original" frame was worth. This is for identical frames, of course, which you can customize). So yeah, customize the frame, but also the stuff you put on them!

Black Holes & Worm Holes

Do I have to reinforce the front shield when I jump into a black hole?

No you don't. In earlier games you did have to. In EM the black hole does damage directly to your hull, leaving the shields untouched. This damages your hull very very quickly. It is the reason why you adjust your pZ coordinate before the jump so that you exit the jump as close to the wormhole as possible (ideally jumping directly into the worm hole!)

What happens in black holes and worm holes?

Source Vice: Black holes (some of which have wormhole pathways inside them) will crush you quickly if you try to just fly into them. They require a very special approach technique. Many wormholes are not as dangerous and can just be flown to.

The wormholes in the middle of the black holes are difficult to jump through, and always (in my experience) result in at least some damage to the ship.

Try jumping into the black hole. Just remember that you come out of the jump slightly before the desired nav point, so you will have to adjust your jump point to exit the jump inside the wormhole.

When jumping using a Fulcrum Drive, a gate or wormhole you normally come out of the jump some 2000 to 2500 units in front of it. So when jumping through one in a black hole you have to plot your jump coordinates so that you come out of the jump in the centre of the wormhole in the black hole. Depending on your ships frame and outfit you can sustain heavy damage but you will survive the jump if you do it right.

How to fly through a black hole

Fly to the same sector ... or at least within range of your jump drive. Pitch zero. Heading zero. Right click on the black hole. Subtract 2000 from the Z coordinate. Then jump.

If you arrive too far away from the WH and explode before you reach it, subtract 500 from the Z coordinate reduction and repeat.

You will take a lot of damage so have a repair system fitted in case there aren't any stations at your destination!

Save **before** doing any of the above.

Discussion - How do I jump through a black hole? (**Spoiler alert**)

Source: Aures: Here is the method I just used today to take a quick trip to another galaxy. Twice. It is actually very simple and reliable:

- 1) Get a Starmaster or any other high class frame with strong hull armour and jump to a spot within jump distance of the black hole, come to a complete stop and face 0 degrees with a pitch of 0.
- 2) Right click on the wormhole so your nav point is set to it (25000,0,25000 in my case)
- 3) Manually change the coordinates by adding 2500 to z (making the coordinates 25000,0,27500 in my case)
- 4) Jump
- 5) Enjoy your new location

I could have chosen a different direction and amended the coordinates appropriately (eg face 90 degrees 0 pitch and jump to 22500,0,25000), but I would recommend you stay at a pitch of 0. The main thing is to offset the fact that you come out of a jump about 2500 behind your nav point relative to the direction you are facing when you jump. Facing 0 degrees at a pitch of 0 while at a full stop and then jumping to 25000,0,27500 will get you to come out at 25000,0,25000 where the wormhole is and you will instantly enter it. You will still lose most of your armour hence the Starmaster. If you don't get it almost exactly right you will still enter the wormhole but you will lose too much armour and explode.

(I think the part saying: "The main thing is to offset the fact that you come out of a jump about 2500 behind your nav point relative to the direction you are facing when you jump." is **extremely important and enlightening**, and it clarifies a bunch of other posts I'd seen that **add** to the direction you were jumping towards and had no idea why - since it seemed counter-intuitive, if anything).

If you load a save game you will start out at 0 degrees with a pitch of 0 at a full stop. If you have trouble lining yourself up you can load a save to make sure you have it exactly right, though it was not necessary for me to do that once I had confirmed the right amount to change the coordinates.

If you are feeling brave you can initiate the jump while you are moving, just make sure you don't have any horizontal or lateral velocity.

You can also use the fact that you jump 2500 away from your nav point to dock at stations quicker. Just offset the coordinate for the direction you are facing by 1000. If you offset it by more than 1500 you will not be finished coming out of the jump by the time you leave the docking area and you will not dock. It is debatable whether manually offsetting the coordinates and lining up your direction takes more time than it saves, but if you are waiting for your jump drive to charge you might not have anything better to do or if you are entering a very hostile space near a station

Finally, as thetiebers pointed out make sure the black hole you are trying to enter has a wormhole. Otherwise, no amount of precision jumping is going to get you anywhere other than to the Evoxchron universe's idea of an afterlife (ie a screen presenting you with the choice between restoring your last save and accepting your failure/exiting).

The easiest practice is to jump so that you are exiting the jump inside the wormhole.

The frame size doesn't really seem to matter as black holes appear to reduce your hull by percentage.

Make sure you have a repair system installed - ideally C3.

Civilian frames equipped with an engineer and repair system will recover faster, but military frames with repair systems are just as capable of making the jump.

Eclipse points out that some pilots suggest that you divert all your energy from weapons to shields and continually press the keypad 8 key to reinforce the front shield and that should help. ***This was the case for Legends but is no longer relevant in Mercenary - this is explained in the next paragraph.***

Actually, that doesn't work anymore. The main reason black hole jumping is much harder now is that the black hole simply ignores your shields. It begins directly damaging your hull, while your shields are unaffected (makes sense, since shields block impacts and explosions, black holes damage with the brute strength of gravity).

Aures confirms this: I diverted all my energy to the shields the first time I did it, but it isn't necessary. As Eclipse said, the black hole just reduces your armour by a fixed percentage per second. If you do it right, it adds up to less than 100% and you make it through. Otherwise, you blow up. Your shields are not reduced nor does the shield strength or recharge allocation matter.

I just jumped through a black hole in a Talon with a level 1 shield and weapons set to +5.

Asteroid caves

What are asteroid caves?

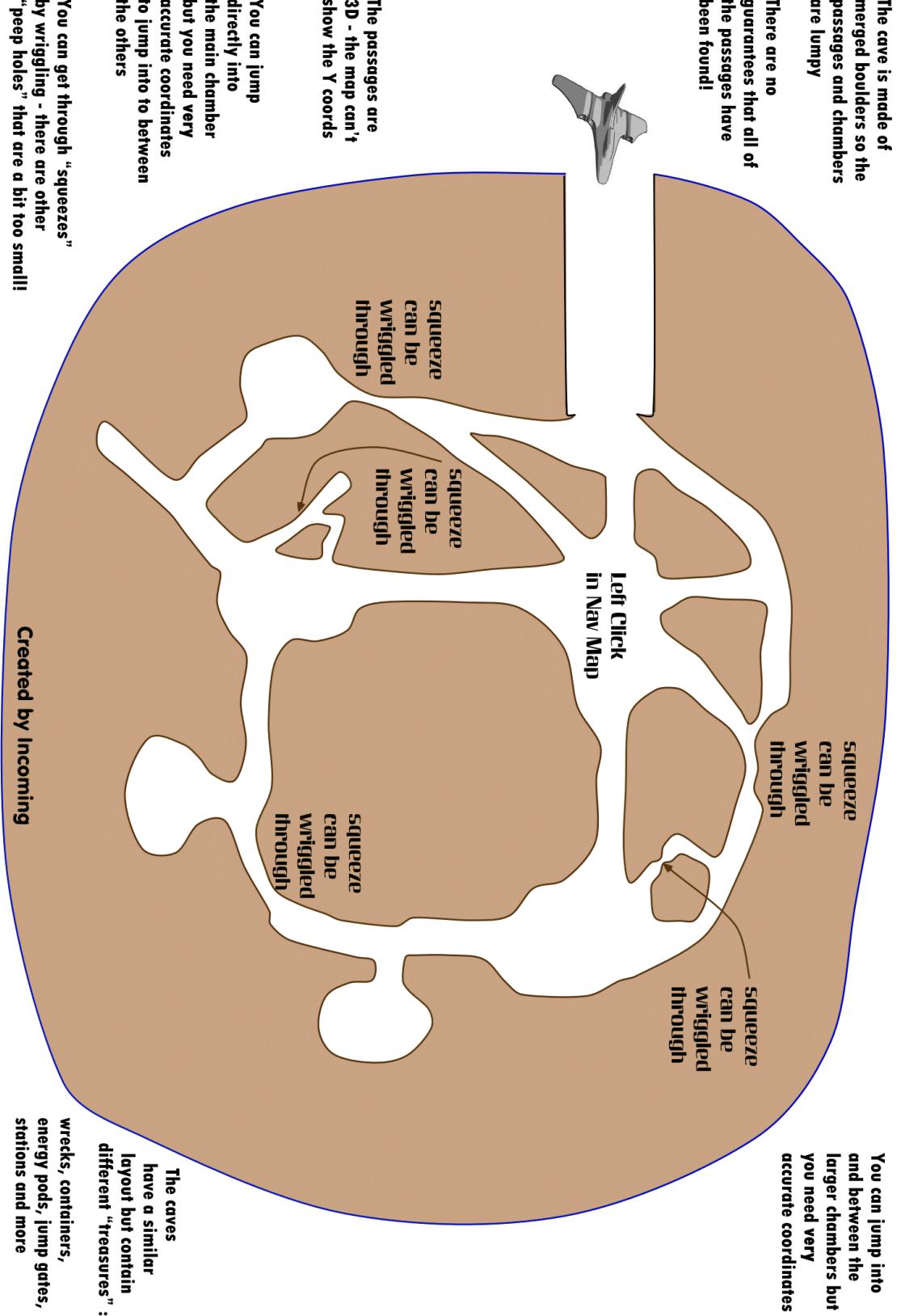
There's at least 5 asteroid caves, with cool stuff inside the caves (wrecks, stations, containers, gates etc.). CTF power cores/receivers are just the window dressing, and a game component no one apparently is interested in pursuing. In an earlier game they were used as flags for "capture the flag" competitions. There is a cave in Sapphire with goodies inside!

Where are there asteroid caves?

	System	Type	Sec X	Sec Y	Sec Z	Pos X	Pos Y	Pos Z
1	Agate	Asteroid Cave	-2202	0	3620	5500	0	8500
2	Agate	Asteroid Cave	-2198	0	3620	71453	290	-8147
3	Merak	Asteroid Cave	-1998	0	2498	40000	30000	50000
4	Pearl	Rebel Construct	3502	0	-1798	6625	305	13563
5	Sapphire	Asteroid Cave	1	0	-1	0	0	5000
6	WolfZone	Asteroid Cave	5550	0	5549	50000	0	30000

How do I explore an asteroid cave?

There is a generic map that is included in ***the Authorised Mercenary Tech Manual*** and as a graphics file - both can be downloaded from **SeeJay's site** (CaveMap). A smaller version of the map is also included here.



Basics - Clans in MP

Source: SeeJay's Enochron Basics Schools - <http://www.junholt.se/evoschool/index.htm>

These are pointers to get you up to speed regarding clan stuff and basic skills needed.

I will use **HB** as an example for the clan tag. This is not rules in anyway. This is what we consider common sense and honourable behaviour.

Clan Systems in MP:

- Add [HB] to your profile name. (When selecting profile, rename first. Mine is: [HB] SeeJay)
- When doing contracts with clan tag on, you affect systems by decreasing % control in another clan controlled system and increase % control in HB systems.
- Check control in Nav (F1) and Quadrant. HB are green.
- When controlling more than 70% in a system all clan members get paid 101000 credits for each cycle and system. Control % is frozen when a clan member is online.
- When offline, it decreases. To reduce decrease rate we build stations. Name stations with [HB] Name. The more stations we have, the slower decrease rate.
- Each system can hold up to 50 player build stations.
- To raise % in a system, do contracts in that system.
- Do not do any contracts in another clan's systems without approval from that clan.
Exceptions are: IMG quest, helping another pilot and warzones.

How does Clan System Control work?

... researched, field tested & compiled by DaveK - thanks to everybody who contributed a correction or extension!

Recently there have been some conflicts that arose through misunderstandings or non-understanding of the rules that determine how a clan gains and maintains control of a system.

As part of an ongoing education and help programme for all citizens of Enochron, GDF commissioned a research report to clarify and check all the rules concerned.

In the explanation below

- "**station**" means a "Trade Station"
- "**tagged station**" means a Trade Station named with a clan tag at the start of its name (e.g. **[HB] Refuel 01** is a tagged station of the Humble BumbleBees)

Levels of rules

There are **three levels of rules** that determine clan control of systems

1. rules coded into the game at programme level by Vice (e.g. the 50 station limit in a system). These are the "chiselled in tablets of stone" rules. The only arguments that can arise are from misunderstanding how the rules work.
2. rules determined democratically or unilaterally by the server provider (e.g. no station destruction permitted unless a pilot of the controlling clan is on-line - a USS server rule). Most servers will probably have a mixture of the two. Server Rules are upheld by the server provider; anyone transgressing server rules are dealt with by the server provider according to his/her list of punishments/consequences

3. "unwritten rules" that everyone thinks they understand and thinks that everyone else understands in the same way and thinks that everyone else will abide by (e.g. the 50% rule for a system having been abandoned).

Unwritten rules are inevitably open to interpretation without there being a final judge. They are also open to being ignored by either or both of the parties since they are not "written" rules. They inevitably will cause conflict at some point. If the conflict potential is high and the result of the conflict is serious and detrimental to the enjoyment of players then it is **strongly** suggested that rules be formulated either unilaterally by the server provider or democratically by the players and **preferably before** the conflict arises

There is a corpus of understanding within the community about clan control and how it works, though many pilots don't know (and don't need to know) the details beyond the facts that clan pilots do contracts to control a system and clans have to build and defend stations in a system.

Generally accepted knowledge:

1. There is a built in limit of 50 stations allowed in any system regardless of whether they are tagged or not (though see below for examples of when this is not actually true)
2. Clans claim systems by having clan tagged members do contracts in that system from any station in that system. Each contract done by a tagged clan member in a system the clan controls increases the % of the system by one up to a maximum of 100%. The very first contract is worth 2%. ([you have to be tagged to do contracts for your clan](#))
3. If there are multiple clan tagged pilots in a sector then all of the pilots get a credit for a contract done by any one of them. Therefore
 - a. if all the pilots have the controlling clans tag, the percentage is increased by the number of pilots present for each contract undertaken; 3 pilots = +3%
 - b. if all the pilots have a different tag to the controlling clan (and they can be a mixture of "other" clans), the percentage is decreased by the number of pilots present for each contract undertaken; 3 pilots = -3%
 - c. If there is a mix of controlling and "other" tagged pilots present the increase or decrease is the difference between numbers; 1 controlling pilot balances 1 "other" pilot for each contract done.; 1 controlling - 1 "other" = 0 overall
4. Only clan tagged pilots can do contracts that have a benefit for that clan. Contracts carried out by untagged pilots have no effect on the % control of a clan controlled system. If an untagged pilot or a pilot from a different, allied, clan wishes to help increase the % for their ally they **must** fly with the ally clan's tag.
5. A tagged station is **not** a requirement for clans to take control of a system. However, the more tagged stations a clan has in a system the slower the drop in its control %, up to around 20 - 25 stations. Above that number the rate of decrease in % control doesn't significantly get better. ([you don't need any tagged stations to control a system. - you only need 20-25 stations to minimise the rate of loss of control %](#))
6. Tagged stations can be created for a clan by **any** pilot, be they untagged, the clan's own tagged pilot or another clan's tagged pilot. ([any pilot can construct tagged stations for any clan](#))
7. Each contract done by a clan tagged member in a system controlled by another clan decreases the other clan's % of the system by one, down to a minimum of 2%. What happens next depends on whether the attacking clan has a tagged station in the system or not.

8. When the controlling clan's % reaches 2%:
 - a: if the attacking clan has a tagged station in the system the attacking clan's % will increase to 2% (and by 1% thereafter for each contract carried out) and the system will appear in the Quadrant Map as now being in the attacking clan's possession - the attacking clan becomes the new controlling clan.
 - b: if the attacking clan doesn't have a tagged station in the system then no clan will be shown as controlling the system in the Quadrant Map
9. If two clans have a tagged station in a system the clan with the most contracts will control the system and their clan tag will be shown on the Quadrant Map along with their % control. Only one clan at any time has a controlling % score and that clan is shown on the Quadrant Map
10. Understanding Point 9 is a vital because of the implication for alliances. If, say, [HB] has Atlas @ 100% and [TM] tagged pilots attack and do 20 contracts, the new result is that [HB] now has 80%. [TM] does **not** have a % score at all - it is **not**: [HB] 80% and [TM] 20% and it is **not** even that [TM] has a score of 0% either. **Only one clan has a % score at any one time.** What [TM] has done is to reduce [HB] % score by 20%.

[TM] will only start have a % control score when it has done **99** contracts. The first 98 contracts reduce [HB]'s score to 2% (remember that at this point [TM] still does **not** have a % score). When [TM] does contract 99 the situation becomes: [TM] 2% and now controls Atlas and [HB] doesn't have a % score at all. The program does not register 1% or 0%!

Only one clan has a % control score at any one time

11. Clans get paid per system per cycle. Each pay cycle every clan member is credited with 101 000 credits per system the clan controls (at above 80%). This is one reason that clans control so much territory. If they were to be paid per station in a system at above 80%, there would be less incentive to claim multiple territories and some justification in limiting the number of territories a clan can hold. It would also make systems like Olympus - which have several sub-territories each of which can have 50 stations - more attractive and might lead to more inter-clan clashes!

Implications

(Point 3); If your clan space is being attacked, then stick with the attackers and you will cancel out their contracts. If you have to away from the keyboard for a short while then "park up" in the sector another clan member is contracting in - he will get an extra point for each contract

(Point 5); There is no minimum number of stations required in a system in order to control it. Having stations simply decreases the rate at which a clan's control % is reduced. There is no real need to have more than 20 - 25 stations for this function to be fully effective. In theory this could leave plenty of building potential for Indie Mercenaries.

(Points 6 & 4); Any pilot can create a tagged station for any clan. Only clan tagged pilots can do contracts to the benefit of the clan.

(Point 1); There is a common method by which clans "protect" their systems. They "hide" 50 stations within the 3D system space on the principle that other clans will not be able to find the stations. It is generally believed that there is a maximum of 50 stations allowed in **each system**. As a result when a system is "maxed out" no-one else (including Indie Mercenaries) is able to build a station in the system.

This belief that 50 stations per system maxes it out is not totally correct. Some System's control space is divided into several smaller control spaces, each of which has a 50 station limit. **However only one clan can control the system as a whole and only one clan will be shown in the Quadrant Map**

For example, in the Olympus System, Olympus Prime controlled space has a maximum station build of 50; Olympus Delta's space has its own allocation of stations and hence it is possible for two clans to each have 50 stations in the Olympus System - one clan in Olympus Prime and the other clan in Olympus Delta (or both clans with stations in each). There are four or so sub areas in the Olympus System, but only one clan can control "Olympus"

In this situation the Clan with the most contracts will be shown as controlling the System in the Quadrant Map.

Misunderstanding this point may lead the two clans to believe that they are the legitimate controllers of a system because they have many stations within it. This can result in conflict between clans both of whom believe that they are the legitimate controllers of a system. They may interpret the contracts carried out by the other clan as reducing their % whereas the other clan may see their contracts as increasing their %. This is a subtle but important difference. Throughout history the "righteous" have been notorious for being very keen on "smiting" the "unrighteous", making a diplomatic solution unlikely.

The 50 station limit protocol is coded into the game programme. Any changes to the rule would require recoding by Vice. However once everyone understands how the rule is implemented, "confusion caused conflict" should decrease. People can go back to bashing each other's brains out from a choice made for the right reasons (it's fun) rather than from misunderstanding the rules.

(Points 9 & 10); Since only one clan can control a system, shared control is not possible under any circumstances. The rewards from controlling a system can therefore only go to one clan. Clans can join together to attack a system and take it away from its current controller, but only one of the attacking clans will have control after the war is over. Consequently clans need to give serious thought to what they expect from any alliance they are invited to join. As long as all the participants of the Alliance are aware of which will be the final controlling clan, there should be no problems after the conflict. As long as . . . !

Basics - Flying

Travelling safely through hostile systems

Engage the NavMap **before** you jump or as soon as it lets you when you are coming out of the jump or jump gate;

Remember you're not obliged to fight every red you come across; for example going through Thuban or Fauston is pretty much an exercise in running, since the entry gate from Sapphire is located close to several stations - as a result, the place is crawling with bandits.

Ignore them for a moment and plot a jump towards the exit gate to your destination or quickly pick a spot in the middle of nowhere that is near enough to jump to. That way, if you find yourself in the thick of it whilst hunting for the relevant gate, just jump out of the way.

If you decide to just hunt for the gate then you can launch a few CMs if the bandits start to get too friendly. I've made that trip in a badly shielded Arrow several times, unscathed except for a few launched CMs. And most of these were "just to make sure"

How do I know when the throttle is halfway or whatever?

There aren't any indicators in the cockpit display. But your "set speed" gives you an indication of the throttle setting - remember, engines only determine top speed (along with IDS multiplier) so if your maximum speed is 2500 and you have a set speed of 500, your throttle is set at 20%

How can I slow down fast?

Fast deceleration (useful in e.g. planetary descents, also to back off quickly from a place (without turning, which takes forever)): press reverse thrusters (default key "/") and afterburner (TAB). That is identical to afterburner (quick burst of acceleration), except backwards.

Rapid Atmosphere Descents for Cover

Source Viper: <http://www.starwraith.com/forum/viewthread.php?tid=8478>
plus an addition or two

Need to make a quick descent? Because your ship is basically a flying brick, you can use its high drag to your benefit when making a planetary descent. When flying into an atmosphere nose first, it takes a long time to slow down to safe speeds when approaching at anything over about 1500 MPS. But if you change your descent angle, the drag can make the process much faster. Just as early space shuttles would lift the nose to expose a larger surface area on descent, you can also use a nose up approach to slow your ship down much faster.

Remember though, if you don't use this technique you cannot use speeds greater than 1500 in the atmosphere, because you burn up - gradually, though. Depending on your shield and armour it can be even lower though, so be careful.

It is wise to add power to your shields (5S/-5W) before descending into the atmosphere. Keep an eye on your shield gauge. As soon as you see your shields going down, quickly reduce speed to reduce the atmospheric friction. **If you're too late your shields will give way and your hull will burn away.**

However, there is a neat little trick you can perform, but it takes some practice. Like the real life Space Shuttle, you can use the friction of the atmosphere to your advantage. If you enter the atmosphere with your nose pitched up about 20 degrees, you will present a much larger surface of exposure to the atmosphere thus creating more friction. This will act as a brake. To do this, set your flight mode to 'Inertial' and increase your speed up to however high you dare it to be, then shortly before you think you're going to hit the top layers of the atmosphere, pitch your nose up to about 20 degrees (more or less aligned with the planet horizon).

The change to atmospheric flight mode is usually around 180000

As soon as you hit the atmosphere, you will see a bright red glow coming from under your ship, and your speed going down really quickly until it reaches normal values. . The faster your initial speed, the lower your altitude will be when you reach safe speeds (so if you want to reach the city docking port faster, approach the planet at higher speeds). Once the burning cycle completes, your forward velocity will remain in the safe zone and you can then fly in any desired direction. Your shields will hold!

If you time this right, you will find yourself able to approach a planet at speeds in excess of 6000 (!) without damaging your ship.

This takes some practice and you will probably burn up a few times before you get it right, but it can save you a lot of time when descending into a planet. It can also be helpful if you want to escape some baddies and find safety on a planet surface.

Is it possible to not use fuel during planetary descent?

I cut my engines out completely when I hit the atmosphere and allow myself to freefall, however I notice my fuel is still draining.

Source Vice: No, although fuel use is pretty low when you turn off the IDS. When the IDS is on and your speed setting is high enough, your ship tries to maintain forward momentum to generate enough lift to keep you in the air. Your ship also often needs to fire thrusters to keep you airborne when the lift is insufficient to hold your ship in the air. Stability is also attempted even when you have the IDS off in an effort to keep your ship moving in the direction it is facing. Although the spacecraft in the game can descend into planet atmospheres, they are generally designed and optimized for space flight. It's a good habit to get into to include descent costs for any planetary trips you want to make. Also, you can often recover some/most/all of your fuel costs on descent by just tracting oxygen as you descend, then sell it at the city once you arrive.

Reverse Thrusters Can Use the Afterburner

A useful tactic to know is your reverse thrusters on afterburner provide nearly the same level of power as your main forward afterburner. Hold the reverse thrust key/button down and hit your afterburner to greatly increase the power of your reverse thrusters. If you ever need to back up in a hurry or increase reverse speed, this option can come in very handy.

Autopilot behaviour

Source shepard_3: The autopilot only uses jump drive, if your nav point is outside of your current sector you are in. If your nav point is in the same sector as you, it'll just lead you there at full IDS speed

What's the difference between using the jump drive (F2) and using the Autopilot (Alt-F)?

The default **F2** key activates your jump drive and jumps to the destination you have set. (You might want to remap this key if you find yourself jumping when you meant to open the NavScreen(F1) or the Inventory Screen (F3)!

If the destination is further away than your jump drive can reach in one jump, you will get a message that the jump drive can't reach the destination

If you activate the (Alt-F2) Autopilot your ship will swing around to point at the nav marker for your destination and then make a series of jumps to get you to your destination

Also see question about why contracts can automatically fail when you jump to the waypoint

Avoiding Friendly Fire

Any time you fly with a tag (e.g. [IM] Marvin), anyone with a different tag will show as an enemy (red) on your target displays (HUD, radar, and right-hand monitor). Consequently, if you enter a sector where combat is taking place, (in the heat of battle) you're likely to be mistaken for the enemy. So, be on your guard and prepare to move out of harm's way. Or wait at the local trade station until the contract is completed. Or at least announce your entry (admittedly, chat messages come fast and furious right now and an announcement might be easily overlooked).

Then, after you've sorted out the fact you're a good guy and not really red, you might notice that all the other tagged pilots are red to you. The solution to this problem is simple: press the Numpad minus key (-) while the apparently red friendly is targeted. S/he will immediately turn green. And request that all other pilots do the same for you.

Opinion: How can I control the amount of sideways drifting when flying inertial?

Source Flying Brick: When in Inertial Flight Mode sometimes you want to stabilize your ship, in other words reduce your drift in any direction except forward, during inertial flight.

A quick way, if it is safe, is to switch off Inertial Drive until the strafe marker (that show the direction you are travelling in) returns to the centre of the gunsight.

You can also use the lateral thrusters (A or D for lateral, Z or X for down-up) to zero your horizontal and vertical velocity - the info is given just above the radar on your HUD

Some pilots find this is relatively slow depending on your eye-hand-math coordination. You may find it easier and more intuitive to do this by moving the strafe marker towards your gun-sight (which is in the centre of the screen). If you are using a HUD mod it may be a different shape and colour - switch to inertial and play with the lateral thrusters until you spot what it looks like!

The small blue square represents your actual real heading; if you have lateral speed towards right, it will be to the right of centre; if you have speed towards down, it will be below centre; if you have lateral speed towards left and up-down speed towards up, it will be above and to the left of centre. Bringing this back towards centre is, for me, much faster and simpler because I can follow it with my peripheral vision and I don't have to constantly decide which fingers to use on which thrusters, based on what the figures and directions in the display readings are showing. Just focus on getting the square to the centre.

Safely jumping as close to a planet as possible (aka Atmosphere Skimming)

Source Austin

As I have been convinced for quite sometime landing on the Earth does not involve jumping, here's what I've learned on atmospheric skimming.

I have compiled this data through rigorous testing at Sapphire, New Hope and Mars (I chose these planets as controls since they all are Earth sized planets), as well many failed attempts at landing on the Earth. By Earth sized I mean they all have a parking surface radius ranging from 19k at water level and 19k to 21k at ground level.

Approaching an Earth-sized planet will result in the following:

1: you will enter the planet's gravity field at 30010 decameters from the centre of the planet, prompting your altitude meter at 508000m.

2: if you are approaching the Earth, you will suddenly become flaming metal confetti at 30000 decameters from the centre, with an altitude reading of 507500m.

3: you will enter the planet's atmosphere at 23100 decameters from the centre, with an altitude reading of 162500m, prompting your ship to switch to planetary mode.

The maximum safe velocity in atmosphere is 1475, which makes for a very turbulent, but non-damaging, flight. Unfortunately, as it appears impossible to slow your ship from 10k to 1475 velocity quickly enough after dropping out of a jump, direct atmosphere jumping is a negative.

Note: If you have a navigator hired on to your crew, he will not be cool with you jumping so close to a planet. Fire him first, for being too scared to push the boundaries...

Now to skim a planet's atmosphere:

- Set your heading to 0° or 180°
- Right click on the desired planet in your Nav Map
- Add or subtract (depending on which side of the planet you wish to come out on) 26900 from the Nav Marker's in sector X coordinate
- Add or subtract (depending on your heading) half of the distance you would normally adjust for a black hole jump
- Launch!

For other headings, just do the math and adjust your coordinates accordingly.

Obviously you have no immediate control of your ship when dropping out of jumpspace. By halving your drop out distance, you have full control of your ship as you make the closest approach to the atmosphere.

I have an in-game method to determine a ships exact jump space drop out distance. The exact drop out distance for a Starmaster frame is 2950 decameters. Since it is the only frame I use, I can't give exact numbers on the others.

Also worth noting, if you haven't come across it yet, jump times, with a Cannon Relay System equipped and your weapons set to +5 (to minimise recharge time):

4 jump per minute = 20 jumps per 5 minutes

However, if you are doing long distance multi-jump journeys there is a small time saving because you don't need to slow right down between jumps and so that the actual number of jumps you can do per hour is around 310 rather than the 240 Jumps you might expect

Basics: Manoeuvring (including combat)

Source: SeeJay's EPOCHRON Basics School : <http://www.junholt.se/evoschool/index.htm>

(Inertia/IDS)

The basic principle of inertia is that in Space there is no friction to stop or slow down a moving object. So once your ship is in motion in space it will stay in motion unless you apply an opposite force using thrusters to slow you down or change direction.

Combat comes down to managing your speed, drift and direction to control your distance and approach angle to your target and there is not one way since it depends on what your target is using for strategies! So to give a step by step for each situation would be nearly impossible.

Probably the easiest way to train yourself in using it is to concentrate exclusively on forward thruster and afterburner.

- * Engage Inertial mode.
- * Pick out an object in space that's stationary.
- * Turn your ship and point at the object.
- * Fire your afterburners until you reach about 1000 mps.
- * Try to keep your nose pointed at the object.
- * After you pass it, fire your afterburners again until your speed is zero.
- * Now repeat, only this time watch the drift readouts displayed directly above your radar screen.
- * Turn your ship until those drift readouts approach zero.

To change direction, you first need to apply thrust against your current direction. Then your ship will begin moving in the new direction. Until then, you will continue to drift in the original direction, at the speed you were at when disengaging afterburner.

Doing laps around a stationary object, such as a station, with IDS off is a useful drill to work on these skills. In no time, you'll be able to do controlled, 3D orbits of the station inside an imaginary sphere.

Another way to practice is to set a Nav Point and turning around the Nav point in circles trying to

keep a very short constant distance between yourself and the Nav Point with your nose Pointing at the Nav Point and firing your Weapons at the Nav Point.

Applying it to Combat:

The thing to keep in mind is that when you drifting in a certain direction at a speed of 1900 that no missile will be able to hit you since the fastest missile, the Excalibur, speed is 1800! So you have to know the speeds of your missiles and the speed of your target to know if a missile is going to be effective and shoot the missile at close range so that the enemy does not have a chance to deploy counter measures. So the basic steps are:

1. You set a course for your target if your Target is an AI at a velocity of 1500 or more for faster approach(because AI do not use Excaliburs)
2. Once you have your approach angle set switch to inertia at the desired speed once you get in the desired targeting range for missiles or weapons fire the desired weapons.
3. Sometimes a target uses a spiral evasive manoeuvre. The fastest way to take this one down is to get as close as you can on its six, with IDS on and using after burner, to 50 to 300 units and maintain this distance while firing your missiles and or your weapons with energy to all weapons!

Basics - Jumping

How do I jump through a gate inside an asteroid cave?

You need to hit the gate at very high speed (>10K) so line up with it so that you have the longest path to travel and set a jump point somewhere - then jump towards it. If you get it right you enter the gate at 10K+ just before you actually jump and the gate takes over the jump - you are going so fast that you jump before you hit a wall! It's a bit like the jump into the wormhole in the black hole in terms of getting it just right!

How do I jump through a Black Hole?

Quick advice: Fly to the same sector ... or at least within range of your jump drive. Pitch zero. Heading zero. Right click on the black hole. Subtract 2000 from the Z coordinate. Then jump.

If you arrive too far away from the WH and explode before you reach it, subtract 500 from the Z coordinate reduction and repeat.

You will take a lot of damage so have a repair system fitted in case there aren't any stations at your destination!

Save **before** doing any of the above.

See also the section about Blackholes

How can I jump directly into a station? (or an asteroid cave or a carrier or a Black Hole or a Jump Gate or a Worm Hole!)

In a non-hostile system, use the usual left click in the NavMap technique:

In your nav map just right click on the station, carrier or construction station to have the nav coordinate set. On your compass make sure you're heading is 180 degrees for a carrier, 0, 90, 180, or 270 degrees for a construction station to come into the entrance(s) straight on. Also set your pitch to zero too. It doesn't matter what heading you use for a Trade Station. Before the jump to a trade station, engage inertial and you will glide right in

In a hostile system, set your compass to zero, right click to set the coordinates and then add 1000 - 1500 to the Z coordinate in the destination section of the NavMap. This is because you come out of a jump about 1500 before the target - you should then enter the station almost instantly. The tricky part is getting the nav adjustment correct but after you figure out the "magic number" you can jump straight into anything.

When doing a "hot dock" open the inventory console just before jumping. This negates the time needed for the panel to open after docking (in hostile areas those seconds can really count), and it also prevents those nasty carrier crashes if you have disabled auto-dock.

Summary

- On the nav map, right click on the object you want to jump into.
- Set pitch to 0.
- Headings only matter for carriers (180) and gates (0 or 180) and BH (0) - jump!

Can I jump directly to a planet?

You can't jump to a planet. You'll burn up or smash into it.

You can't jump while in atmosphere either (Jump from a planet).

Right Click only objects in space, not planetary, when you want to jump. Jumping into the centre of a planet is a once in a lifetime event!

Basics - Answering Distress Calls

These have a very (some would say ridiculously) tight time limits. You don't have time to find the materials required or mine them and then deliver them within the time allowed (about 3 minutes).

However there is a limited number of things that require delivering in a crisis.

The only way I could succeed was to have a civilian ship with five cargo bays (to manage typical distress missions) and a big fuel tank (for SAR requests). I stocked up with 25 each of :

- medical supplies
- metal ores/alloys
- water
- oxygen
- food

Other emergency supplies that come up now and again include caviar, champagne, designer sunglasses, botox, nail polish with coordinating lipsticks and sunscreen lotion but I concentrated on the commoner (and better "feel good factor") crises.

There is a fairly fixed payout for most of them (1 250 000) so it can be a profitable, smug and fun way to make money fairly easily, cashing in on fellow citizens' misfortune - factor in the time to replenish your supplies though. If you can do a mission every, say, 10 minutes you earn 7.5 million credits per hour - plus get a great feeling of being a good person.

Or you can become a pirate/Reaver/Bad Alien (a clan) and earn less money but have the satisfaction of sounding like Long John Silver in a bad pantomime.

Or you can do two 5 minutes runs in Pearl

Cynic . . . moi???

If you don't want to be distracted you can switch the distress calls off from the Nav Screen (bottom right hand side)

Basics - Equipment

Snippets

For the most part, higher classes of equipment are "stacked". A class 5 fuel tank, for example, is five fuel tanks stacked together.

Vice: The cycle rate of a particle cannon is roughly how many rounds fired per minute, not time between shots (that is, cycle rate = firing rate). The yield is how many damage points each hit inflicts.

Discussion: Designing ships, tradeoffs between components

Source Vice: By contrast, let's compare the shield system in Eochron. Rather than just having one part that controls all aspects of the system, you get to choose 3 separate and functionally unique components to effect how well or poorly the shield system on your ship works. First, there's the frame, which sets the raw power your ship can provide to the shield core. Then you select which shield core you want, each one can provide better protection, but each one is also limited by how much power you feed into it by which frame you select (this is where things can get better or worse depending on your configuration/design selection, not just which part you pick). Then once you've established the frame and core, you select boosters, also known as the capacitors, which determines how much power you can store and for how long. The combination of these factors determines the level of impact your ship can sustain and how well it can recover/recharge lost energy displacement.

Combined with these primary function factors, you also have to consider how the components you select will impact other systems on your ship, including engine, cargo capacity, fuel capacity, and wing/thruster system. Each frame offers a certain level of assembly resources that you can deplete from one design element to give to another, so you must balance your design with your preferred preferences in all of these areas.

What do "Kinetic" weapons do? What's the trade off for the lower yield?

Basically, it knocks your opponent around so hard he can't aim. There are kinetic cannon and kinetic missiles available

How do you use a deployed refuel station?

- Come to a stop
- Level your ship
- Deploy a fuel processor (you must have a Deploy Constructor installed)
- Dock with it and move as close to the central pillar as you can. You'll know if you're "in the slot" even before you see the gas gauge go up 'cause your Energy gauge will start fluctuating madly.
- Set energy balance to -5 shields and 5 weapons.

You get 5 units of fuel every 9 sec or so.

Wait . . . and wait some more . . . and some more . . . go have a coffee - it takes 45 minutes to fill a 2400 unit fuel tank - and 45 minutes to empty on a multi-jump journey of more than 2400 sectors!

What advantage is there having bigger engines?

The acceleration of the ships is **not** modified by different engine classes. The size of the engine only affects the top speed of a frame. Before the standard installation of the IDS multiplier to all frames the advantage of the bigger engines was significant for the larger (and slower) bigger frames. Since the IDS multiplier increases the basic frame top speed by between x2 and x5, even the slowest bigger frames have more than adequate top speeds. For example in combat many pilots use IDS x3 to stop then reaching speeds that are too high!

Source Flying Brick: This is well worth knowing - I've maxed out the construction level of my StarMaster but want to add some extras (like a bigger fuel tank for exploring between known systems without having to deploy fuel and shield generators so often) but naively thought that I needed the extra acceleration of a bigger engine (to balance the extra mass of a bigger frame) more than the extra fuel capacity. Wrong!!

With the IDS multiplier that I don't use at more than 3x, I can reduce the engine size, increase the multiplier and keep the same max speed but free up some points for a bigger fuel tank and perhaps nippier wings!!

What are a ship's "Assembly Resources"?

The assembly resources indicated for each frame are not merely a limitation of space available to components, but also the power available to them. With a higher assembly rating comes more available power overall. So you can use that as a general guide for an idea of the power available to a ship's systems. So what you'll notice is that a Pulsar offers a slightly higher level of power/resources versus a Talon while the Leviathan offers 250% more.

Equipment clashes I - Shield Recharger and the installed (multiple use) Stealth Generator

If you use both the shield recharger and the installed stealth generator, then when you enable the stealth the shield recharger will instantly use all the weapon energy for trying to restore the shields, so the stealth will remain really less longer (20% for me). Vice says that this is working as intended, this is intentional behaviour; you need to decide and choose which pieces of equipment you want to use, all do not necessarily work well with all others."

How should I choose ship armour and shields for the most efficient balance?

The shield system on all ships in the game depends on two components, a shield core and boosters.

The core is the central control and energy emitter management system. Its performance is determined by the core class you select when designing your ship. Larger frames with more assembly resources can generally handle more powerful cores with fewer compromises in overall design.

Boosters are the capacitors of the shield system, they store the energy for each array and deliver it to the shield core. More boosters means more energy storage capacity, resulting in more resistance against weapon impacts and more power to manage between all 4 shield arrays.

Larger frames also generally provide better armour to protect the hulls.

Where can I get a . . . ? (spoiler!)

The table gives at least one example of the harder or more interesting things to find. Several systems contain a "Hidden" (uncharted) planet that sells equipment not available commonly from elsewhere (Stealth Generator for example). These are marked a "H"

Systems ▼ (spoiler)	Maxim-R Cannon	Phantom Cannon	Baneshee Cannon	Trebuchet Cannon	Eclipse Cannon	Proximity Mine	Fulcrum Torpedo	Station Detonator	Excalibur Pack	Cannon Relay System	Cannon Heatsink	Stealth Generator	Anti-Missile System	Shield Array Recharger	Auto CM Launcher	Afterburner Drive	Specialised Mining Beams	Deploy Constructor	Build Constructor	Mantis Drive	Fuel Converter	
equipment	§	§	§		§		§	§	§						§	§	§	§		§		
Agate Hub	§	§	§			§			§							§	§	§	§		§	
A- Centauri		§				§	§	§	§							§		§	§	§	§	
Aries								§									§	§	H			
Atlas	§	§					§		§							§		§	§		§	
Aquila	§							§		§			§	§	§	§	§	§	§		§	
Capella	§	§				§		§	§							§		§			§	
Cerulean	§	H	H				H	H	H	§									H	§		
CWZ																		§	§	H		
Cygnus				§						§											§	
Deneb		§	§					§								§		§	§			
Emerald	§																					
Fauston					§					§											§	
Lambda					§					§											§	
Lost Rucker																					§	
Olympus				§																		
Onyx	§									§											§	
Orion					§					§											§	
Pearl	H	H	§		H	§	H	§	§	§	H	H	§	§	§	§	§	§	§	§		
AWZ	§	§	§		§	§	§	§	§				§	§	§	§	§	§	§	§		
Pices						§				§											§	
RiftSpace		§					§	§	§		§		§	§	§	§	§	§	§	§		
Rucker	§	§					§		§							§		§	§	§	§	
Sapphire																					§	
Sierra				§		§			§	§								§	§			
Sirius	§									§								§		§		
Sol		§	§				§	§	§	§				§	§	§	§	§	§	§		
Talison					§																§	
TWZ	§	§				§	§	§	§										§	§	§	
Thuban											§										§	
Virgo					§					§										H	§	
Vonari		§					§	§									§		§	§	§	
Wolfzone		§					§		§								§		§	§		

What are stealth devices? What are they used for?

Source Vice and various:

Depends on which kind. There are two types of stealth devices in the game

- weapon hardpoint-installed single use devices (60 seconds and then discard)
- reusable equipment devices. (time per charge depends on ship - recharge for re-use)

One provides a stealth field at just about any time in a one time use device -it installs on a hardpoint. that is it is mounted on your ship as a secondary weapon and can be activated the same way as you fire your missiles. Just select it from your secondary weapons and hit the fire-your-secondary-weapon-key. You can carry up to 8 of these.

The other provides a reusable stealth field, but requires all shield arrays to be at full power as it uses those arrays to create the stealth field, rather than generating it internally like the other device. It also depletes your main energy, which requires recharging after you 'decloak'. (As soon as you are safe, set the energy balance to 5S / -5W until your shields have recharged. The stealth generator is more expensive but it is reusable

So each device has its own advantages/disadvantages and installation/use requirements.

Stealth devices are active devices. So you have to activate them.

What do Shield Boosters do?

Shield Boosters are like the capacitors/batteries of your shield system. From the strategy guide:

The shield system on all ships in the game depends on two components, a shield core and boosters. Boosters are the capacitors (energy store) of the shield system, they store the energy for each array and deliver it to the shield core. More boosters means more energy storage capacity, resulting in more resistance against weapon impacts and more power to manage between all 4 arrays. There are five classes of shield boosters - Class 5 is best

Opinion: Equipment Clash II - Is a Shield Recharger worth fitting?

There are differing opinions here, though most people are negative, possibly because they are a blood thirsty bunch in Mercenary!

Shield Recharger... someone is gonna thwap me but this thing just plain sucks. This is a device that you should only have if you aren't actually intending to fight - if your goal is to survive and nothing more.

This device detects when your shield is being compromised and uses energy to recharge your shields. Basically giving you the ability to focus full energy and not have to alter the shield/weapon energy balance when taking hits. In that respect it's cool and *if* you are really good at dodging shots or just want to escape to carry on trading or exploring it is a very nice piece of hardware.

Where it fails however is that it uses a considerable amount of energy and more often than not you can and probably will find yourself out of energy for fighting or jumping. What this essentially means is that your shields are beefier but you won't have energy to fire weapons with if you're taking hits. Not a very good trade off in a fight - but good for escaping - run away until you have enough energy to jump!

The big problem with the Shield recharger is that it can't be switched off. Without an off button this weapon is more likely to get you killed than save you from getting killed because you won't be able to fight back with your primary weapons. You can use missiles and then run for it in the confusion!

Also you cannot have this equipped if you intend to use a stealth generator. If you use both then when you enable the installed stealth generator the shield recharger will instantly use all the weapon energy for trying to restore the shields, so the stealth will for a much reduced time (20% for me). The criticisms only apply to the installed multi-use generator. The secondary weapons, hardpoint use-once generator doesn't have these clash problems - it has its own energy store, but doesn't last as long. You can fit several and use them one after another though!

This is working as intended, this is intentional behaviour; you need to decide and choose which pieces of equipment you want to use, all do not necessarily work well with all others.

Opinion: Is a Afterburner Booster Drive worth fitting?

All ships are fitted with afterburners. The Afterburner Drive is an add-on that boosts the fitted afterburner's performance.

I bought an "Afterburner Drive" piece of equipment for the ship, thinking it would be handy given all the comments about how vital the afterburner is in combat. but all it did was get me killed. It seems like it sucks my energy down to zero and doesn't help me accelerate all that much.

The Afterburner Drive siphons energy from weapons/Fulcrum Drive and uses it to increase afterburner thrust output 40-75% depending on your frame/engine setup. I personally only like it on heavier frames, & even then, using the afterburner in bursts can be limiting. It can be useful to run away if you need time to repair but in combat, losing weapons energy is a negative!

What is an IDS multiplier? - How should I use it?

IDS multiplier increases your top speed; acceleration stays the same

You have to assign a Key on page 3 of Key assignments in the Set Up options for the Multiplier to work. The default has no Key assignment. I tend to set it to + and - because that puts it near my shield and weapon energy assignment keys, those are the ones I don't have mapped to stick and that I use most often.

This sounds useful. Is there a drawback to increasing the ids multiplier? It seems that having it at x5 at all times would be best...

You will easily "overshoot" targets if you come in too "hot".

Also burning up in atmosphere is likely to happen if you have it on x5.

When doing races, it's easy to "fall off" the track if setting is too high.

I adjust the IDS multiplier depending on the situation. Running around in open space it's set to x5.

Some pilots keep it on x3 for combat, but basically as high as you like. If your speed is too high on intercept then you can overshoot your targets, but there is no proper drawback, I mean you can always slow down after all ;)

What equipment is vital? (Everybody agrees on these!)

1. Cannon Relay System which doubles cannon firepower
2. Cannon Heatsink which improves the rate of fire
3. Particle Cannon and Beam Weapon combination (see elsewhere for options) - though some think that the beam weapon is a waster
4. C3 repair unit
5. C5 shield booster
6. Mining/Tractor beam (first piece of equipment you should fit!!)
7. Mantis Jump Drive - jumps 10 sectors at a time

Note that this takes up 7 out of your 8 equipment slots - it's usually agreed that a Deploy Builder or Construction Builder (or both!) are pretty important

IDS multiplier!! Bind that to two keys, since it's not bound by default to anything and you want to use it. It is fitted to all frames as standard

Opinion: Blackthorne's recommendations for equipment loadout:

Essentials:

Mantis Drive (for quick travel)
Class 5 Shield Booster (required, so you might as well get the best)
Class 3 Repair System (essential for combat, since any weapon/engine damage needs to be patched up on the double)
Cannon Relay System (more weapon energy, also more **dakka dakka***)

Nice to have (pick as many as will fit):

Cannon Heatsink (even more **dakka dakka*!**)
Stealth Generator **or** Shield Recharger (seriously, just don't mount both. One to hide and one to weather any assault.)
Mining/Tractor Beam (required for a lot of missions)
Deploy Constructor (the swiss army knife of equipment slots)
Anti-Missile System (pops missiles and doesn't use limited resources to do so)

Specialized Equipment (mount as necessary):

Fuel Converter (when you want to siphon fuel from a nebula, sun or gas giant)
Build Constructor (when you need to build something that will be permanent)
Specialized Mining/Tractor Beam (when you need X amount of Y quickly)

"Other" Equipment (IMHO total waste of slots):

Auto CM Launcher (goes through CMs like candy, leaving you high and dry when you really need them)
Afterburner Drive (nice idea, but in combat I need to shoot **and** burn simultaneously, and the gain in acceleration is too marginal for my taste)

* dakka dakka - Geek talk: From the universe of Warhammer 40K; The race known as the Ork communicate in a very basic English words and noises. "Dakka dakka" has multiple meanings but a general translation would be: "BANG BANG" - mimicking the sound their guns make when fired.

Basics - Reputation

The main source of information is the Legends Guide and the two extended debates in the Forum. Several individuals have contributed data and evidence and interpretations and are acknowledged below.

This topic appears to cause more confusion than most others in the game, with Clan Control in MP running it a close second! Partly this is because it is quite complicated with one overall system reputation plus five separate faction reputations in every system and partially because the rules are different in MP and SP. The link between SP and MP reputation seems to have changed from what it was in Legends (and may have changed as a result of extended discussions in Mercenary) which probably adds to the mix because some experienced pilots are still applying older rules to Mercenary!

Vice (developer) on reputation in SP vs MP

includes excerpts from previous discussions, debates, etc, on the topic:

The main reason for the separate reputation structure between SP and MP in Eochron is to allow players to perform activities in MP that do not impact their earned individual SP reputations while still allowing them to keep everything else they've earned to use in both SP and MP. From previous discussions/debates about it:

Multiplayer reputations are synchronized for human players as part of the fleet system and to accommodate the conditions for multiplayer itself. Reputations are 'locked' in to protect your earned reputations for various actions while you're in multiplayer (primarily so that taking actions you may need to in multiplayer do not adversely affect the reputations you have earned in single player).

The primary reason for this are the player requests for a 'no-penalty' environment in multiplayer. That is, players want to be able to take actions in multiplayer (coop or otherwise) that they normally would not take in single player and not have their reputation penalized for it. As an example, they may have to attack ships that they were normally allied with in single player due to circumstances in multiplayer caused by helping out other human players. They want the option to do that without harming the reputation they worked so hard to achieve in single player. This lets the player do whatever actions they want in multiplayer without worrying about hurting their (hard) earned single player reputations.

And if you've played certain other games, you've probably encountered the scenarios where one player has a bad rep in the same system one of their coop buddies has a good rep, it then hinders their ability to find jobs where they want when they want and to complete those objectives because they fail to share a reputation... even if they are of the same 'clan'... even if they are 'linked' together in a group... even if they are flying together in formation both as human players. And that's another element to why human reputations are linked together... but really just for common location.

So rather than having a spaghetti reputation system, where even friends can have different enemies and allies in the same system (even though they themselves might be linked by group or common coop interest) resulting in interference for working together or even just trying to travel together, human reputations follow human activities based on location. If you're flying with a buddy, you can expect to have the same enemies and allies come along.

Pros and cons to each method, but this system does have its reasons. In short, the system is designed to facilitate group participation more than individual rep threads. Plus, you don't lose what you earn in SP, whether by your actions, the actions of others, or your actions together as a group.

Overview: How does the reputation system work?

First, there are 4 global reputation categories: Hostile, Moderate, Fair, and Good. Each one of these establishes your overall reputation in an area of space. Generally speaking, having a positive reputation in a system means you are on better terms with local military, energy, and mining factions/companies and are on poor terms with local rebel and guild/clan factions.

To earn a better reputation in a system, you need to improve your standing with the local navy, energy groups, and miners (although navy and energy have the biggest impact, so focus on those). To reduce your reputation, work against navy and energy interests while working for the interests of rebels and guilds/clans. It takes time, consistency, and loyalty to make a major change in your overall global reputation.

Short term efforts are often ignored as the various factions in the game view that as 'system hopping', considering you only an impatient opportunist and not someone they can count on to work for them long term. So to effectively transition from one reputation level to another, you need to consistently work for and protect interests of the needed groups. As you do this, you'll notice your individual reputation levels will start to change.

Each global reputation is divided into specific faction reputation levels (displayed in the News Console). These secondary values are the core of how the reputation system works and is what you will need to monitor in order to gauge your progress. They indicate the specific progress you are making toward the next tier. You have to shift specific faction reputations to the near maximum or minimum limits to make a change in your overall global reputation. As the faction reputations approach very high or low levels, you are likely getting close to the next global reputation tier. If you want to earn a better reputation, your goal is to increase the faction values for navy, energy, and miners while decreasing values for rebels and guilds/clans. The top and bottom 10-15% of the reputation bars are where transitions from one tier to another can take place. Once you achieve about 85-90% positive reputations with the local navy, energy groups, and sometimes miners while at the same time reducing the values for rebels and guilds/clans down to below about 20%, you will likely be very close to advancing your reputation to the next level. Once a transition occurs, you will be notified on your HUD and your faction reputation levels will reset for the new global reputation level (usually around 50% or so, indicating the middle of the new global level).

Basics:

In addition to the overall system reputation level, you also have individual reputation levels with the specific factions in each system. There are five factions: Energy Companies, Navy, Rebels, Guilds and Miners.

The overall system and individual reputation levels are Good, Fair, Moderate, and Hostile

A Good system reputation level generally means you won't encounter hostile ships, unless you attack friendly ships. A Fair reputation level generally means you will likely encounter hostile ships on some occasions. A Moderate reputation level generally means you'll encounter many hostile ships and have to pay docking fees to be given permission to conduct business at stations and planets. A Hostile reputation generally means you'll encounter mostly hostile ships and have to pay docking fees. Fair and moderate systems typically offer the widest variety of contracts.

When you first start the system reputations are:

Good: Sapphire - Sol - Atlas

Hostile: Sierra - Aries - Thuban - Pearl - Vonari - Capella - Merak - Riftspace

Fair/Moderate: all the others

Improving your reputation in SP Part I - System Reputation

- Your overall system reputation will likely increase by staying on the legal side and completing contracts with company/military factions who are generally part of the system's economy and government.
- Completing contracts with rebels and guilds who often work against the other groups will likely decrease your system reputation.
- There are advantages and disadvantages to aligning with one group or the other.

Source Flying Brick: It is very easy to raise your rep with Navy: you get many contracts offered all the time; each contract for the Navy will also raise your rep with Energy, although it seems that by a lesser amount. Usually, I saw each contract raise my rep with Navy by an amount between 1% and 3%.

You do not get offered any contracts for Energy, but if you check out the tables below, you'll note that some contracts for the Navy also make the Energy happy; also, killing Guild/Rebels (which you'll do in Navy missions) makes Energy happy as well.

So in the first part, while focusing on getting Navy to 100%, you'll also get Energy to raise whether you want it or not.

The other thing you need to do is reduce reputation with Guild/Rebels. Rebels are easy enough; Guild is considerably more difficult, because in most missions for Navy your enemies will be Rebels, as I said before; again, this isn't a scientific observation; but it was very rare for me to get Guild enemies in Navy missions, and those were most of the time "new" guys coming in (i.e., reds that appear after you get to the navpoint, guys who come in because they are called by their friends).

So how do you lower your Guild rep? By doing contracts for the Miners (again, see the table). That's easier said than done, because you get at most one contract from Miners, and often not even that.

So the only thing left to do is take all the Miner contracts you can get, and kill lots of Guild reds. Look at all the reds first in any mission, and choose Guild ones over Rebel ones, if any.

The amount of rep after each contract seems to be between 1-3%, as above. Except for the Miners - but thankfully, you don't need to care much about them. For Miners, I sometimes did 3 contracts in a row without the reputation changing until after the 3rd contract - by 1%...

You should probably start by focusing on reducing Rebel/Guild, as opposed to increasing Navy/Energy. This is because Navy/Energy are much closer to 100%, than Rebels/Guild are to 0%. If this is not the case for you, then do it the other way around

Improving your reputation in SP Part II - The Five Factions

The five factions are independent but are grouped into friendly "clumps", these being energy companies & militaries who are enemies of rebels (aka pirates) and guilds (aka clans). Miners are neutral to everyone although you will upset energy if you attack miners. So this will mean completing contracts for energy companies and militaries can lower your reputation with rebels (aka pirates) and guilds (aka clans) while completing contracts for rebels and guilds can lower your reputation with energy companies and militaries.

- You can change your individual reputation by selecting and completing contracts for particular groups and/or attacking ships that are hostile to them.
- Contracts are faction specific, meaning objectives will be offered based on your reputation and will involve objectives related to the interests of the faction offering it.
- Long term loyalty to a faction can provide overall reputation benefits, while short term contract completing can result in losing progress you've made in building your reputation.
- **If you leave before you achieve an overall reputation shift, then you've pretty much abandoned the reputation you were working toward.** It tends to return to more average values because the faction's interest in you will quickly diminish if you stop working for them and they'll be on to hiring the next, possibly more loyal, long-term mercenary to work for them.
- If you want to use contracts as a way to shift your reputation, be consistent, work for them long enough to make it worth their time and investment to know they can count on you, otherwise, you'll just appear like a system hopper who only works a few jobs, then moves on, which won't help your reputation much.
- Loyalty and consistency is rewarded with the game's reputation system.

Civilian Contracts (Some WZ contracts are slightly different)

Source Marvin:

- 1 = Rebel contract to spy on a capital ship (Navy)
- 2 = Rebel contract to destroy capital ship (Navy) and escort
- 3 = Navy contract to patrol and destroy Rebels; multi-waypoint
- 4 = Guild contract to deliver goods to a capital ship (Guild)
- 5 = Navy contract to patrol and destroy Rebels
- 6 = Navy contract to destroy Guild ace and escort
- 7 = Guild contract to destroy a capital ship (Navy) and escort
- 8 = Navy contract to escort capital ship (Navy)
- 9 = Guild contract to deliver goods to a capital ship (Guild)
- 10 = Miner contract to destroy Guild ships
- 11 = Rebel contract to destroy a disabled capital ship (Navy) and escort
- 12 = Guild contract to destroy a capital ship (Navy); need not destroy escort
- 13 = Energy contract to clean a solar array
- 14 = Navy contract to recover an item (cargo, satellite or escape pod)*
- 15 = Energy contract to deliver goods to a capital ship (cargo or satellite)*
- 16 = Navy contract to locate a lost item
- 17 = Miner contract to clear an asteroid field
- 18 = A race against time
- 19 = A race against another pilot (Navy)
- 20 = Energy contract to mine 25 units of a specified item

Is reputation separate between MP and SP?

This is probably the most contentious part of reputation. Several very experienced pilots have offered different opinions! It appears that the rules have changed since Legends where what happened in SP was not mirrored in MP. In Mercenary, Faction reputation carries through between SP and MP

The situation in Mercenary can be summarised as:

- You can change your faction reputation in MP but not the system reputation - Everybody's system reputations are fixed in MP
- Faction reputation changes made in MP affect your faction reputation in SP and vice versa
- Since your system reputation in SP depends on your faction reputation, changes to your (faction) reputation in MP can change your system reputation in SP - but not vice versa because system reputation in MP is fixed
- Pilot profiles carry the faction reputations with them.

Data Source Miaz: Miaz provided the following data and interpretation

"I did a little test using Fauston;

In SP overall reputation was Good with faction scores:

Energy 82

Navy 82

Rebels 21

Guild 27

Miners 90

then I loaded for MP

All faction reputations were the same but overall reputation = Moderate.

I did a few contracts, saved and then went back to SP

Overall reputation was still Good in SP. Factions had changed a bit

Energy 83

Navy 84

Rebels 21

Guild 26

Miners 90

So I went back to MP and up to Talison Warzone and did some contracts, then back to Fauston and did one or two contracts there and saved again. Then I loaded up for SP.

Overall rep was still Good. However, the Miners, Rebel and Guild faction scores had changed a lot more this time.

Energy 83

Navy 83

Rebels 30

Guild 30

Miners 85

Summary of effects of contracts

In the EL Guide there is a table of the effect of each type of contract on your reputation for each faction. This is **Table 1**.

Sometimes it is easier to look at what you need to do to increase your reputation or what will lower your reputation with a particular faction or group of factions. This is shown in **Table 2**

Table 1: Summary of effects of contracts on reputation described by contract

Action V Fraction>	Energy	Navy	Rebels	Guild	Miners
Bribe Energy	+	=	-	-	=
Bribe Navy	=	+	-	-	=
Bribe Rebels	-	-	+	=	=
Bribe Guild	-	-	=	+	=
Bribe Miners	+	=	=	=	+
destroy Energy Allied Ship	-	=	+	+	=
destroy Navy Allied Ship	=	-	+	+	=
destroy Rebel Allied Ship	+	+	-	=	=
destroy Guild Allied Ship	+	+	=	-	=
destroy Miner Allied Ship	-	=	=	=	-
Spy, Solar Cleaning, Item Transport (for Energy)	+	=	-	-	=
Patrol, destroy capital ships, locate items and recover	=	+	-	-	=
Item Transport (for Rebel)	-	-	+	=	=
Attack capital ships (for Guild)	-	-	=	+	=
destroy Intercept Ships, Clearing Asteroids	+	=	=	=	+

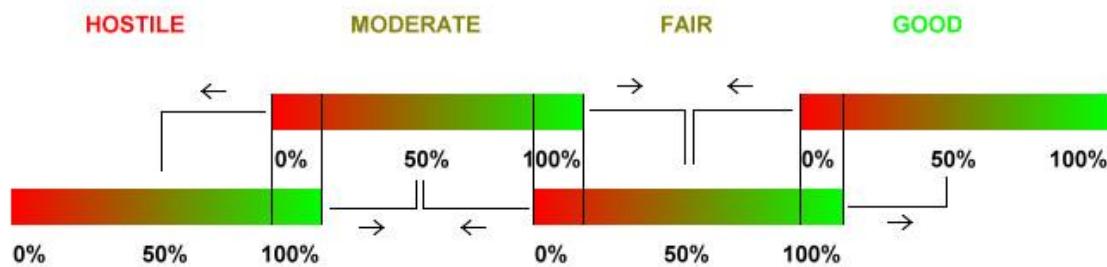
- + Your reputation increases
- = Your reputation doesn't change
- Your reputation decreases

Table 2: Summary of effects of contracts on reputation described by reputation change

Faction > Energy	Navy	Rebels	Guild	Miners	
Your reputation increases if you ...	<ul style="list-style-type: none"> • Bribe them • destroy Rebel or Guild ships • spy, clean solar panels, transport Items (for Energy) • Clear asteroids 	<ul style="list-style-type: none"> • Bribe them • destroy Rebel or Guild ships 	<ul style="list-style-type: none"> • Bribe them • destroy Energy or Navy ships • Transport items for Rebels 	<ul style="list-style-type: none"> • Bribe them • destroy Energy or Navy ships • Attack capital ships for Guild 	<ul style="list-style-type: none"> • Bribe them • Clear asteroids
Your reputation doesn't change if you ...	<ul style="list-style-type: none"> • Bribe Navy • Destroy Navy ships • Patrol, destroy capital ships, locate items and recover escape pods (for Navy) 	<ul style="list-style-type: none"> • Bribe Energy or Miners • Destroy Energy or Miners ships • Spy, clean solar panels, transport Items (for Energy) • Clear asteroids 	<ul style="list-style-type: none"> • Bribe Guild or Miners • Destroy Guild or Miners ships • Attack capital ships for Guild • clear asteroids 	<ul style="list-style-type: none"> • Bribe Rebels or Miners • Destroy Rebel or Miners ships • Transport items for Rebels • Clear asteroids 	<ul style="list-style-type: none"> • Bribe Energy, Navy, Rebels or Guild • Destroy Energy, Navy, Rebels or Guild ships • Transport items for Rebels • Attack capital ships for Guild • Patrol, destroy capital ships, locate items and recover escape pods (for Navy) • Spy, clean solar panels, transport Items (for Energy)
Your reputation decreases if you ...	<ul style="list-style-type: none"> • Bribe Rebels or Guild • Destroy Energy or Miners ships • Transport items for Rebels • Attack capital ships for Guild 	<ul style="list-style-type: none"> • Bribe Rebels or Guild • Destroy Navy ships • Transport items for Rebels • Attack capital ships for Guild 	<ul style="list-style-type: none"> • Bribe Energy or Navy • Destroy Rebel ships • Spy, clean solar panels, transport Items (for Energy) • Patrol, destroy capital ships, locate items and recover escape pods (for Navy) 	<ul style="list-style-type: none"> • Bribe Energy or Navy • Destroy Guild ships • Patrol, destroy capital ships, locate items and recover escape pods (for Navy) 	<ul style="list-style-type: none"> • Destroy Miners ships

When will my reputation go up or down to the next level/band?

There is a chart in the EL Guide. Some pilots find it difficult to interpret.



Translated into text:

- complete contracts until your system reputation within the band (Hostile, Moderate etc) you are in reaches 90-100% - you will then be promoted to 50% on the next band up
- Be aware that your system reputation with other factions will be falling because you are working for the opposition!
- When your system reputation within a band falls to 10% you will be demoted to 50% on the next band down
- Remember though - If you leave before you achieve an overall reputation shift, then you've pretty much abandoned the reputation you were working toward.

However your system reputation is determined by your faction reputations.

Source Flying Brick: According to Vice (older post that I can't find right now), one needs to get Energy and Navy above 85-90%, and Guild and Rebels below 10-15%. At some (random) point after that, your reputation will shift. Don't need to worry about the Miners (not much, anyway).

When my system reputation finally shifted, my stats were:

Energy and Navy 100% (for a long time)

Guild and Rebels about 9% and 5%, respectively.

Miners: 39-40%.

How can I monitor my reputation?

- Your reputation with each faction in a system will be displayed in the news console along with the other stats. A series of bar graphs is presented, including colour coding, to help make the various levels easier to read.
- Individual ship faction affiliations are displayed on the target detail MFD next to the ID indicator.
- The game will report to you when there is a change in your overall reputation in a system, which is a good time to save your progress as it can take a lot of effort to make major changes to your overall reputation.

Why do Navy ships attack me in a friendly system?

There are two Navies - Alliance and Federation. Since the Vonari wars they are no longer at war with each other, but old grudges die hard!

Basics - Crew

You can only have one of each type of crew member unless you're transporting them as passengers and not hiring them as part of your crew.

A hint on training crew members up to 100 per cent. Do military missions in the war zones, only use the carrier. By only using the carrier the crew has nowhere to go, they are stuck with you, and you don't have to overpay them a fortune to keep their loyalty. Once you have 100 pc loyalty you can go anywhere, they won't leave you, unless their pay goes into the negative pay bracket.

When they first arrive on your ship show them the airlock. Anytime they aren't working well, remind them about the airlock!

What do crew members do?

Contributions by FADM Busch, X-firestorm, thetiebiers, Rubber Chicken, Marvin, capt_cronic

Crew members can significantly improve the performance of your ship's system and provide you with useful information. Each crew member must be paid and their loyalty is directly linked to how well you pay them. They will build skill the longer they work for you and they will expect to be paid more as their ability improves and your wealth increases. The more skilled they are, the more benefit they will offer your ship. Here is an overview of each crew member trade and the benefit(s) they offer:

Hire crew members to help you do various functions better:

- A navigator helps to prevent you from jumping head on into objects especially when auto-piloting for very long trips. They also increase sensor performance
- A science officer will help you locate items and tell you about systems you enter. They will give you messages in the info/chat screen when you enter a new system or get close to something interesting.
- An engineer will help fix your ship by increasing the speed of the repair unit and shield recharge rate.
- A weapons operator improves how fast your guns recharge and give them a little extra oomph.

The higher their rating the better they are at doing their jobs. If you hire one at low loyalty they may jump ship when you dock. Save before you dock and reload that save if they do jump or overpay them by up to 500 credits, just to keep them from leaving until their loyalty is high.

Go for Loyalty over Skill. Both are earned "traits", which increase the more you use them. Your crew, that is. Pay them well, then work them hard. Successful contract/mission completions boosts both skill and loyalty points. Work towards 100/100 mark. Loyalty can drop below 100% if you fail a contract.

- Take the mining contracts to work your engineer and science ops.
- Clear asteroid fields to work your weapons ops and engineer.
- Do the other types of contracts as well; the snoopies - go-find-ums and the bring-ums-back. These will exercise your navigator and science ops. It all counts and it all depends on what you want to do.

Hire my crew with high experience and pay 3000-4000 to keep them from leaving until their loyalty reaches 100% then drop their pay to around 1000. An easy way to get their loyalty to 100% is to load up on gas and take a long, long trip without ever docking.

Crew details from the Legends Guide

The 'fair' wage value they expect to be paid is based on several criteria including their skill, loyalty, and your wealth. Each crew member's trade also impacts how much they expect to be paid. Here is the calculation used to establish the base fair wage for each trade:

Engineer	$((\text{skill} + \text{loyalty}) * 10) + (\text{cash} / 1000000) * 1.75$
Navigator	$((\text{skill} + \text{loyalty}) * 10) + (\text{cash} / 1000000) * 1.25$
Weapons Ops	$((\text{skill} + \text{loyalty}) * 10) + (\text{cash} / 1000000) * 1.5$
Science Ops	$((\text{skill} + \text{loyalty}) * 10) + (\text{cash} / 1000000) * 1.0$

Pay your crew well and their loyalty will increase, pay them poorly and their loyalty will decrease. Once a crew member reaches 100% loyalty, you'll just need to maintain their pay at the fair wage and perform well with contracts to keep their loyalty. Crew members with low loyalty have a higher chance of leaving your ship next time you dock. Below is a chart showing how much a crew member's loyalty can increase or decrease based on how much you pay them relative to the fair wage they expect and also whether you complete or fail contracts.

<~90% of fair wage	- 5-9% per pay cycle
~90%-199% of fair wage	+ 1-2% per pay cycle
>~200% of fair wage	+ 10-20% per pay cycle
Contract Failure	- 1-3%
Contract Success	+ 1-3%

Basics - Inventory (handling cargo and equipment)

Moving equipment around

Vice: Be docked at a station, city, or carrier. In the inventory console (F3),

- left-click on one of your weapons/equipment sells it.
- right-click on one of your weapons/equipment moves it between the weapon/equipment point and your cargo bay (assuming you have free slots in your cargo bay).

For the "for sale" items that are being offered by the station, left click buys the whole thing, right click buys just one (if they are stackable, like commodities).

For example, you have a build constructor in your cargo. If you left click it, you sell it. If you right-click it, you move it to one of your equipment slots (if you have one available). If you right-click on it again in its equipment slot, it will be moved back to cargo.

Combining same type cargo.

Vice: Be docked at a station, city, or carrier

Let's say you have 4 cargo bays:

- 1) Fusion Cells x15
- 2) Fusion Cells x10
- 3) Platinum x20
- 4) Platinum x10

How do you add the 10 Fusion Cells from slot 2, to slot 1 to free up slot 2 and 5 of the platinum from slot 4 to slot 3 to fill slot 3 completely

From Vice: Be docked at a station, city, or carrier, then hold the Alt key, then Right Mouse Click on the cargo you want to consolidate so if you Alt + right-click slot two, it will combine with slot one. Similarly, Alt + right-click slot four, it will combine with slot three. The cargo bays don't have to be sequential to work, so the Fusion Cells could have been in slot 3 and Alt-Right click slot 3 would work.

You can consolidate cargo only for minerals and commodities. With equipment and missiles you can only load one item per cargo bay.

Things to consider when swapping ship frames

The equipment swaps across when you swap into a new ship, providing that the new ship has enough slots to take the equipment, this is true for both military and civvy frames.

To store the ship, or items from your cargo bay, go into the hangar, and hit the "store" button beside the ship/item name.

Note: You don't have to store equipment when swapping ships, if the ship has enough slots, then, the equipment automatically swaps into the new ship.

Basics - Stations

Snippets

Building stations costs - the richer you are the more it costs and the more a license costs as well. Also the further you go away from central civilisation, the more they cost. See the **Authorised Mercenary Technical Guide** for an explanation

For fast & accurate docking: take a heading of 0 and a pitch of 0, then do the jump; at the destination you'll arrive perfectly positioned on the docking path, on the correct plane and on the approach path.

It also helps if you enter the actual coordinates of the destination, rather than clicking with the mouse to select the destination.

What do I get for building a station?

You can build trade stations in SP and MP but their only advantages are that they give you free docking and a safe haven from enemy ships and boost the economy and technology in the system, so there are more items for sale on the trade stations and you get a "free" license. You can buy and sell cheaper (25% cheaper for both) at a station where you have a license or one you've built yourself.

Even if you build a trade station in a Hostile system, your station will act as sanctuary for you. But only for you. When you're tractored into the station, hostile ships (AI) will leave you alone unless they're already within attack range.

Are player built and game coded Trade Stations the same?

Yes, a player built trade station functions the same as a computer trade station. You automatically have a license for your own built station. You cannot build a trade station in a sector that already has one they need to be at least two sectors apart (station - clear sector - station / a chess knight move also works) and the built station has to be within the limits of in sector coordinates of +/-50k for pX,pY,pZ.

Station License - the facts

A station license drops prices for items 25% for both buying and selling (except for fuel), so it's best to not get a license at places you plan to sell your goods, and it removes any relevant docking fees. A License it will protect you from being fired upon while docked.

Best thing about a license in a Moderate or Hostile system is you don't pay a large docking fee each time you want to accept a new contract or have to wait around paying whilst hostiles are being mean to you!

What does a station licence do?

A station licence simply reduces buying and selling prices to you by 25%. For example build a Trade Stations (you are given a licence for building it) near to another station (the stock and prices will be similar) and you can buy from your station at a 25% discount and sell at the other and make 25% on each sale

You don't want to buy a station licence at a station you are going to sell to, it reduces your income by 25 per cent. You only buy a station licence at a station where you wish to purchase, as, again, it reduces your buying costs by 25 per cent.

The cost of a licence depends on how rich you are and where the Station is. A pilot early in their career might be charged 200 000 for a licence - a rich pilot might be charged 750 000 000. A well chosen licence on a good trade route will pay for itself very quickly. I bought a 30 000 000 credit licence in the middle of my trading career and it paid for itself in about 20 minutes!

Station Fees - what might I have to pay?

Bills: If you get billed with a fee from another station than the one you are currently docked with, it seems that you have stored items/ship in the Hangar of the one that is billing you. To cancel that you need to pickup/sell the stuff you have there.

After removing the items stored you may be charged one more time because they were there during the pay cycle.

Docking fees: When you acquire Legend status (w/ large amounts of \$ and reputation points), you will no longer be charged docking fees. Just be careful where you dock 'til then.

Or you can change all hostile systems to friendly and then you do not pay docking fees either. However, by the time you change all hostile systems to friendly you would have reached Legend Status anyways unless you keep making bad decisions

Why can't I build a trade station?

If you try to build a trade station and receive a message saying you cannot, make sure you are at least one full sector (in all three dimensions) away from any other trade station and less than 50K from the sector centre. If you still cannot build a station, read the message closely - if it says you've reached your limit for the number of stations in the system, then move ten or twenty sectors away and try again. The maximum number of stations allowable in any specific area is fifty.

How do I Build a Trade Station?

just click on the Build icon in the HUD, then if you leave the mouse over "Trade Station" (don't click it yet) a field will appear where you can enter the name. Don't need to press return when you've entered the name, just click on "Trade Station". I think you have to be at least 2 or 3 sectors away from another Trade Station in order to build otherwise nothing happens.

Building a station when being attacked!

If you move at all during the countdown the station build is cancelled. this makes defending yourself a bit of a challenge:

- 1: If there are only a couple of hostiles just rotate on the spot. target the first with your missiles and take it down at 1500 - 1800; if you don't use Excalibur missiles, do the same until your missiles run out. If you do, target the second hostile and hit it with cannon fire and hope you destroy it or at least hold it off until the station appears
- 2: deploy a shield array and sit in it
- 3 When they get to about 2500 - 3000 activate your stealth mode and they will move away again
- 4: desperate measures: swivel on the spot and shoot them down!!
- 5: Give up on the station you are building and fly around for a few jumps and then come back - you might have time to finish before hostiles reappear.
- 6: in MP team up and have someone fly CAP whilst the other builds

Blowing up a station whilst being attacked!

You might want to do this to tidy up after you if you built a station in the middle of nowhere to refuel and find yourself bounced by AI hostiles. You might also be in a Clan War! The advantage is that you can fly around a very small amount - go too far away or too close and the detonator stops

- 1: AI - see building a station points 1-6
- 2: Real pilots

1 & 4 above and you are toast quicker than real toast is made

2: works until the attacker bumps you out of the array

3 (or better 2&3) gives you a chance if you have a relatively short time left to wait

6 is the honourable way

- 7: A dastardly Reaver way - fly close in to the centre of the station and then deploy the shield array - no-one can get to you! Bless them!

Building your own stations for improving economy I (spoiler)

Find a system (ideally an uncharted one) which is fairly low tech and preferably with a couple of planets several sectors apart. Near one of the planets build lots of stations - a trade station (cancel the license for this station - it is the station you will sell at), constructor stations, energy station, ore and research stations. Build a Trade station near the other planet - this is the station you will buy at.

Source Vice: Where did you build? If you build additional research stations and processors in a system that is already maxed out for them, then you won't likely see much of a difference. Also be sure to review the default economy classes to build stations where you want particular market improvements. Where you build is often just as important as what you build.

Building your own stations for improving economy II: not working? (spoiler)

I built a full set of stations in Cerulean War Zone and stayed there for 9 hours and did 30 contract and did not see anything change on anything. Still only able to get the same weapon/missile and equipment.

Source Vice: I reviewed the stations and effects on the economy and it is working as intended. I think what you are running into is the inherent market caps/limits of the system, which can restrict and/or reduce the frequency of certain items depending on economy class and the starting inventory level. With what you have there, you will probably run into some higher end items from time to time, but overall the limit will be where most of the items fall into (both MP and SP).

Also, you had built stations in a war zone and while they do effect the inventory there, you'll likely have better results in other civilian systems. If you wouldn't mind the spoilers, I can provide some locations where you can tune and tweak the build points for particular inventory shifts for what you may be most interested in. Cerulean is ok for a 'general' build project, but other locations can offer quite a bit more.

Constructor recipes - which raw materials make which goodies?

Source Blackthorne: <http://www.starwraith.com/forum/viewthread.php?tid=4037#pid49531>

Okay. After spending the entire evening shuttling stuff to and from the constructor stations, here's the gist of it:

Constructors are a pretty straightforward affair - you fly in, the station checks your cargo bays and tells you what it can manufacture from the contents. There don't seem to be any "mixed" recipes, so basically it just converts one commodity into another.

The result of some conversions varies with the amount of material provided. 25 Units will net you the top-of-the-line model of a certain device, with lower amounts yielding the lower-class models. If there are 5 different classes for example, the distribution is as following:

05-09 Units - Class 1
10-14 Units - Class 2
15-19 Units - Class 3
20-24 Units - Class 4
25-25 Units - Class 5

Several items aren't triggered until you show up with exactly 25 units of a certain commodity.

Food -> can't be converted.
Medicals -> can't be converted.
Hydrogen -> Shield Booster
Electrical -> Cargo Scanner
Solar -> can't be converted.
Metal Ores -> Armour Plating (1 Armour per 2 Metal)
Diamonds -> can't be converted.
Antimatter -> Fuel Converter (requires 25 units)
Fusion Cells -> Fulcrum Drive
Mechanical -> Repair System
Textiles -> can't be converted.
Platinum -> Long Range Probe (requires 25 units)
Biological Materials -> can't be converted.
Oxygen -> can't be converted.
Gold -> can't be converted.
Silver -> can't be converted.
Water -> can't be converted.
Armour -> can't be converted.

you can add weapon options via electronics and metal ore.

I have both metal and electronics on board (25 each), but the only things offered are Cargo Scanners and Armour. Do I need to go to a special constructor station to be offered weapons?

Vice: Yes, well, just one in a technology economy.

Would that include "homemade" constructor stations in orbit around a type T-Planet, or does that only work with "official" ones?: Vice: Should work with custom built constructors also.

Basics - Trading

Basics of Inventory Management and Trading

Source: SeeJay's EvoxSchool Basics Schools - <http://www.junholt.se/evoschool/index.htm>

Inventory Console (default F3 key and third console button): Displays and manages on-board inventory items. When you are docked at a station, you will be able to buy and sell items by simply clicking on them. Auxiliary equipment is displayed in yellow, commodities are displayed in purple, and weapons are displayed in green.

To sell and unload an item, simply click on it from one of the sections of the console showing loaded equipment/commodities. The selling value (displayed when you hold the mouse pointer over an item) of what you sold will then be added to your account. Selling items on a planet or station will give you full market value for the system you are in while selling to other ships usually results in lower values.

To buy an item, click on the one you want from the Items for Sale section. You can use the slider bar on the left side of the list to scroll through all of the available items. With the mouse pointer held over the list, you can also use the mouse wheel to scroll through the list. If your ship can store or load the equipment/commodity item you want, it will be loaded and the cost deducted from your account. Each item will be automatically routed to the default installation option.

Commodities will be loaded into your cargo bay while equipment and weapons will be installed onto your ship. Right clicking on an item provides alternate functions for buying, selling, and installation. To load upgrades, weapons, and equipment into your cargo bay instead of installing them on your ship, right mouse click on the item(s) you want instead of left clicking on them. This way, you can use your cargo bay as a storage point for items other than commodities.

You can later install desired items in your cargo bay onto your ship by right clicking on them from your cargo bay list. Likewise, you can transfer installed items on your ship to your cargo bay by right clicking on them instead of left clicking on them. If you only want to buy or sell one unit of a commodity at a time, simply right click on the listed item.

To consolidate commodity cargo, dock at a station or city and use the ALT key with either the left or right mouse button. Left click to combine matching commodities up to the limit of 25 per cargo bay. Right click to transfer one unit at a time.

For the list of equipment installed on your ship, you can also use the slider bar on the right side of the list to scroll through all installed items, if your ship has more than 5 equipment slots. You can also hold the mouse pointer over the list and use the mouse wheel to scroll, just like the items for sale list.

The inventory console also lets you refuel, search for contracts, or buy a new ship.

If you buy fuel, your countermeasures will also be refilled free of charge. Even buying a small amount of fuel refills your CM's. However if you do not have enough money to refuel as much as you have chosen in the options you won't get the fuel you expect and the CMs will not be refilled as expected, either.

A description of items you highlight with the mouse pointer is provided at the top middle of the console display. Most of the descriptions are self-explanatory, but when you highlight a weapon, the Y: stands for Yield, S: stands for Speed, C: stands for Cycle rate, and R: stands for Range.

This console also provides the shipyard and crew management consoles.

The shipyard lets you design a ship by selecting a frame and then installing the various components for fuel capacity, cargo capacity, engine, wing design, and shield capacity. You can further enhance the design parameters of your ship with additional upgrades and crew members.

Crew members can be hired for various roles and you need to pay them based on their loyalty, trade, and skill. The fair wage for each crew member is displayed in the crew management console. If you pay them less than the fair wage indicated, their loyalty to you will likely drop, which increases the chance they will leave your ship. Pay them well and their loyalty will increase. The longer you keep your crew, the more loyal and skilled they will become, which also increases the amount of money they expect to be paid. Checking and adjusting your crew's pay levels each time you dock is a good habit to get into for improving loyalty. Your crew's loyalty will also increase if you successfully complete contract objectives and their loyalty will decrease if you fail contract objectives.

The news console is also available in the main inventory console display. The news console give you local news headlines which provide details on market conditions and recent events specific to the system you are in. Your statistics are also displayed at the lower right while market prices for commodities and fuel are displayed in the two lower columns on the left. The 'System Information' option gives you a brief background on the system you are in and details on local factions/groups.

The inventory console will automatically open when you enter a hangar at a station or carrier. When the inventory console opens, the hangar's tractor beam will engage and hold you in place until you close the console. You can disable automatic inventory console control by pressing the default Alt-F3 combination. You will then need to manually open the console when you dock to engage the hangar's tractor beam and access docked options available in the inventory console.

Ship-to-Ship Trade Console (default F4 key and fourth console button): Lets you arrange commodity and money trades with other ships. Commodities and other items in your cargo bay aren't part of your ship, so they can be exchanged with other ships in flight. You can also exchange credits, so you can arrange to sell or buy items if the pilot of the other ship agrees to the terms. You can try to bribe other hostile ships with this console by just sending cash. However, the other pilot may not agree to open the trade console if they want to attack you for something in your cargo bay. So the best time to bribe another pilot is when your cargo bay is empty. When you've selected the items or money you want to trade and agree to the offer from the other pilot, click on SUBMIT to accept. In multiplayer, both pilots must click on SUBMIT for the deal to be finalized. Pilots can also exchange small 30 unit fuel pods in multiplayer as well as challenge each other to races using the trade console. When a race challenge is submitted and accepted, the race course is placed in front of the player who sent the challenge at a heading of 0.

Increasing profit - general (non-specific) advice (a bit of a spoiler!)

If you want to trade you have to explore the systems to find out where to buy cheap and where to sell high. The green area on the economy map (in the NavMap) is the high Tech area where prices are the highest for buying and selling. The Agricultural area is the low economy area where prices are lowest. You can however increase the Technology level in a System by building certain Stations and increasing the economy in a particular sector.

Prices climb the further you go from Sapphire system, and there are places not shown on the quadrant map that offer very high prices. Prices are the same for buying or selling at a location. Buying something in Olympus will cost you more than buying the same thing in Sapphire. Therefore buy in Sapphire and sell in Olympus

Where can I get market information?

Source Vice: That'd be the news console. As soon as you arrive in a new area (planet or solar system), you can open the news console and view the market ticker, showing the commodity values of all items in the area, even if they aren't currently available for sale. Combine this with the economic type data provided and you can quickly get an idea of what's valuable and what's not. For most charted systems, you can also get additional details that can sometimes be useful in the 'System Information' section.

Why can't I sell my stuff in some places?

Trade stations and cities will generally buy anything, unless you need to have a license at a particular station. But Constructors and Carriers can be restricted.

When might I have to pay docking fees?

If you are in a hostile system you will have to pay a docking fee before you can sell anything or enter the station to be protected from surrounding hostiles

How can I improve the prices in a system?

The local economy can be raised by building stations, so be careful of their placement.

How can I maximise trading in weapons?

If you want to do missile trades you can load your cargo spaces with 5 missiles and your 8 hardpoints with 8 missiles so the maximum amount of missiles you would be able to trade is 13 at a time - but with a possible profit of 2-3 million per missile that's 25 - 40 million per run

You can also use your equipment slots for trading - you can buy your regular equipment back later or put it in a hangar

Containers from destroyed ships

You can become a pirate and rob people. Sometimes when you are defending yourself some containers survive the hostile being destroyed. These will be visible/easily identifiable if you're within a reasonable distance because they have white square corners surrounding them, like so:



You can use your mining/tractor beam to pick them up

How can I find containers?

Containers are small! They show up on the radar as pinky purple (No-ID) blips on your radar once you get very near them

SeeJay has created an Excel sheet that lets you pinpoint the location of containers in two jumps:
Download the file from <http://evochron.junholt.se/menus/downloads.htm>

Selling fuel & SAR; Rescuing pilots

Another option in the trade console is transferring fuel in 30 unit intervals. This lets you rescue stranded players, sell fuel for profit, or give it away to help new players. Fuel can be a very valuable commodity in addition to trading other items.

You can **sell** fuel at a station: When you refuel at a station you can type in your amount. Instead of buying 1000 units you buy -1000 (note the negative sign in front of the number!) This make you sell 1000 units of fuel.

Trading - Best routes and places

Best routes and places for making money

Pearl

Pearl has some excellent opportunities but it is a very hostile environment - to be avoided until you have some experience and quite of a lot of "seed" money. Details are given elsewhere

Lost Rucker

Instead of selling in Rucker, why not go just that wee bit further to Lost Rucker - you might find that you get even better selling prices there!! There are no docking fees, and it's a safe zone to get repairs done/let repair unit do its job. There is a (hidden) way of getting there from Rucker. Look in the "Freebies" section for hints and a walkthrough

Buy in Pearl (Port Oasis - buy a license) Then go to Lost Rucker - you get nearly the same prices as at the hidden planet in Pearl, and its faster travel time (5 jumps vs 10 to Pearl's hidden planet) and a heck of a lot safer.

Sol

Source Marvin, Trading in Sol System. I run from Jupiter to Saturn to Mars and then return to Earth. I bought station licenses for the three outer planets and.....WOW!!:P That is the fastest, easiest, and SAFEST way to make a fortune and build your civilian rank. There are no hostiles in Sol.

Trading and making money

You can also hire a science officer who will give some help by indicating points of interest (even uncharted ones) and improves your mining

What's the best income I can hope to achieve trading?

If you really want to make some cash look to trading in equipment, and missiles. With missiles you can fill up your cargo, and missile slots, giving you 13 slots to carry your cargo of missiles and equipment. There's a location where you can buy FTs at around a million with a licence. There's plenty of places where you can sell them at 4 million+, so that's a 3 million+ profit per FT, with 13 slots to put them in. That's an average profit of a couple of million credits per minute!)

Note the prices you pay and sell at. You can soon work out the optimum cargo. Remember your secondary weapons slot can carry 8 missiles, your cargo bays another 5 items (including missiles) and you can always lose some bit of installed equipment for a while and free up a few hardpoints.

16 slots 1 - 3 million profit per run gives a potential for 20 - 40 million per run with the occasional peak at 50 million if there are enough of the top earners available. It's sometimes worth flitting between stations you can buy at to allow them to restock. Balance profit per run against average profit per minute!

Other good trade routes (15 - 35 million per run) (Spoiler)

Purchase in the Pearl system, from a couple of different stations at random, take the gate to Novachron station in Lost Rucker. It is a really short, profitable trade run. 15-35 mil so far on a regular run. Not bad for 3-6 minutes of effort. (average 5.5 million per minute)

Opinion: Ideas for money making early on

Source: Flying Brick

- buy a station license in a system with multiple stations, preferably a system with a developed economy (Rucker, your reputation is **Good** there in the beginning). Developed economy means high prices overall, but a station license gives you a 25% discount, and 25% of a 1M gizmo is much better than 25% of the same gizmo that costs 200k in a system with undeveloped economy.
- 25% of high prices simply means your profit margins are higher in absolute terms (though in relative ones they stay the same, of course; it's always 25%, but you want that 25% to be of really expensive items, because it's more money in absolute terms).

What are good systems for this? So far, I've explored Sapphire, Olympus Prime, Virgo and Rucker, and Rucker has the most advanced items and highest prices I've seen.

- even better: build your own trading station in a high-tech system! - when you build your own trading station you automatically get a license for it). It's better for two reasons: because it's likely **cheaper** to build your own than to buy a license from an existing trade station; licenses in Rucker cost 1.8M-2M+. Also because it leaves you with more potential places to sell at a high price (if you buy a license at an already existing trade station, you will not want to sell to that station anymore, obviously. If you build your own station, you can still sell at all the other existing stations, which is good because prices vary from station to station and you might make better profit margins for expensive items)
- I've found build constructors in Rucker for about 1.1-1.6M.
- very very early: get stuff from the hidden crates in Sapphire, and sell them at a station for ~110k each, it's amazing money at the start of the game. (You find about the location of the crates from the IMG quests, too.)
- You can carry 5 cargo bays and hence 5 items from the crates, so 500k+ per trip. That's why so many players suggest you do the Quest. IMG continually resupplies those crates. They monitor the quantity but not who uses them. It's the IMG honour system.)
- also very early: mine in Sapphire; Port Rivoch pays the highest prices. Keep the beam moving, it mines faster.
- also remember that cities on planets tend to pay better than stations
- my own find: Olympus Prime has 2 constructors; buy materials, go to constructor, build stuff, sell stuff anywhere in the system. Best prices are for fuel converters (500-600k) from anti-matter cells; repair system C3 (130-150k) from machinery components.
- buy Rucker, sell Lost Rucker ?
- some mining in Rucker, diamonds/platinum 2-3k
- Atlas mining: platinum 7-9k, diamonds 2-6k plus gold & silver around 3-4 k.
- buy pearl Port Oasis (anything really expensive), sell Pearl hidden; very hostile area, so maybe sell Lost Rucker. Best prices: FT (Fulcrum Torpedoes) buy for 1.8M, sell for 5M.
- I like to trade; auto CM launchers, anti-missile systems, fulcrum torpedoes, Excalibur missile systems, & constructors purchased in the Pearl system, from a couple of different stations at random, to Novachron station in Lost Rucker. It is a really short, profitable trade run. 15-35 mil so far on a regular run. Not bad for 3-6 minutes of effort.
- (This probably isn't very safe, since Pearl is pretty darn hostile, but guy says: I don't know, I started out by going straight to Pearl. I just avoided confrontation & jumped to a nebula or the rings of a planet. Have preset safe jump coordinates so you can flee and start making those trade hauls.)

- more Pearl: You should try hostile gun running - run guns and equipment into the most hostile stations you can find without ever firing a shot (and without dying). I built up a bunch of trade stations in Pices along with a constructor, then I filled my cargo holds and jumped into Pearl and made a mad dash for the station with the goal of not dying. You sell off your stash and then run back to the gate. Once I got to the point where I could make the run there and back without taking any hits (and without using my afterburner) then I moved on to more complex challenges. In the end (after about an hour), I got much better at handling my ship, made about 30 million and had a lot of fun.
- maybe Cerulean?: I saw that Afterburners and Excalibur packs in the Cerulean system were going for 800k and 2.4M but were 1.3M & 3.9M in the other sector off of Cerulean. I was making 2M a trip. (he probably means either the hidden planet in Cerulean or the Cerulean WZ)
- possible: My way is to install four or five cargo spaces, land on a planet near a city, mine for gold, silver, diamonds and that other expensive stuff - filling one cargo bin with each. Then turn around and sell it all at the city station. Others prefer to mine asteroids and sell at stations - but I prefer the scenery planetside.
- (However, I'll note that you don't make that much money from mining, unless, see above, you do it somewhere with crazy prices for metals, like Atlas
- Early on I will travel from station to station and buy anything that I can get that is cheap to buy, jump to another station and sell the things that are profitable/buy stock that is cheap at the second station. It is a good way to make money while you are checking the prices for the items and moving to the next station. If the station has antimatter units then I can buy them for next to nothing and convert them to fuel converters. Then it's just a matter of finding the station or city that gives the best price.

Opinion: How can I maximise my rate of earning?

contributed by Aures

Just get some cash (ideally at least 2.5 million, anything over 500k will do but will take longer) and go to Port Oasis (in orbit around the planet Oasis) in the Pearl system. Buy whatever high tech items you can afford (auto CM launchers, anti-missile systems, fulcrum torpedoes, Excalibur missile systems, & constructors) and take them to the hidden planet in the Pearl

Port Oasis:

X: 18097		3497 :SX
Y: 2240		0 :SY
Z: 980		-802 :SZ

Hidden Planet - Safe Jump Exit:

X: 67038		3588 :SX
Y: 12979		0 :SY
Z: -47513		-1828 :SZ

Takes just under 2 minutes 30 seconds each way on autopilot. With the profit you make from that trip you will be able to buy more stuff on the next trip. Soon you will be limited by the amount of stuff you can fit (once your frame is maxed out) or buy at once rather than your cash. At that point (or earlier if you like) buy a license at Port Oasis to increase your profit margin. You can now make more than half a billion if you are efficient

If your cash is all tied up in your ship just fly directly to Pearl hidden and sell everything. Fly back to Oasis in the cheapest frame (even the smallest fuel tank, 400 is plenty for a round trip) and use the cash you raised to start the trade run.

The best cash per trip can be obtained by reloading several times in Port Oasis so you can get as many auto CM launchers and AM systems as you can carry (more than 7 million profit per piece of equipment). You can just wait around a while for new stuff to show up and/or land at the actual planet Oasis if reloading isn't your style. I find it quicker to just take whatever high priced equipment is there and fill the rest up with fulcrums. What yields more profit per minute is debatable and depends on the luck of the draw.

I have yet to find somewhere cheaper to buy the best items than Port Oasis or that buys them at a higher price than Pearl Hidden. Someone else has found a better trade route in terms of profit per minute but has asked that the information is not made public on the Forum or this guide. It's a couple of times more profitable. Worth knowing about since it shows it's worth looking around and doing a bit of research, but it also shows that the detailed route given above is well worth milking if you want quick a savings income.

Opinion: The biggest money making route:

To make more than 5 million a minute you don't need to do any of the IMG quest. Just get some cash (ideally at least 2.5 million, anything over 500k will do but will take longer) and go to Port Oasis (in orbit around the planet Oasis) in the Pearl system. Buy whatever high tech items you can afford (fulcrum torpedo, afterburner drive, missiles, anything really) and take them to the hidden planet in the Pearl system (not too hard to find yourself, but if you are lazy I'm sure the coordinates must be on SeeJay's website). Takes just under 2 minutes 30 seconds each way on autopilot. With the profit you make from that trip you will be able to buy more stuff on the next trip. Soon you will be limited by the amount of stuff you can fit (once your frame is maxed out) or buy at once rather than your cash. At that point (or earlier if you like) buy a license at Port Oasis to increase your profit margin. You can now make more money in an hour (more than half a billion if you are efficient) than you could do by mining (or pretty much anything else except do the same kind of trade run between less profitable points) in a week of solid play.

If your cash is all tied up in your ship just fly directly to Pearl hidden and sell everything. Fly back to Oasis in the cheapest frame (even the smallest fuel tank, 400 is plenty for a round trip) and use the cash you raised to start the trade run. Finishing the IMG quest is still not a bad idea, it will give you enough cash to begin doing this trade run properly. If you want you can just do the quest until you get the first container location, selling stuff from that gets you enough cash for serious trading pretty quickly.

The best cash per trip can be obtained by reloading several times in Port Oasis so you can get as many auto CM launchers and AM systems as you can carry (more than 7 million profit per piece of equipment). You can just wait around a while for new stuff to show up and/or land at the actual planet Oasis if reloading isn't your style. I find it quicker to just take whatever high priced equipment is there and fill the rest up with fulcrums. What yields more profit per minute is debatable and depends on the luck of the draw.

I have yet to find somewhere cheaper to buy the best items than Port Oasis or that buys them at a higher price than Pearl Hidden. If anyone else has found a better trade route (even in terms of profit per trip, but better profit per minute is preferred) this thread would be a good place to share it if you are willing. Please give names but don't give coordinates, anyone who wants to can grab them from SeeJay's site.

Discussion: Which is best? - Mining vs Trading

I admit, I have forgotten how user unfriendly trading really is in this game. I am little disappointed that there is still no real stock here and that you depend on whatever trash the local market throws on you. After a long trip to a planet/station, you land and then realize that on what had to be an agricultural market, the only items on sale are textiles, hydrogen and fusion reactors - all items that on the right market would cost even less.

Now, it wouldn't be a problem if there was a way to fast forward in time to get the right items, but as it is I am forced to take off again and search for another opportunity. Really frustrating.

I realize that it makes trading more challenging and thus more rewarding, BUT, while I'm writing this I am comfortably sitting in an asteroid field and mining gold, diamonds and platinum. Then I will sell them on the nearest "T" planet at full price. No wandering in space for a couple of credits.

I'm sure there are some gold-mine trading routes, but I am still a new to this game and I ask myself why I should bother looking for them if I already have a gold mine in my reach right off the bat.

Am I missing something? Am I doing something wrong? I really would like to trade instead, but it's simply not fun....

Source Vice: Trading is kind of geared toward a multi-point, high effort for higher potential reward structure. You're certainly not limited to only having to dock at one point to search for something in a desired economy type for many locations, there are usually orbiting stations and even other cities within the same economic zone type. And although I don't want to give too much away, I will say that even short trips from certain locations to certain 'ground' locations can even provide a healthy profit percentage... in the same system. You can obviously do ok mining, but many of the biggest pay-offs are a result of finding the high end trade routes, many of which involve learning where the various economy types and levels are, then learning what that means for specific items and inventories. From there, it's pretty much just a matter of putting the pieces together to come up with trade runs that make excellent profit.

There are certain systems/conditions that can result in Metal Ore being worth more than Platinum, especially for what it can be used for and how it can be traded.

Source Various: You'll make a darn sight more money trading than you'll ever make mining. Think out of the box a bit. You might find equipment to be a good trading item. The most I've been able to make mining is around 700k a run. On the other hand, I found an item of equipment, buy in one system, sell in another, instant 2m profit. There's supposed to be a location where you can buy FTs for around 700k, which I haven't found yet, you can resell FTs for over 4m in other locations - fill up your cargo bay, plus your weapon slots, that's 13 slots - very nice profit. You can also buy a station licence at the location you buy stuff from, 25 per cent reduction in costs, which equals 25 per cent increase in profit.

Do some exploring first, note the price of items, even missiles. Look at the everyday items you can buy, and then turn into something else at a construction yard. You can re-sell the construction yard stuff at a good profit. Anti-matter is a very good, and cheap buy, if you can find it. You can get anti-matter by blowing up a cap ship and tractor beaming its cargo into your hold. I found a planet selling anti-matter, took it to the construction yard, turned it into something else, can't remember what, and sold it at another planet for a 2m profit. If you look at the Legends instructions (or elsewhere in this guide!), you'll find a full list of what materials transform into something else, at a construction yard - I don't know if the list is out yet for EM.

You can make LEGEND, just by accumulating enough money, around 5- 6bn.

Early on I will travel from station to station and buy anything that I can get that is cheap to buy, jump to another station and sell the things that are profitable/buy stock that is cheap at the second station. It is a good way to make money while you are checking the prices for the items and moving to the next station. If the station has antimatter units then I can buy them for next to nothing and convert them to fuel converters. Then it's just a matter of finding the station or city that gives the best price.

Basics - Contracts; Making Money (+ Rank & Reputation)

Snippets

For any contract as soon as you hear the "contract complete", SAVE, even in the middle of a fight, (Alt-F9) to save your newly earned credit!

Stuff gets more expensive as your civilian rank increases. It costs me more than 500k a cycle to rent out a hanger. Station licenses now cost me a couple of hundred million

You don't have to be very close to complete a visual inspection - the container can be above or below you by a significant amount - you don't have to bump into it! You need to be a bit closer for a retrieval

General

You're better off doing contracts for the Navy, Miners and Energy ... working to get each of them to 100%. By doing that, you automatically turn the Rebels and Guild against you ... which is what you want.

You'll still run into hostile Miners, Energy and Naval ships ... even the big ones. Especially in Hostile systems. But, by the time your reputation has turned a system to Fair, the enemy ships will begin to see things your way. So much so that, by the time the system is Good, everyone (including Rebels and Guild) will behave themselves.

Harder contracts like killing more hostiles increases your reputation faster than cleaning contracts because amount paid, number of hostiles killed, number of waypoints involved in the contract and the number of contracts completed successfully are part of the reputation equation.

For military rank it is just missions completed and hostiles killed no matter how much credit you have, you cannot buy your rank in the military

Does killing Guild/Rebels affect general system reputation, or only raises it with the Navy and Energy factions?

You can improve your reputation by actively hunting and killing rebels and guilds only but this will take longer and is more work to achieve your goals. It is faster and easier to increase your reputation and rank by doing high paying contracts that involve killing guilds and rebels and these are always contracts you get from Navy, Energy and Miners that involve getting rid of hostiles. If you kill a navy hostile while doing a Navy contract it still counts as a hostile kill for the contract but it slows down your reputation for the system where the hostile navy was from.

Once your Rebel and Guild reputation gets near zero and the other factions are high enough, your system reputation will shift. At that point, you can leave the system without worrying about your system reputation dropping back down ('though your local reputation will often drop).

What points do I need for what rank?

Source Vice: For specific point scoring for each rank (thanks to SeeJay for previously posting this):

Rookie	(0-24)
Novice	(25-99)
Competent	(100-499)
Skilled	(500-999)
Advanced	(1000-1999)
Expert	(2000-2999)
Master	(3000-4999)
Superior	(5000-7499)
Veteran	(7500-9998)
Legend	(>9998) about 5 billion credits

You gain one civilian point per (about 500k credits) plus one per contract (or per waypoint in bigger contracts) plus one per 10 kills during a contract - but you must be the pilot who actually fires the killing shot - shared kills aren't allowed!

Trainee	(0-4)	Ferret unlocked
Ensign	(5-24)	Ferret unlocked
Lieutenant Jr. Grade	(25-49)	Ferret + Aries + Shadow unlocked
Lieutenant	(50-99)	Ferret + Aries + Shadow + Wraith unlocked
Lieutenant Commander	(100-149)	Ferret + Aries + Shadow + Wraith + Enoch-C unlocked
Commander	(150-249)	all military ships (Ferret through to Chimera) unlocked
Captain	(250-499)	all military ships (Ferret through to Chimera) unlocked
Commodore	(500-749)	all military ships (Ferret through to Chimera) unlocked
Admiral	(750-998)	all military ships (Ferret through to Chimera) unlocked
Fleet Admiral	(>998)	all military ships (Ferret through to Chimera) unlocked

What other things change when my rank increases?

The size of your hat! - just wait until you get Fleet Admiral or become a Legend!

The higher your rank the more you get paid for contracts; a contract that earns 10000 when you start might earn 100000 when you have a high rank

The higher you rank the more you will be charged for:

- hangar fees
- fuel costs
- docking fees
- station license costs
-

(as Legend & Fleet Admiral I'm charged 270000 per pay cycle for a hangar in Talison and 800000000 for a licence in Pearl)

It might be better to buy licenses when you're not-quite-rich yet. and since hangar fees once you have a few billions are so high - it's cheaper to buy a new frame, rather than store one for more than a few cycles.

How do I raise my Military Rank as quickly as possible?

- Do as many military contracts as possible in a warzone (only military contracts count and they can only be found in a warzone)
- Do military contracts on MP with other pilots - each WP in a contract gives a point and you will learn fast by watching experienced pilots. You will also get though contracts quicker
- Decide whether military inspection and retrieval contracts are a cheat or not - if you are happy that they are part of a military pilots life, do them when they appear - they are quick and safe.
- If you are playing solo go to Talison Warzone; the contracts from the carrier there are a bit easier (3 or 4 hostiles rather than 4 or 5 hostiles at the command station)

The warzones are:

- Talison (a good one to start in or do solo stuff in - there are no capital ships in "normal" contracts and the carrier has easier contracts available)
- Cerulean
- Sierra
- Arvoch (Pearl)

My contract is failed as soon as I jump to the nav point given

Source Marvin, Miaz and others

It's not a bug nor a deliberate irritant! But it is a common confusion because there are two ways of using your jump drive: F2 and Alt-F2

For contracts, **don't** use the Alt key when jumping to the contract's waypoint. Alt-F2 produces a maximum jump which depends on the class of your jump drive. A Class 2 jump drive would cause you to jump two sectors. If you jump out of the sector then the contract automatically fails. If you use F2 you jump to the contract waypoint (which is always in the sector)

Miaz: I think this problem is happening a lot mostly for mouse and keyboard control users.
The **Alt** key is used to disable flight control temporarily to enable the mouse to click the "Jump" button on screen. Don't use that, Use F2 alone instead.

How do I:

find the item I have to return to a station or inspect?

Make sure that your pitch and heading are both set to 0 when jumping from station to Nav point - Keep flying directly till you see a purple blip. Sometimes it means flying directly to and past the nav marker till you see it, but it is there.

When you see the purple blip, close on it till it is directly in front of your ship, close enough to be picked up with the tractor beam or until you hear the "contract completed" message

clean solar panels

sit in front level with one corner and use your manoeuvring thrusters to sweep up a column, down the next column and repeat until you finish the array

Don't rush too much - the cleaning is a two stage thing and if you leave even one cell half cleaned you won't have finished!

make retrieval contracts efficient?

Before you set off aim your ship at the nav marker. Press F1 to get the nav map up and set the throttle to 2000 or more. Jump. As soon as you are coming out of the jump, select the station and then switch the nav map off. Use your strafe keys to move your nose up or down a bit and look carefully for the container - it may only be a flicker of a single pixel! As soon as you spot it aim at it turn on the tractor beam and accelerate. As soon as it is captured, turn off the beam, set your pitch to zero and hit jump

You will come out of jump about 3500 away from the station - use afterburner to cruise in and choose the next contract!

make inspections efficient?

Before you set off aim your ship at the nav marker. Press F1 to get the nav map up and set the throttle to 2000 or more. Jump. As soon as you are coming out of the jump, select the station and then switch the nav map off. Use your strafe keys to move your nose up or down a bit and look carefully for the container - it may only be a flicker of a single pixel! As soon as you spot it aim at it and accelerate. As soon as you bump into it, set your pitch to zero and hit jump. You will come out of jump and cruise into the station - choose the next contract!

do scanning/spying contracts?

You can jump in and take out the escort and then wait for your shields to fully recharge before sneaking onto the blind spot on the capital ships tail but this is slow, slow, sloooow and hazardous - still it is a nice feeling when you finally manage it!

Using a shield array is the simple way - get under the ship and deploy a shield array (you need a Deploy Constructor)

Use a stealth generator or stealth missile while flying below the ship - use the stealth device before you are spotted by the larger ship. You can ignore the CAP of protecting hostiles - they can't see you either!

Source Marvin: upgrade your shields and configure your ship to carry at least 50 CMs. Then, when you jump to the contracted waypoint, route all you're energy to the shields and get right underneath the capital ship. If you're close enough to its belly, you'll be inside its shielding and fairly safe from attack. Do this with IDS on. After you've completed the contract, use afterburner and engage inertial - burn fuel until you've reached about 2400 kps, then coast until you're out of range of the enemy. Finally, before anything bad happens, **save** (ie before the contract and then as soon as you get a contract completed message and are safe.

make scanning/spying contracts efficient?

- First thing to know is that you can ignore the escort. Secondly you need a stealth generator (not the one-shot units - they don't last long enough!)
- jump to the start and immediately turn to put the hostiles behind you and hit the afterburner. As soon as your energy reaches maximum, hit the stealth button and swing back towards the convoy.
- If your shields are not all at 100% the stealth generator will not start. Run away until you are out of range and wait until the shields are fully charged - setting the shield/weapon balance to S5/W-5 speeds this up. As soon as they are charged return to S-5/W5
- If a missile has been launched take it down with CM's. If it hits after you cloak, it will do hull damage but your stealth field should hold.
- As you approach the convoy stay out of the way of the escort. Lock onto the capital ship and the scan countdown will start as soon as you are closer than 1500 - stay near or the countdown will stop and you will have to start over again!
- While you are waiting get your pitch to zero and lock onto the station. When the mission is complete turn away from the hostiles and accelerate. When you are about 2800 - 3500 away (depending on your confidence), turn off stealth as jump as soon as your energy is recharged. Also set S5/W-5 to speed up the recharging of your shields. As soon as they are charged return to S-5/W5
- If you took hull damage it will slowly repair with a repair module. Speed things up at the station by paying for the repair if you can afford it.

do escort/protect missions

These are best done with other pilots. In theory just jump in and take out the escort. However as time passes (and you can't speed the process up!) more and more hostiles jump in to help. It's fun but a slow way to increase your military or civilian rank.

For the "defend disabled ship" mission: I had this mission many times and apart from 4 fighters there are always some other ships that will come after you. Hiring 4-6 ships helps greatly.

When doing a protect contract keep your speed up, but stay close to the ship you are protecting. It is easy to chase one ship away while the others are attacking the ship you are guarding so always remember to fly back to your escort ship and protect it

This is a good mission to use missiles generously, because you need to kill the foes quickly. You can make up for the economic disadvantages later (hopefully with some new guild-revealed free swag).

"Save your missile's for the Hostiles that are real close to the ship you are escorting and dog fight the others. But remember to concentrate on the fighters close to the escort ship. These mission's are so much easier to do in MP where you have more than one friendly ship helping you

The number of enemy ships you encounter will increase if you take too long to kill the original four or six or whatever. That's because the enemy has friends and family - all of which love to pick on a lone mercenary

do combat missions

use the usual combat tactics described elsewhere in the guide!

Opinion - destroy a capital ship I

Source Braveheart: "There are a few different ways to take out a Capital ship....Fulcrum torpedoes are the easiest but very expensive....What I do is not use my missiles until last, if at all....first target the engine by pressing the "U" key then set your course so you can strafe the engines as you pass by...I usually just use my max speed for whatever engine I have and then turn off IDS so I cruise by the ship around 700 away....I then strafe using my beam weapon (Which work on taking down the shields) and my particle cannon (Which pounds on the Hull) once I pass I turn IDS back on and start another pass going back the other way, turn IDS off again and strafe away....when the Capital ship fires missiles at me I either shoot them down or use my cm's...Once the shields are down you can use your missiles when you pass close to the engines"

Opinion - destroy a Capital ship II

Target one particular system with the U key...preferable the engine. Blast away all you got at the one system preferable 8 Exodus followed by a full emptying of Cannons and lasers with energy set to five on your inertial fly by. Then do another fly by with full cannons and lasers emptying your energy.....then dock at a station in the same sector reload another 8 exodus missiles but you have to make sure before you take this mission that there are at least 2 rounds of 8 exodus missiles available at the station where you launched from. And then do another run targeting the same system again full cannons lasers and at closest point fire all Excaliburs and that should finish of the capital ship if you would like to do this on your own....LOL....remember you can dock for repairs and reloading for mission involving combat in the same sector.....The only mission you cannot dock for in the middle of the contract is the retrieve missions without the retrieved cargo

Basics - Exploration & Navigation

Snippets

There are definitely gates which don't show up on the NavMap - one is in an asteroid cave! A couple can get you to uncharted systems

1 sector consists of -100000 to +100000 positions in all three directions. Think of a sector as a city, and a position in it as the street address.

Turning text on for gates can help you identify what ones are available without zooming in to an individual sector.

What gadgets can I get that make navigation easier?

Exploration is a big topic in Eochron. There have been several threads about how hard it was and as a result a couple of people wrote some add-ons to the game that allow you to map where you have been or even download an up to date map of everything that has been found. The map is interactive and even lets you show that position of your ship in real time!

The NavMap screen in your ship lets you see the known systems including overlays of political and economic info. There are several hundred uncharted systems around Eochron.

SeeJay and Mapman are the creators of the map (**EvoMetrics**). Atollski's gem (**MapLog**) is a logging system that lets you cruise around, find boundaries between systems and then use a nifty triangulation option to suggest locations worth exploring for new planets etc.

Marvin has written a decent guide for using **MapLog** to find new systems (see Volume 2 of this Guide and SeeJay's site (<http://eochron.junholt.se/menus/downloads.htm>) for the guide and the programme) **Evometrics** is available as a web utility or you can download a version that runs on your PC - however, both versions use server side databases

The issue is that both add-ons can be spoilers since they can show everything that has been found. Atollski's logging programme (**MapLog**) can be used without loading the universe data - then you just add the stuff you've found and build up a map of space you've explored. There is a version of the database available from SeeJay's site that just has the charted systems - sort of like buying a set of Michelin or (in the UK) OS maps. However, part of the fun of the game is exploring everything and discovering things for yourself (wrecks, carriers, asteroid fields, asteroids with caves inside, stations, stars, containers of free goodies, wormholes (to new places), black holes that with care can be used to go to other systems as well. How much spoiler you want is up to you!

Navigation I - overview

Source: SeeJay's Evoxron Basics Schools - <http://www.junholt.se/evoschool/index.htm>

The space in Evoxron is vast and hide many secrets.

The "known" systems that are connected by Jumpgates.

You can however fly between any systems using the "scenic" route.

There are many hidden systems and items to be found all over this Universe.

All systems on the chart below are displayed on your onboard NavMap.

To zoom in on any sector/object, right click on the sector you want to zoom in on.

Right click again on an object (Station, Planet, Jump Gate etc) to set your waypoint marker to it.

You can also use your scroll wheel to zoom in/out.

The universe is set up like this:

Sector Coordinates are labelled: SX, SY, SZ.

The SX+ is East and SX- is West.

The SY+ is Up and SY- is Down. (Use "Rear View" to check how far from the 0 axis the object is)

The SZ+ is North and SZ- is South.

The Position within a sector are labelled X, Y, Z.

They work just like the Sector Coordinates but only tells you where you are in a specific sector.

It ranges from -100 000 to 100 000 in all three directions.

(Think of the Sector coordinates as a city and the Positions as a street address)

Before jumping:

Set Pitch = 0

Set Heading = 0/360 (Set it to 180 when jumping to a Carrier)

Now jump.

This way you will dock right away or go straight through the gate.

Be aware that many planets have atmosphere and you WILL burn up if you jump too close.

To dock with a city you need to jump well outside of the atmosphere and manually fly down and dock.

Keep your speed below 1500.

Basic Navigation II - The NavMap

How can I quickly set a jump gates coordinates?

Source: BraveHeart In your NavMap just right click on the jump gate to have the nav coordinate set. Make sure you're heading is zero or 180 degrees on your compass to come into the gate straight on. Also set your pitch to zero too

How can I quickly set a station's coordinates?

In your nav map just right click on the station, carrier or construction station to have the nav coordinate set. On your compass make sure you're heading is 180 degrees for a carrier, 0, 90, 180, or 270 degrees for a construction station to come into the entrance(s) straight on. Also set your pitch to zero too. It doesn't matter what heading you use for a Trade Station

How can I move around and pan the NavMap?

Source Vice: There are a couple of ways;

First, just right click on the sector you want to zoom in on (and it needs to be on the same SY level you are)

Second, when fully zoomed in, use the arrow buttons on each side of the map to scroll outside the screen.

When I zoom in I can't see what I've clicked on!

When I right click on a system, it doesn't zoom in on it - nothing seems to be there.

Source Vice: The X direction is East-West, the Z direction is North-South and the Y direction is into and out of the screen - EPOCHRON is three dimensional! SY is the Y coordinate of a sector; PY is the Y coordinate position within the sector

Notice your SY value under the 'Destination Position' values. If it shows a negative or positive value that is not zero, (eg -2 or 3), then anything you zoom in on will be level with SY -2 or 3 (in this example). That means you'll just zoom in on a blank sector if there's nothing at that -2 or 3 SY sector.

Remember that in EPOCHRON, space is fully 3D. Objects can be above or below you, not just level with you. That goes for sectors as well.

If you want to zoom in on that sector which is on a different SY level to what you are on you can do one of three things. You will **either** need to

1. jump up or down vertically to the SY 0 sector **or**
2. left click on your "target" while zoomed out, then click on 'Rear View' to flip the map to a rear perspective, then left click again to set the SY position to level with the sector you want to jump to **or**
3. manually adjust the sector coordinates if you like.

Getting the hang of this issue can take a bit of time but once you've got it, it's like riding a bike - you'll never have problems in the future!

Remember: left click on target - then click on "rear view" - then left click on target again - then click on rear view again and you should see your target in the sector box

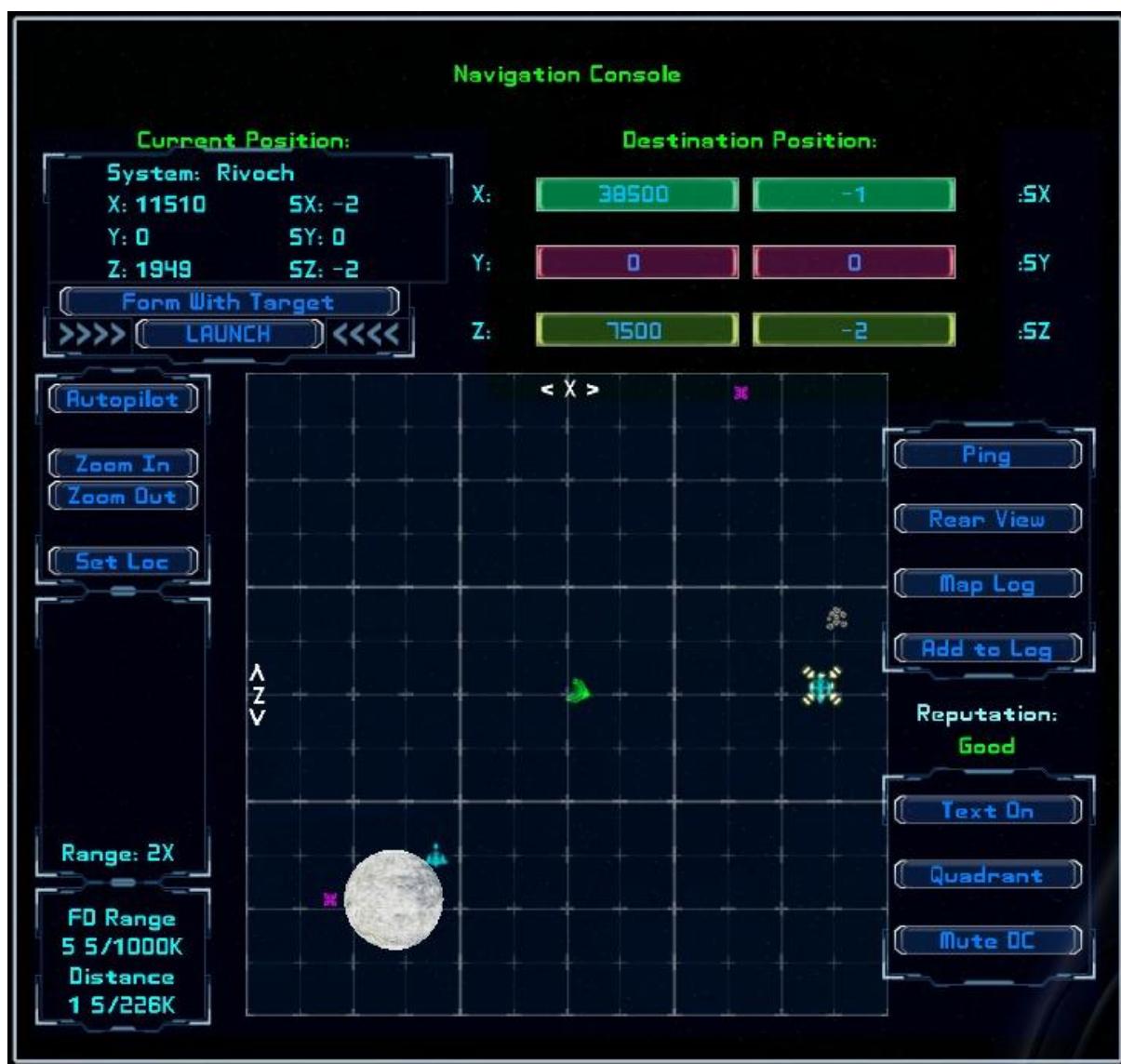
Beating the 3D Nav Map

source Marvin

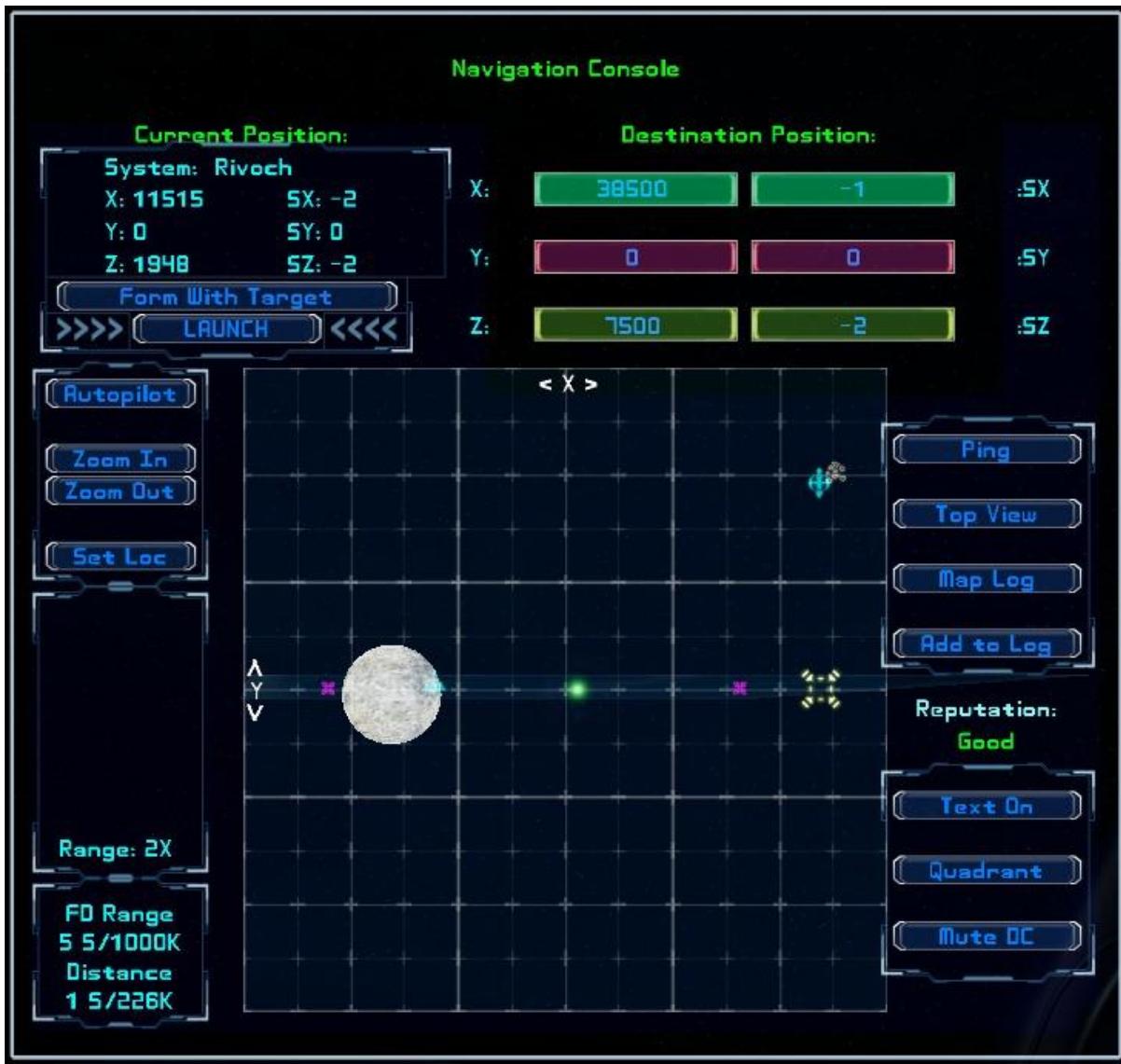
One of the most asked questions is: Why, when I right-click on something on the Nav Map, I zoom in on an empty sector?

Here's why.

In the screen shot directly below, you see nine sectors of the Nav Map. Notice the SX, SY and SZ windows for the Destination Position. Also make note of the player's intended jump location: a trade station to the right of the player's current position. As the player, I did *not* right-click on the target ... I used the standard left click.



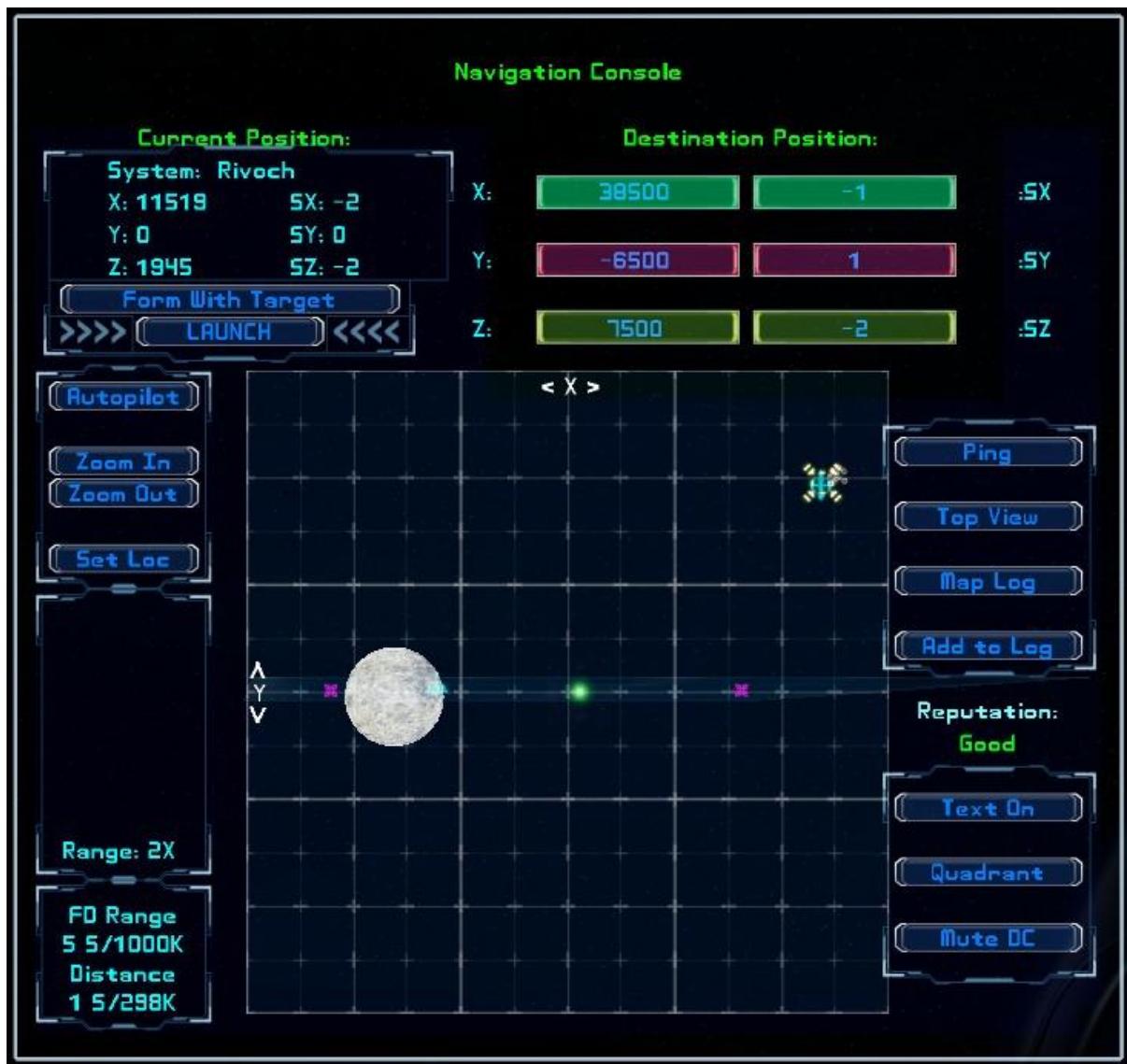
Here's why. Check the screen shot below.



The first screen shot was of the Nav Map as seen from above (Top View). The second screen shot is of the Nav Map as seen from the side (Rear View). Notice where the target (trade station) is now? It's above the player's current location. Compare that with where the player (me) placed the jump cursor.

Why is the cursor where it is? Because I've only set it in the horizontal. If I had right-clicked (instead of left-clicking), the view would've zoomed in on the sector where you see the cursor. Which, as it happens, is empty. (The gate you see in the Rear View is actually in another sector (check it out again, in the Top View)).

So, what you need to do, when your target is "out of plane" (above or below you on the Y axis), is go to Rear View and left-click on the target. As shown below. Notice the change in SY Destination Position.



Then you can switch back to the Top View and right-click to zoom in on the correct sector (and target).

Basic Navigation III - entering destination coordinates

Getting used to the NavMap is one of the hardest learning tasks for new pilots.

There are two sets of coordinates: sX, sY and sZ specify which **sector** you are in; pX, pY and pZ specify where about within a sector you are (**position**)

The easiest way to set a destination is to find it in the NavMap and then right click on it. Engage your jump drive. If it is a gate or station or carrier or planet etc then read the hint about direct jumping!

If your destination is off the NavMap then you can enter the "s" and "p" coordinates manually in the NavMap



This is the top section of the NavMap; You are given your present location (left hand side) and can enter your destination coordinates on the right hand side

Note that each section has two columns of three numbers; the X, Y and Z values are the positions **within** the sector you want to get to or are (pX, pY and pZ) the SX, SY and SZ are the sector coordinates

You can edit the destination numbers: It's a bit cumbersome compared to a word processor but works and becomes second nature once you get the hang of it.

For example to go to the sector: 1805 0 -2005 you would carry out the following steps:

1. click into the SX box.
2. use the backspace key to delete the number 1799
3. type in the required destination coordinate 1805
4. press <enter>
5. click into the SZ box.
6. use the backspace key to delete the number -2000
7. type in the required destination coordinate - 2005
8. press <enter>

We can ignore the SY coordinate in this case because we are not changing it, but editing it is the same key sequence as for SX and SZ

You can also alter the pZ, pY and pZ using the same method if you need to. However unless you are jumping into something, arriving in the sector and then right clicking on your destination in the NavMap is more efficient

Basic Navigation IV - sectors appear empty when I zoom in

Source Marvin: Sometimes, right click on the map with sectors shows strange coordinates instead of the right. I hover the cursor on the planet (station, gates, any object), click the right mouse button and see the clean sector without planets, and without anything. To normal travelling I have to manually use the arrows to see the map at the highest magnification. Such behaviour can go on indefinitely until you do not restart the game. But very rarely happens that everything returns to normal and I do not why.

You might be suffering from 2D-it's. Make sure your target is not above or below you.

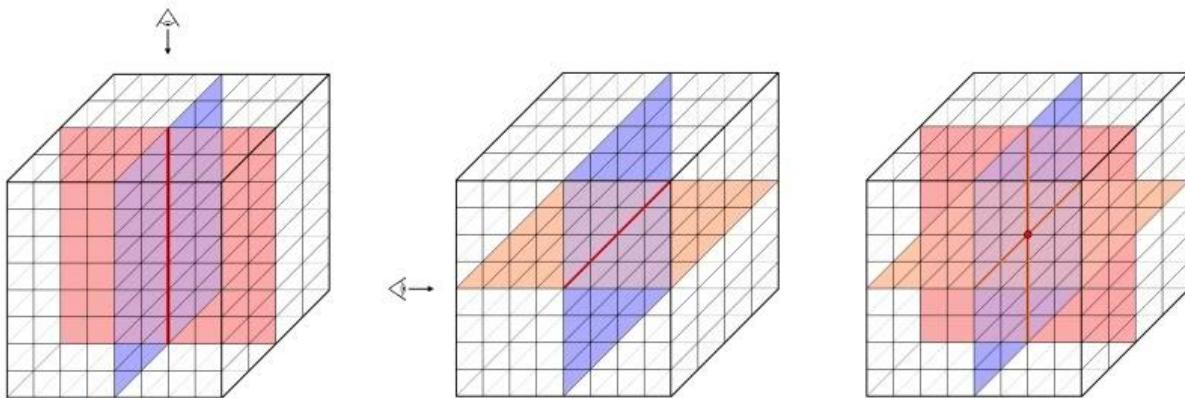
Always do this:

1. Select Top View.
2. Left click on your target.
3. Select Rear View.
4. Left click on your target.
5. Select Top View again.
6. Right click on your target.

The map zooms in when you right click. By left-clicking in both X-Z and X-Y maps, you've set your location in all three dimensions.

I've found that the only time it doesn't work is when your target is in one or more sectors above or below you on the Y-axis ... and you forget to check the Rear View (left click to set the correct Y coordinate) before going back to right-click on Top View.

Here's why:



When you're in the Top View and click (either left or right) on the Nav map, your actual location could be anywhere along the red line in the first diagram. The difference between clicking left or right is, with right-clicking, you zoom in on the map.

When you're in the Rear View and click on the Nav map, your actual location could be anywhere along the red line in the second diagram.

Ergo, you need to click on the Nav map in both views to specify your exact jump point (where the two lines intersect), as indicated in the third diagram.

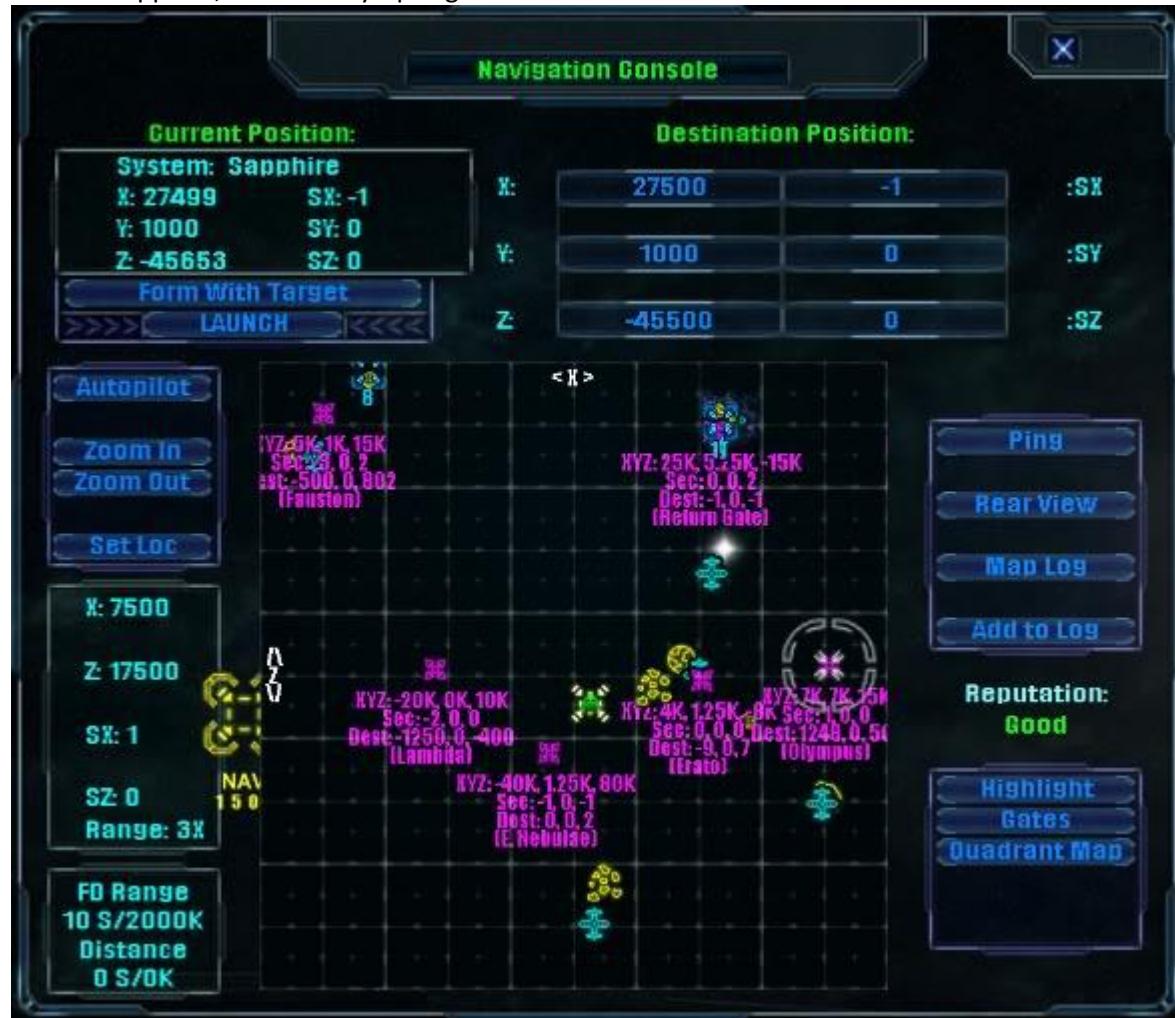
Basic Navigation V - IM's Basic Console Navigation Tutorial <Spoiler Alert>

Source Marvin <http://www.starwraith.com/forum/viewthread.php?tid=6126>

The following is a quick tutorial for getting from Sapphire to a specific, unmarked location in Olympus using the Destination Position windows of the Navigation Console.

Open the Navigation Console and look at the map.

1. From Sapphire, take the Olympus gate.



2. Place your cursor over the ":SX" window of the Destination Position. The numbers will turn from blue to blue-green.



3. Left click on the window. The numbers will turn green.



4. Backspace to clear the window.



5. From your keyboard, type in the number 1275.



6. Press the Enter key. The new number will turn back to blue.



7. Do the same for the ":SZ" window, entering the number 510.



8. Engage Autopilot.



9. Your ship will turn toward those newly entered coordinates and take up a course of about : Heading 070, Mark 0.



After a few jumps, your ship will stop near a purple dot. Zoom in on the navigation map to see it better.



The purple dot is the location of a wormhole.

Basics - Exploration & Finding New systems

Quick Method 1

Source InkedMike:

There are several hundred "uncharted" systems in Eochron. As for Finding New Systems, you may be Surprised how many there are. You may want to try finding One Systems, then use that as Point Zero and Jump out Max Range in All Directions, setting Nav Markers at each Point. Continue to Jump in all Directions from Your Nav points. Once you Find Another Systems, Repeat.

Quick Method 2

Load up Atollski's MapLog program and tick the log box (at the bottom). Jump from one system to another (keeping fuel requirements or refuel gadgets in mind) and in the text file "logdata" in the main game folder you will have a detailed list of all the systems you have flown through. Alternately you can stay glued to the MapLog window and system changes are shown at the top in the form "Entered new system O182"

You can then use the trilateration function to track down new systems (see below)

MapLog is available from SeeJay's site: <http://eochron.junholt.se/>

Trilateration

Marvin's Instructions for using Atollski's MapLog program for finding new systems and planets can be downloaded from <http://eochron.junholt.se/menus/downloads.htm> - MarvinsInstructions.doc

1. Launch Atoll's Map Log.
2. Launch the game.
3. Begin in a known system (one you've already logged in Atoll's Map Log program). Make certain the system has at least one planet.

Note: The name of the system should be the same as one of the planets listed in the Map Log program.

4. Call up Atoll's Map Log program (Alt+Tab).

Note: If you're using Windows 7, you must first press Win Key+D prior to Alt+Tab.

5. Check that you have a tic mark in both the Nav and Log boxes (the Update box is optional).
6. Position yourself along the Y axis so that the Y coordinate is zero (0).
7. Pick a likely direction and fly until you come to another system.
8. Confirm that it's a new, uncharted system.

Note: If you select the "New System Notification" option from the "Tools and Options" drop-down menu, the Map Log program will pop up when you've entered a new, uncharted system.

9. Fly back and forth, shortening the distance between jumps, until you've determined the exact sector where the two systems meet.
10. Attempt to follow the border between the two systems for about 200 sectors.

11. Again, fly back and forth, as in step 9.
12. Now position yourself so that the Y coordinate is offset either above or below by about 100 sectors.
13. Continue flying along the border until you're another 200 sectors from each of the other two crossing points.
14. Perform step 9 again
15. Fly into the new system (if you're not already there).
16. Click on the "Tools and Options" menu icon in Atoll's Map Log program.

17. Click on the "Attempt Trilateration" option from the drop-down menu.



18. Make note of the coordinates generated by the program. They will be listed as a "Possible Location" for objects in the new system. They will also be listed as waypoints in your in-game Log.



Note: The location of the known planet (the one used to calculate the new coordinates) will most likely be on the list. Ignore it and concentrate on the other entries.

19. Fly to one of the most likely locations for a new planet.



20. Once you've located a new planet, log your discovery as outlined in the Logging Your Discoveries section.

21. You can now delete the list of computed coordinates (possible locations).

Note: You can now also remove both the logdata.txt and trilateration.csv file from your main game folder. New files will be generated each time you start the Log, tracking your steps as you search for another new system and attempt another trilateration.

22. Before you move on, look around for a nearby star (in the direction of the illuminated side of your new planet) and other planets that might be in the system.

Discussion: How to find uncharted planets (fairly) reliably

Source: BvP, SeeJay, Marvin, Miaz and others

First get Atollski's MapLog (<http://www.starwraith.com/forum/viewthread.php?tid=6799>) and get familiar using it for navigation/charting (I think v1.0 is working better for me than 1.01). You can download a datafile from SeeJay's site that contains just the charted systems (a sort of Eochron Michelin Map). (<http://eochron.junholt.se/menus/downloads.htm>)

Then look at the Marvin's IM Nav Tutorial and go to chapter 'Exploration I - Finding New systems' and read the bit entitled 'Trilateration', this method works well for me. Once you get the hang of it, it is not difficult to do, but I suggest you get familiar with using Atollski's program before you try using the trilateration function.

SeeJay : I always use Trilateration. Either with Atollskis Navdata or using pen and paper drawing circles.

MiaZ: Look at your hull in 3rd person view and check the light/shadows to see where the closest star is. Leaving a system and finding a new star will change the light/shadow reflections on your hull.

Some people find it easier to use Atollskis Navdata with an empty file when they start and then enter the planets that they will use in that session of exploration for the area that I will be searching in.

Marvin: Originally, I tried triangulation after realizing that the Navigation map always displayed a "system name" for whatever planet was closest. Then SeeJay convinced me to use "circle trilateration" ... an exercise in geometry which made it much easier to picture (in my negatronic head) what was going on (computation-wise) when I switched over to Atollski's Nav Tracker.

Miaz: Navigation map always displays a "system name" for whatever planet is in that system but this is not necessarily the closest planet to your current position.

The closest star to current position doesn't have much to do with the system name either.

Where there is a star you will find a group of systems all close together with each system named differently depending on the planet in that system. The star will be at the cross roads of all these systems.

Finding the star using visual clues is the easy part.

Finding the planets that are NOT close near to the star or finding planets by following the system name, then trilateration, Atollskis Navdata is very useful.

... A little example of my technique at finding stars.

Keep a close look at the part of the cockpit just along the front ledge above the radar and to the left and right sides of the MFDS.

Use the reflection to put the star behind me - I am flying away from the star in search of new system.



After jumping about 200 sectors, Suddenly the light changes.

Here it is coming from the left.



Using that ledge above the radar and to the left and right of the mfds,

I aim for the star.

I keep jumping forwards ALT F2 until I jump past it. When that happens the light will suddenly change again.



Light changes again now its to my right.



Now I open the navmap



I hope this helps the semi explorers like me who want to stumble across something rather than do any search patterns or trilaterations.

As a start you could try from 0,0,0 keep jumping north and you will see there is a system just north west, very easy to find using this method.

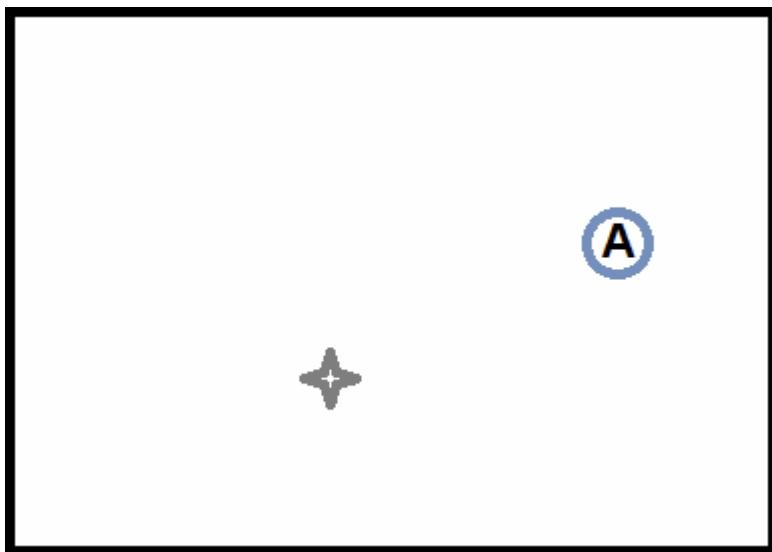
I only used the default cockpit because it is best for showing this and makes it easier to see and explain. Some of the cockpit mods aren't so easy to use though, so if exploring I do a quick switch to default pit. But even without a pit the same thing can be done by stitching to 3rd person view or you can even switch to external view between jumps.

Marvin: MiaZ's method helps you find stars. Using that method, when I do find a star, I then spiral outward until I find planets. Notice that in MiaZ's example, the Nav map indicates system K434 . . . that's the closest planet. But, as you spiral out, you might work yourself away from planet K434 and toward a different planet in the same system . . . at which time the System name on the Nav map will change. Keep track of the System names and you'll get some idea as to how many planets are in the system.

Trilateration helps you find the planets. It tracks the crossover points between one planet and one or more other planets . . . then calculates the location of the planet in question. Before I used the trilateration method, I used graph paper and a pencil, plotting out the borders between the system (planet) being hunted and known planets (very important: you need to use a border between a known planet and your target planet). It made it easier to picture, in my head, how trilateration worked.

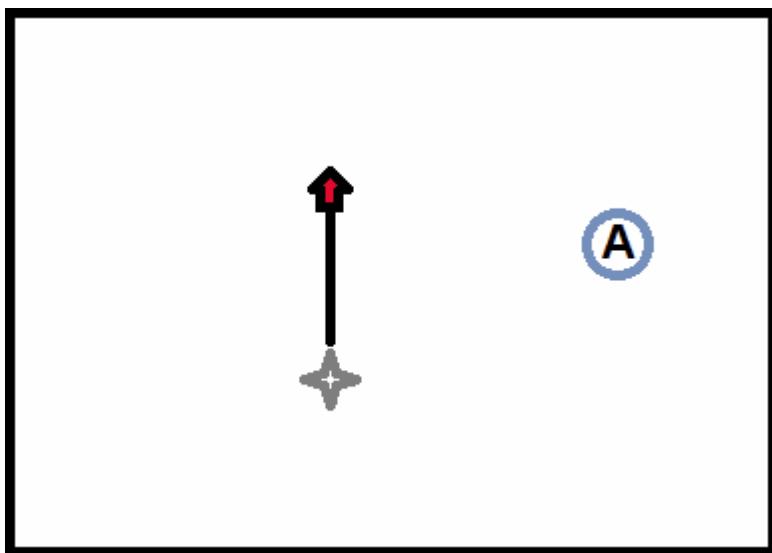
Distance isn't that important. What is important is that you use accurate coordinates for your known planet(s). It/they are your reference point(s). At every crossover, you know that you're halfway between a set of known coordinates and a set you're trying to find. Ergo, if you're a long way from your known planet (reference point) at crossover, then the planet you're trying to find will also be a long way off. In fact, the two planets will be an equal distance from you . . . in different directions.

1. You depart Planet A, heading about west-southwest.
2. At some point, your Navigation Map shows you in a new system: Planet B.
3. At this point, you turn on the Nav Tracker.
4. Crossing back and forth, you find the exact sector where Planet B borders on Planet A.



5. Returning to Planet A space, you flip a coin to see which way to go:

Head toward the known planet (Planet A) along a cardinal heading.
Ergo, in the example, you can head either north or east.
You decide to go north.

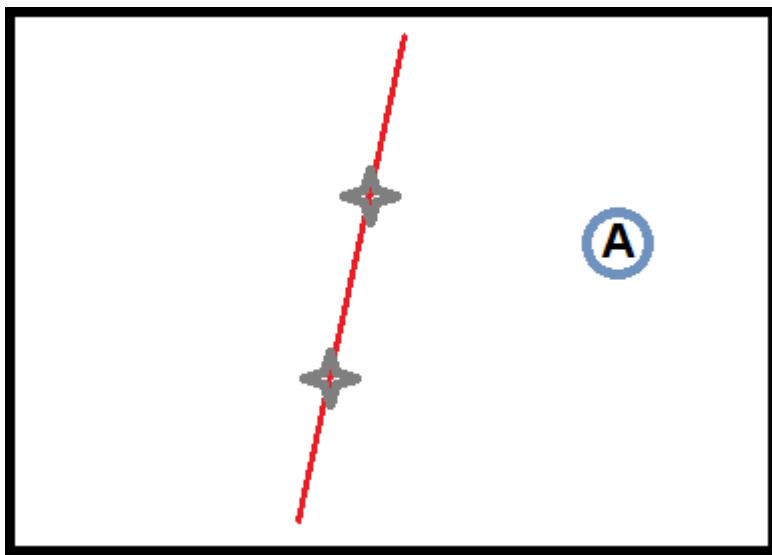


6. Sooner or later, you should find yourself back in the Planet B system.
7. Continue to follow the border (between Planet A and Planet B) for about 150 to 200 sectors.

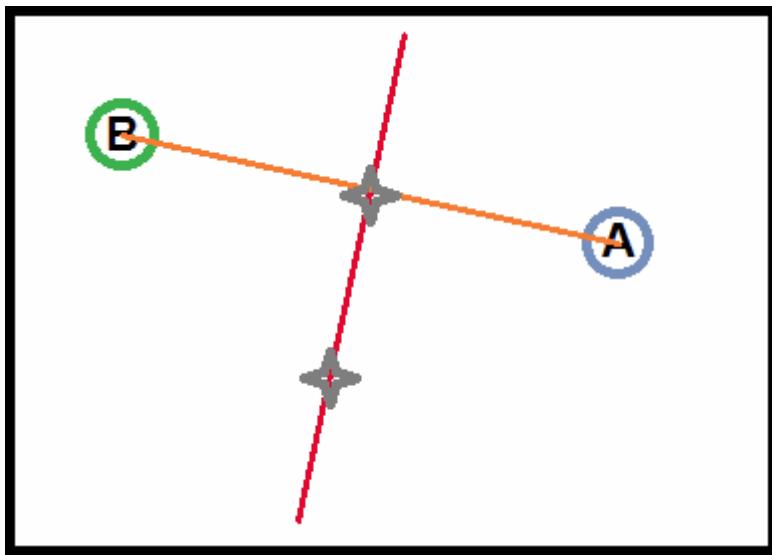
8. Make sure Nav Tracker is still on.
9. Again, cross back and forth until you find the exact sector where Planet B borders Planet A.



At this point, the Nav Tracker program can compute the location of Planet B . . . in the horizontal. The planet will be on the side opposite a line drawn through the two crossing points . . .



... perpendicular to the line, at a distance equal to the distance from Planet A to the line.



If you want to be more accurate, you can climb along the Y axis about 150 sectors and find the crossing point in the vertical. Usually, though, planets are on or near 0 degrees in the vertical.

Now, the Nav Tracker program has the data it needs. You can attempt trilateration.

That's the procedure I use. But, as you can see in the 4th diagram, a border crossing can be found anywhere along the red line. So, if going toward the known planet takes you into the space of a third (known or unknown) planet, you might want to double back and try any of the other three cardinal headings.

Raynor: Miaz's explanation about stars glare changed my whole perspective on exploration. Now I love it. I mean I had wanted to explore before but thought it was just a complete random gamble. Within 2 hours last night I found three hidden systems (which amount to like 5 planets).

Bobofet: I've been messing around with the sun reflection thing, it's helped a lot when I've flown for an hour in a random direction and want to get back without looking up locations online.

I've noticed also if you fly at a nice looking backdrop cloud, it eventually disappears and a new one appears . . . I'm guessing this means I've entered a different region.

My question is how far does one suns light last? For example. . . I fly out towards a backdrop . . . backdrop disappears . . . can I then use the sun light to find a new star, or will I still be picking up the light from the last star I passed? Sorry if this is a little hard to understand the question, I don't know how to explain it any better though

Miaz: I know what you're getting at here. I think the closest star will change faster than the backdrops changes, at least in the inner systems. Just guessing this on the fact there are sometimes many star systems within a relatively short range at times and would mostly likely share the same nebula backdrop.

You should be able to tell if it's a new star when the nebula backdrop changes. If the direction or colour of light reflections change at the same time as the backdrop changes. Then yes - If not, it is most likely the same star you were on before.

Marvin: For the most part, backdrop nebulas are defined as part of a "chunk" of systems ... as are the definitions for global reputation and types of ships you're likely to encounter. The stars and planets are then defined as sub-sets of those chunks. In other words, the systems are inside the chunks, in much the same way as planets and stars are found inside a sector. In Legends, the "chunk" definitions looked something like this:

```
-Local Nebula Backdrop And Reputation  
NebBackXLow=-14000  
NebBackXHigh=26000  
NebBackYLow=-18000  
NebBackYHigh=24000  
NebBackZLow=50000  
NebBackZHigh=60000  
NebBackText=environment\milkywayUB.bmp  
ReputationID=1  
Reputation=1  
-EndNebBack  
  
-Local Ship Types  
ShipsXLow=-14000  
ShipsXHigh=26000  
ShipsYLow=-18000  
ShipsYHigh=24000  
ShipsZLow=50000  
ShipsZHigh=60000  
ShipsTypeMin=7  
ShipsTypeMax=10  
ShipsGunMin=7  
ShipsGunMax=13  
-EndShips
```

Both stars and planets would be placed inside those "High-Low" coordinates.

Nine hundred sectors is about average (give or take a couple hundred) for the distance between uncharted star systems.

Alaric: What I'm finding with the light method is you've got to start with a star at your back and look for a different reflection on the front. It worked this time but just barely. I could have missed the planet by one jump.

Marvin: Now find the star. It will be illuminating the planet . . . so head in the logical direction, according to which side of the planet is lit.

Trilateration is great for when you're serious about exploration. Miaz' method is very useful for those "hey, what's this?" moments.

Westernnomad: I just discovered that you can make **long range** probes using 25 platinum at a construction station. These will significantly increase the range of your nav map.

For instance, I was able to locate a planet in W116 from the star in F862. Anyone know what the actual numbers are for the range boost?

Getting To Sol/Exploring

I have a little problem. I'm trying to travel to Sol, but with my Aries fighter, I'd run out of fuel loooooooooong before I got close with my class 5 fulcrum drive. So I suppose my questions are:

Where Can I get a beefed up Fulcrum drive? One that will go even farther? - Answer: you need a Mantis Drive that will travel 10 sectors per jump , but the fuel use overall will be the same - the Mantis Drive uses twice the fuel per jump than the Class5 Fulcrum Drive (Mantis: 10 units fo fuel / C5 drive uses 5 units of fuel

What Rig set up would be the best to send me to Sol? A flying gas tank?

You could install a gigantic fuel tank, but personally I'd use a deploy constructor for temporary refuel stops. It's quicker to refuel but more expensive to build a trade station - carry a Build Constructor. There are also fuel converters, but then you need a tractor beam equipped as well - and I'm only aware of being able to make fuel from nebulae and star coronas - there aren't any on route!

What's the best system to travel from though (as in shortest distance)? Alpha Centauri, Sirius, or the the portal to Riftspace and then to Sol?

The "Portal" to RiftSpace is a wormhole so you can just fly into it without damage - just like a normal gate. However you have to get to RiftSpace first. There is an uncharted gate in an uncharted system that you have to find and then fly to. You then jump to RiftSpace. Spoiler: L573 (-1598/0/-2048)

Going from Sirius is shorter than from Alpha Centauri .

Where is that coordinate pointing to? (tables 1&2)

The first table has the known systems in alphabetical order

The second table has them arranged alphabetically but divided into quadrants

The third table has them arranged scanning left to right across the core

The fourth table has them arranged scanning top to bottom down across the core

Table 1

Agate	-2200	3620
Agate Hub	-2198	3520
Alpha Centauri	1300	-3700
Andromeda	2000	28000
Aquila	1400	-2700
Aries	-3500	2000
Atlas	1000	1500
AWZ(Pearl)	3500	-1500
Capella	2000	-1000
Cerulean	2400	2100
CWZ	2420	2500
Cygnus	-1700	1250
Deneb	3500	-3500
Emerald	-3200	-550
Fauston	-500	800
Iota	-2500	-1500
Lambda	-1250	-400
Lost Rucker	5500	-1000
Merak	-2000	2500
Olympus Prime	1250	500
Onyx	3500	1000
Orion	-1000	-2400
Pearl	3500	-1800
Pices	1800	-300
RiftSpace	7000	9500
Rigel	-3200	-2500
Rucker	1800	-2000
Sapphire	0	0
Sierra	-2200	3500
Sirius	-2300	-3700
Sol	-1050	-5050
SWZ	-2200	3800
Talison	100	2000
Thuban	0	-500
TWZ	100	2550
Vega	500	-2200
Virgo	700	-1250
Vonari	1000	5000
WolfZone	5550	5550

Table 2

NW	Agate	-2200	3620
NE	Agate Hub	-2198	3520
NE	SWZ	-2200	3800
NE	Sierra	-2200	3500
NE	Aries	-3500	2000
NE	Talison	100	2000
NE	Cygnus	-1700	1250
NE	Merak	-2000	2500
NE	TWZ	100	2550
NE	Talison	100	2000
NE	Fauston	-500	800
NE	CWZ	2420	2500
NE	Cerulean	2400	2100
NE	Olympus Prime	1250	500
NE	Atlas	1000	1500
NE	Onyx	3500	1000

Sapphire	0	0
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border

SW	Emerald	-3200	-550
SE	Lambda	-1250	-400
SE	Iota	-2500	-1500
SE	Rigel	-3200	-2500
SE	Orion	-1000	-2400
SE	Sirius	-2300	-3700
SE	Thuban	0	-500
SE	AWZ(Pearl)	3500	-1500
SE	Pices	1800	-300
SE	Vega	500	-2200
SE	Capella	2000	-1000
SE	Virgo	700	-1250
SE	Pearl	3500	-1800
SE	Rucker	1800	-2000
SE	Aquila	1400	-2700
SE	Alpha Centauri	1300	-3700
SE	Deneb	3500	-3500

border

Misc	RiftSpace	7000	9500
Misc	WolfZone	5550	5550
Misc	Vonari	1000	5000
Misc	Lost Rucker	5500	-1000
Misc	Andromeda	2000	28000
Misc	Sol	-1050	-5050

Where is that coordinate pointing to? (tables 3&4)

Table 3 West to East

Aries	-3500	2000
Emerald	-3200	-550
Rigel	-3200	-2500
Iota	-2500	-1500
Sirius	-2300	-3700
Sierra	-2200	3500
Agate	-2200	3620
SWZ	-2200	3800
Agate Hub	-2198	3520
Merak	-2000	2500
Cygnus	-1700	1250
Lambda	-1250	-400
Sol	-1050	-5050
Orion	-1000	-2400
Fauston	-500	800
Sapphire	0	0
Thuban	0	-500
Talison	100	2000
TWZ	100	2550
Vega	500	-2200
Virgo	700	-1250
Atlas	1000	1500
Vonari	1000	5000
Olympus Prime	1250	500
Alpha Centauri	1300	-3700
Aquila	1400	-2700
Pices	1800	-300
Rucker	1800	-2000
Capella	2000	-1000
Andromeda	2000	28000
Cerulean	2400	2100
CWZ	2420	2500
Onyx	3500	1000
Pearl	3500	-1800
Deneb	3500	-3500
AWZ(Pearl)	3500	-1500
Lost Rucker	5500	-1000
WolfZone	5550	5550
RiftSpace	7000	9500

Table 4 North to South

Andromeda	2000	28000
RiftSpace	7000	9500
WolfZone	5550	5550
Vonari	1000	5000
SWZ	-2200	3800
Agate	-2200	3620
Agate Hub	-2198	3520
Sierra	-2200	3500
TWZ	100	2550
Merak	-2000	2500
CWZ	2420	2500
Cerulean	2400	2100
Aries	-3500	2000
Talison	100	2000
Atlas	1000	1500
Cygnus	-1700	1250
Onyx	3500	1000
Fauston	-500	800
Olympus Prime	1250	500
Sapphire	0	0
Pices	1800	-300
Lambda	-1250	-400
Thuban	0	-500
Emerald	-3200	-550
Capella	2000	-1000
Lost Rucker	5500	-1000
Virgo	700	-1250
Iota	-2500	-1500
AWZ(Pearl)	3500	-1500
Pearl	3500	-1800
Rucker	1800	-2000
Vega	500	-2200
Orion	-1000	-2400
Rigel	-3200	-2500
Aquila	1400	-2700
Deneb	3500	-3500
Sirius	-2300	-3700
Alpha Centauri	1300	-3700
Sol	-1050	-5050

Racing

Opinion - Tips from rookie to a rookie:

from Von Paulus (edited by Incoming)

- I don't advise to use Inertial mode. You need to control the ship and for manoeuvring it's easy and better if you use IDS mode.
- Never use afterburner before a curve, like when driving real cars. Use it when there's a line of straight rings.
- keep your speed at about 1000
- I use a lot of the rudders (roll) when I'm getting near the edge of the ring, to pull the ship to the centre of the ring. Always try to keep in the centre.
- Avoid looking at or thinking about your opponent racer, just stay totally focussed in your flying. This is a hard but it is the most effective rule - concentrate on finishing the course at around 1000
- You don't need to buy a special wings or engine. But it will help if you do an upgrade wings make turning nippier but if you are still in a starter ship they are nippy anyway. Bigger engines don't (repeat don't) accelerate any faster they just increase your top speed and with IDS multipliers you can already go faster than you can stay in the rings!

Opinion - winning the race I

You don't need to keep the centre of the ring, once you figure out how far you can go it is quite easy to stick to the "inside" edge of the rings and cut some distance off your journey. Works on race tracks on Earth, works in space. Get as close to the inside as you are comfortable with, face the next ring (or more precisely, the bit of the ring closest to the inside edge that you are comfortable with, I usually end up with the edge of the ring slicing through the middle of the side windows in the main cockpit view), keep tapping the afterburner and keep an eye on your speed. You should finish the race when the AI is around ring 80 (my result in the talon today) or so using that method if you don't miss any.

Opinion - winning the race II

Source Marvin: When I race I set my IDS x 2 and keeps the throttle between half (sharp turns) and full. Win every time without "sliding" off track. Btw, the trick to the race is to ignore the Navy pilot. Fly at your best speed without spitting out of the track. If you can maintain between 800 and 1000 kps, just concentrate on what's ahead. Take the curves like you would at Indy. And, I repeat, never spit out ... ignore the other pilot.

Summary - winning the race

- keep IDS on, all the time
- speed around 1000-1100
- against other people's advice, I did **not** use the afterburner; the course may be random or not, I don't know, but my courses didn't really have long straight stretches. Every time I used the afterburner, I overshot and missed gates, and consequently lost. I consistently had the best results every time I did **not** use the afterburner.
- constant speed is **much** better than using afterburner, for my flying skills; afterburner might give you minor gains at the expense of losing the race by missing a ring, which is a dealbreaker.
- A constant speed of 1100 is more than enough to leave your opponent behind. I went at 1100 constantly without issues, and that was in a Starmaster...
- *the only time you may want to use the afterburner is when you go in, on the very first stretch of the course, because that is usually/always a straight segment, but that's it.*
- ignore the other pilot, focus **only** on the course. It might help to turn off the HUD completely or at least partially, so you can focus only on the course.
- avoid missing rings; if you miss rings, it's likely you'll lose; so just go as fast as you can without missing rings.
- the other pilot might ram you from behind; ignore him.

Basics - Combat

Snippets:

remember to rebalance energy to a specific shield array that is being hit (with numpad keys default)

remember to balance energy between weapons and shield, depending on situation

At 1800-2000 mps, on inertial, you'll usually zip right past enemy missiles (except those headed nose-on). Use your afterburner to reverse course.

Military contracts are only offered in war zones - WZ's are not the same as hostile systems (like Thuban and Fauston) - there are four wZ's Sierra, Talison, Cerulean and Arvoch (near Pearl)

You can do both civilian and/or military contracts in a civilian ship

Nigel_Strange: EM allows you to map a hotkey to deployments. I think that, in a tough combat situation, it is a good idea to map a hot key to the shield array deployment.

I get attacked as soon as I jump into a contract! - help!

Open your nav map after clicking on the contract/mission and set a new nav marker a little ways away from the original nav point - 10 or 20 give or take, then fly manually to the original nav point. This will give you more time to prepare for combat.

Never head directly towards the enemy - offset your approach just off to one side of the enemy and build up your speed turn IDS off and target the lead hostile. Fire off a missile close to your target followed up with beam weapons and particle cannon.

Keep in mind the missile's they are firing at you - hostiles seem to have double figure missile hardpoints! Your chances to get the missile to chase a CM go down when your thrusters or worse, your afterburners, are firing. With IDS active, you're nearly constantly thrusting, which is like a big homing beacon for any incoming missile.

Basic Combat Advice for newbies Part I

Source Vice: Until you've practiced using momentum/lateral drift for strafe attacks, counter-measures, cutting heat signatures, and maneuvering for optimal attack positions, I'd recommend sticking to Olympus. The hostile presence there is fairly moderate and their ships/weapons are pretty weak overall and the amount of missiles launched at you is still manageable. Also, *most* NPC ships are friendly or neutral. Compared to Fauston or (heaven forbid!) Thuban, it's downright friendly there.

Don't take combat contracts for a while, just fly around for a while looking for hostiles. Pick fights with just one or two hostile ships at a time. Avoid losing speed, and try to keep your distance on passes. Stay there until you've established an effective skillset that works for you. If needed, you can also hop online and take on a human wingman or two for added support while you practice

Avoid flying directly at your target as that just makes you an easier target for your opponent and gives you less time to react if they fire a missile at you. Depending on your tolerance for spoilers, the strategy guide has a very good introduction to combat tactics.

Early in the game, I would recommend working on more defensive combat before trying to dive in and attack with guns blazing. If you fly in the same direction for very long, you make it easy for hostiles to shoot you down. Make sure you move around a lot and keep your speed very high. Avoid flying directly at your target(s), make sure you impart lateral or vertical momentum so incoming gunfire has a much harder time hitting you. Use your afterburner and try not to let your speed fall below about 1500-2000 collectively (forward velocity + lateral velocity + vertical velocity). Learn to hold inertial drifting as you begin an attack run. Pick and choose your targets one at a time and try to bait each one away from the group to make it easier to pick them off. Best way to fight is in Inertial mode, that way the countermeasures work best since your engine heat signature is pretty much none existent. AI don't have MDTs auto aim so 99% of their cannon fire will miss you if you strafe in Inert mode.

So in a nutshell, fighting in Inertial mode incoming enemy fire and missiles have very little effect on you, once you got the Inert combat mastered you can win fights against 10+ enemies with ease by yourself.

Remember:

- reduce/eliminate heat signature by using Inertial mode, and having thrusters / afterburner off as much as possible.
- Shoot down missiles.
- Strafe the enemy by "grazing" the pack, don't go straight into its middle.
- Impose some extra spin on your ship by building up speed in one of the lateral vectors (in inertial mode), by firing one of the thrusters for a long time.
- You don't want to move in the direction where your ship is facing, because that makes it easier for the AI to target you. If you're moving in one direction and facing in another, they have a harder time figuring out where you're going without MDTs

As you improve your ship's capabilities, you can work toward more aggressive offensive tactics, but for now, use the agility and speed of the light ship you have to your advantage by being more selective about attacks and using defensive/evasive piloting.

You also might want to try the IMG Questline, which'll net you a few upgrades early on (as well as asking you to perform a few combat missions in Olympus).

Basic Combat Advice for newbies Part II - Jousting

One of the easiest tactics to use is "jousting" like the knights of old used! You can use it when you head towards a hostile or you jump to your contract

Before you jump into a contract with hostiles involved set your pitch to zero - your heading on your compass is less important. Set your speed to about 1000 and then when you jump pull back on your joystick. Once you arrive at the nav point make sure you are flying at an angle to the hostiles then turn IDS off. This will allow you to coast by the hostiles.

If you only have two missiles make them count - get a lock on the nearest target and fire the missile when you are 1000 - 1500 meters away. I prefer to shoot the hostiles using just my beam weapon until I can get their shields down (check progress on the taget display) then I use missiles and particle cannon. Beam weapons work well in bringing down the shields but don't do a lot of damage to the hull and the cannons do a good job at damaging the hull. Your cannons use a lot less energy when used alone - using both together means you run out of energy much sooner - not good in combat!

Once past the Hostiles 1000 to 2000 meters away turn back to face the furball, and use your afterburner to get up to get back to the hostiles, Use lateral thrusters to slip sideways - you are much harder to track and hit (though this only works for AI pilots!) Strafe the hostiles as you pass within 500-400 meters. Repeat as often as necessary. This tactic does take awhile but will help you to survive longer. Once you're down to 2 hostiles then try flying to their rear and attack from behind. Don't try this too soon in the battle or some smarty will get on your six!

Basic Combat Advice for newbies Part III - getting the hang of it

Source MMaggio and others: Hostiles don't have unlimited missiles, but they are quite smart. One of the things combat in EM helps to encourage is online play, where players can compete cooperatively for contracts (but they still both get paid the full amount for the contract). Combat in Mercenary (as a result of the slow reload excals) forces you to use (and become skilled with) your primary weapons. Of course you can still carry up to eight missiles during a contract (and you can go back to the station to get more, if necessary), but you will have a much harder time turning a profit if you don't learn to use your primaries.

When you are just starting out, you might consider some playful passes to get your enemy to unload their payload of missiles on you. After you've been fighting for some time, the number of missiles launched at you should slow or stop completely (unless you have fresh enemies jumping in and joining the fray)

Try to take your enemy one at a time. Micro jumping* can be an incredibly useful tactic for getting your enemies to scatter. You must set up a jump point very close by first and you must have full energy before you can jump - so you can't jump out if you are under attack and being hit!

You can also charge your enemies and go for any that are on the fringes. (see hint on jousting. Make the most of your dedicated weapon control. Close the distance with your enemy and drain their shields with your beam weapon until his shields are depleted, and then unload with your cannons. There are two items - cannon heatsink & cannon relay system (only one of them is available early in the game) that will increase the amount of firepower you can pump out; a weapons officer with a good skill level always helps if you are in a civilian craft (no crew allowed in military craft!)

*Keep in mind, however, that if you do this in SP with AI wingmen, your wingmen will spend more time orienting themselves after the jump than they will fighting.

Basic Combat Advice for newbies Part IV - finding your feet!

The Excalibur pack isn't really for missions anymore since they all launch in one go and it takes 180 seconds to reload. 3 minutes in as eternity in combat - you can often finish a multi waypoint mission before you have reloaded! Try using other missiles. They are expensive, though, so load up on free ones where you can find them. There are lots of specialised missiles - experiment and see what works for you

You can use lasers and cannons separately with different fire buttons. Map them so that you can use them alternately without having to waste time switching. Use beam weapons to take shields down and particle cannons to do hull damage. Beam weapons do do a bit of damage to the hull, but using both weapons together depletes your energy much quicker:

Souce DaveK	Time in secs	-5/5	0/0	5/-5
IceSpear (C2)	B+P	10	7	5
	P	Infinite	25	12
Phantom (C15)	B+P	11	7½	6
	P	52	15	9
Note that the B+P times are very similar for C2 and C15 Particle Cannon! It's the cannon only times that are significantly different				

Make some money as soon as possible and then upgrade. Get good weapons, shields, and other upgrades as you can afford them. Advice on what is "good" is give elsewhere in the equipment section in this Volume and the general Opinion/discussion section in Volume 2.

Aim for the weapon system of my target - fighting with an enemy you just disarmed is easier.

Pressing "U" cycles between three possible systems that you can target on an enemy ship: wep, nav and eng. This applies to any ship, red, yellow or green, capital or non-capital. You can target these subsystems on any ship you want to shoot).

Mercenary is designed to encourage "flight ops"; this means doing contracts in SP with hired fleet ships, and in MP with other players.

When fighting multiple enemies try to match their speed whilst flying backwards (using Inertial Flight Mode) but keep it close enough that you can engage them as well. Use your Lateral (Manoeuvring) thrusters to coast left and right to stay out of their fire.(default A and D)

Combat Advice (against AI)

Contributed by Blackthorne :

<http://www.starwraith.com/forum/viewthread.php?tid=6388#pid88231>

Equipment - you can't hope to win a fight without it! Think weapons - defence - ship

Cannon - (edited) The Class 2 *Icespear* has a good balance between range (700) and the rate it depletes your energy. You can fire almost nonstop. The bigger guns cause more damage if you hit the target (a big *if* in combat) but drain energy so quickly you have to take evasive measure while they recharge. Because beam and particle weapons are linked, if the particle cannon has drained the energy, the beam doesn't work either.

Get the biggest beam you can find. (Class 5 is a Fusion Beam)

For emergencies, stack a few missiles. Oh, who am I kidding, this is your first fight. Fill those racks!

Next, let's get some additional equipment. You need countermeasures, preferably more than the default 25. You'll be tossing those left and right, trust me. Next, a repair system (Class 3; accept no substitutes. If it isn't in stock, build your own at one of the constructor stations), a x 5 Shield Booster (accept no substitute etc etc), a cannon relay (seriously, don't even try without one). and if possible a cannon heatsink

Next, optimize your craft for combat. You won't need excessive amounts of fuel or cargo space - so out with them! Invest the free space into stronger shields, a decent set of wings and a big engine. (Edit: Note though that a bigger engine doesn't increase your acceleration, only your top speed and even the smallest engine with IDS multiplier at x5 is far too fast for combat at full speed)

Okay. So your ship is ready for combat now. Your enemy is the AI: not very bright, but numerous, and willing to toss a small fortune in missiles at you. Pick a mission with a manageable number of opponents (4 is a good start) and NO capital ships (those are hard to kill, doubly so when their fighter escorts breathe down your neck).

(Edit) Military rank allows you to get better military frames that are better than the equivalent civilian frames for combat. You only raise your military rank by doing contracts in Military warzone (Talison Conflict and Sierra, Cerulean and Pearl Warzones

The AI has improved a bit (sneaky buggers spread out more and head for you), but they still can't handle lateral speed (sliding or strafing). Lock and approach the target of your choice, turn off the IDS and start using the sideway thrusters to build lateral speed as you approach. Also, use your particle cannon to get rid of the inbound missiles, and launch a few countermeasures if they get too close. Once you are in range, a targeting aid (IDMS) will appear and mark the point you need to fire at in order to hit your intended target.

Fire away. Most easier enemies can be finished off with just the particle guns (provided you got a beefy one, and not a peashooter), but you can use a beam gun to soften up the shields first - those things drain very little energy. Once the enemy has caught enough particle bolts, he'll explode. Rinse and repeat.

Particularly durable and annoying foes can warrant the use of a missile (or eight). It's best to kill the targets shields with a beam gun first, as missiles tend to cost money, and the ones with the big manly warheads are slow as molasses.

In case you get hit, reinforce the shield facing that got hit. Most particle salvos do little enough damage, so you usually have time to react. It's missiles that do nasty numbers on shield and hull, so try to avoid those.

If you find yourself in a fur-ball, micro-jumping might be an idea. Just set your jump point to a position slightly outside the mission - but be careful that it's still in the same sector. Once the manure starts flying, you can use F2 to get some distance. This has a (not so) slight drawback, however, you need to have full energy.

If you get killed in a shared MP contract, reload immediately and as soon as you enter the Universe hit the jump button - if you can get back before the fight finishes, you still get the points!

here's the K.I.S.S. version:

1. Don't use the IDS flight mode.
2. Build lateral speed.
3. Killing incoming missiles has priority over everything else
4. Don't bring a knife to a gunfight.
5. Watch your shields.
6. Run if necessary. Dead mercs don't get paid!

Combat Advice (against real pilots!)

Contributed by SeeJay

Combat against real pilots is very different to combat against AI. For one thing real pilots aren't confused by your sneaky sideways slips!. The best way of getting better at pVp is practice with better pilots. Join MP and usually someone has time to coach you and give you practice. The following advice will give you some good basic grounding

1 v 1:

- Use Inertia mode.
- Boost shields to front.
- Always point nose at enemy.
- Never fly directly at him, set course slightly off centre and strafe.
- Use Lasers to bring shields down and then switch to guns.
- Use guns in bursts. That increases the damage.
- Use missiles if necessary in close range. (Less respond time).
- If he/she is a good fighter, target the weapons first, then engine.
- Always be in motion.
- Always have an escape navpoint set before engaging.

1 v 2:

- Same as 1 v 1.
- Try to have both enemies in front of you in a line.
- Never let 1 in behind you when facing the other.
- Concentrate on taking out 1 target at a time.

1 v 3 or more:

- Same as 1 v 1.
- Same as 1 v 2.
- Fly in great circles around the group to split them up.

When Fighting as a group:

- Set a combat leader.
- He uses the combat commands.
- Fly in a pair with a wingman defending lead if necessary.
- If there is only 1 target, all engages.
- If there are multiple targets wingman defends (watch the 6) and lead engages if threat level is high.
- Or take 1 target each if the threat level is low.

Limited Directional Tracking (AI Combat)

You can run away from hostile ships much faster by travelling at high speed and turning off your IDS. While flying directly away at over 3000 with the IDS off can allow you to slowly escape, you can use other techniques to escape faster. AI ships can only monitor your forward velocity, so flying in a sideways direction can often cause them to slow down when they observe your forward velocity decrease. To maximize your escape rate, turn away from the ship(s) you want to escape from and increase your speed to 2000 or more. Turn off the IDS, then turn or pitch 90 degrees so your indicated forward velocity is near 0. The hostile ship(s) will usually slow down when they observe your forward velocity decrease. Note: Real pilots are a lot brighter!

How do I get (or be) a turret gunner?

Source: SeeJay's Evoxron Basics Schools - <http://www.junholt.se/evoschool/index.htm>

You can also link with another player as a gun turret operator for their ship. Simply click on the **Connect Gunner Binding** button in the trade console to activate. You will then be in control of a ball turret that surrounds the ship you've linked to while the receiving player will continue to be the pilot of their ship. Either you or the pilot player can click on the **Disconnect Gunner Binding** option to terminate the gun turret mode. When that happens, or if the pilot ship leaves the sector, you will be returned to your ship.

The turret gunner has the canon and beam weapons and all the weapons enhancing equipment installed on his or her ship. The turret can be rotated 360° and the pitch varied between +90° and -90°. You can see your shield strength and hull integrity.

You do not have missiles.

Are the rumours about a new weapons system true?

from Twilly Frost and a comment by zonaiko

Now that I've switched to a military frame I'm currently working on proprietary technology to add a flight crew externally. I will consider licensing out any breakthroughs for a nominal fee. Current iterations involve scuba gear, bungee cords, and heated blankets. Live trials thus far have met with minimal success, though the incessant banging on the hull by frightened crew serve as an adequate early warning system for incoming missiles. More Vonari "volunteers" needed for testing.

Zon: "I just shot orange juice out of my nose reading that!"

When should I fire my missiles?

I might seem sensible that if you launch missiles at long range the A.I. would have more time to use CMs and evade. However, the opposite is true, strangely enough. If you're too close to your target, his CMs will almost always defeat your missiles. A good range is around 1600-2100 - except for capital ships which don't use CMs therefore, the closer you get before launching, the better.

Are Excalibur Missile Packs the "bees' knees"?

If you have the patience (or you have the nerve to go back into the pack with only guns), outfit your ship with Excals. They recharge every three minutes and for free. Sounds a good deal, but . . . the Excalibur missile pack and regeneration system, takes up eight hardpoints. If you have only six available you cannot install one. (Phoenix or better have 8 hardpoints) Also it takes a whole 3 minutes to recharge at that recharge rate you better know what you are doing in very hostile territory.

How can I slow down quickly after I overshoot the furball?

Use Afterburner to reverse course really quickly

One of my current problems is that it takes me too long to kill the reds, because I take one pass through them, kill one, but I do it at a speed of 1500-1800 (so missiles cannot catch me), and it takes me up to a minute to reverse speed and build speed in the opposite direction; this means it's taking a lot of time to kill them, which means they get reinforcements, etc.

One excellent way to speed up is reverse course much faster with your afterburner! (Burns up a lot more fuel, but who cares, you should have enough)

Can I repair and reload during a contract?

Even in a multi WP mission, you can still jump back to the station and replenish your CMs? And you can refuel. You can manage your CMs more economically manually, but, at the same time, you tend to get hit by more missiles.

How can I avoid being hit by missiles

1. whilst flying in Inertial Mode, turn round and shoot the missiles down with your cannon
2. whilst flying in Inertial Mode, turn your engines and afterburner off and when the missile warning indicator turns red launch a couple of CM's
3. CM's don't work well when IDS is on or when your afterburners are on. When missiles are inbound try to use lateral (maneuvering) thrusters only.
4. at 1800-2000 mps, on inertial, you'll usually zip right past enemy missiles (except those headed nose-on). Use your afterburner to reverse course
5. outrun them if you don't want to fight (perhaps you're just "passing through")
6. fit an Auto CM Launcher (ACML) and/or an Antimissile System (AMS)

Most times the missiles will speed past you and all you have to do is turn around and fly backwards shooting the missiles down or use your CM's. Once you shoot down most of the missiles then try dog fighting one on one. Launch CM only when the missile is getting close (the missile indicators turn red, and the warning klaxon's pitch changes), then release 2-3. If successful, the indicator should disappear, along with the warning sound. You don't have to spam countermeasures though, if you time them right you only need 1 per missile, but shooting down most missiles is the best thing to do, and if one or two happen to get near you pop out a countermeasure at the right time to make it go away.

What's the difference between an Auto CM Launcher (ACML) & an Antimissile System (AMS)?

If you fit an Auto CM Launcher, it deploys CMs automatically when a missile is near to a strike on you. The anti-missile system locks on to a target to fire a beam weapon at it. So the difference is that a Auto-CM drops CM automatically while Anti-missile shoots them down.

Some people love these systems, some hate them:

"The Auto CM Launcher is brilliant. I can dive into the middle of a crowd of Vons, say 7 of them, completely ignore their missiles, take the lot out with gunfire and not have a scratch on my ship at the end of it. Usually have about 35CMs, out of 100, left. It's like shooting ducks in a barrel."

"Auto-CM's great if you aren't good at or comfortable with your CM usage but generally it works against you in every way. An Auto CM Launcher will function fine, dropping CM's when a missile gets close **but** you won't be paying attention therefore you'll end still using your engines and/or afterburner. The missiles will lock onto your engines and ignore the CM's, thus negating the entire concept."

"If you don't carry a high amount of CM's your Auto CM Launcher can waste a lot of them and you can end up relying on it only to find out it's used all your CM's and sadly it doesn't have a "low CM" warning to tell you to high tail it back to the nearest station."

"The Anti-Missile System is awesome **but** heavily reliant on your positioning and speed - two factors that you may not always have great control of in the heat of battle. Positioning in that certain angles of your ship have a higher coverage/shooting arc and speed in that it takes time to shoot down the missiles so if you aren't going fast enough to give it sufficient time the missiles will impact. It works automatically and doesn't run out of firepower!"

Why doesn't my beam weapons seem to damage my opponents shields?

Vice: The MDTs must be on and locked for beam weapons to 'harmonize' properly for effective shield damage (which is primarily what they are used for). Unharmonized, beam weapons won't inflict shield damage.

What this means:

beams are useless without MDTs in player v player. Currently with MDTs off, beams will only do shield damage to AI ships.

The following section is a detailed analysis of the effectiveness of particle and beam weapons separately and in combination

What is the best cannon/beam combination?/Cannon performance

All of the tests used a Class 5 Fusion beam weapon. A Class 2 Icespear, Class 8 Maxim-R and Class 14 Phantom particle cannon were tested as the second part of the combo's. All timings were repeated until a consistent result was achieved.

Part 1: Energy Use Efficiency

The first data table shows how quickly (or not!) the weapons deleted the energy reserves.

Cannon timings to use up energy in seconds

All tests used Class 5 Fusion Beam. Ship equipped with Cannon Heatsink and Cannon Relay Shield/Weapon energy distribution was changed between tests (-5/+5 - 0/0 - +5/-5)

		beam	particle	both
Class 2	Icespear	"-5/5"	infinite	infinite
		"0/0"	infinite	30 slows
		"5/-5"	18	13

Class 8	Maxim-R	"-5/5"	infinite	50	10
		"0/0"	>900	15 slows	7
		"5/-5"	24	9	6

Class 14	Phantom	"-5/5"	infinite	75 slows	12
		"0/0"	infinite	15	8
		"5/-5"	45	9	6

1. *infinite* means that the weapon energy recharge was faster than the weapon energy usage
2. >900 extrapolated from the time required for the weapon energy reading to drop to 90%. It is *infinite* in practice!
3. *slows* signifies that the energy dropped to around 10% in the time shown, after which the weapon firing rate slowed ***but only by a small amount***

Conclusions:

- at an energy balance setting of 0/0 or better for weapons, beam weapons don't "run out" - they recharge faster than they use the energy (The Fusion is the highest class beam weapon)
- at an energy balance setting of 0/0 or better for weapons the Icespear and Maxim-R ***effectively*** don't delete the energy reserve; the slowing of the firing rate at the end is quite small.
- at an energy balance setting of -5/+5 the Phantom ***effectively*** doesn't delete the energy reserve; the slowing of the firing rate after 75 seconds is quite small.
- using the combo deletes the energy reserve very significantly faster than the results for the particle cannon alone would predict. The effect of changing the energy balance is much less for the combo than for the particle cannon than might be expected.
- The combo would have to be far more effective than the particle cannon alone to compensate for its rapid energy depletion rate

Part 2: Kill Efficiency

Series 1: Thanks to Marvin who patiently sat there for the first series of tests and got blown up multiple times and confirmed many of the timings

Cannon timings to kill in seconds

Avenger target used "0/0" shield/weapon energy balance with Class 10 shield and x5 Shield Booster - Class 3 Repair System

Attacker: C2 Icespear/C5 Fusion combo; Cannon Heatsink and Cannon Relay

	range	beam	particle	both
Icespear (Class 2)	90	60	12	8
	300	60	14	8
	670	60	15	8

There was a few second delay before the shield's barchart in the target view and the hull integrity reading started to fall. Both dropped together in all cases

Conclusions:

- beam weapons don't damage shields exclusively - they also damage hulls at the same time
- beam weapons take a **very** long time to achieve a kill relative to particle cannon or the combo
- the combo kills significantly faster than the particle cannon alone - 30% to 50% faster. However you need to look at the energy efficiency results and decide whether the faster kill for the combo compensates for the much more rapid energy usage.
- range makes a small difference to particle cannon but not to beam or the combo

To check for repeatability and to try different particle cannon a second series of tests were planned.

Series 2: Thanks to Faemon who patiently sat there for the second series of tests and got blown up multiple times without complaint!

Cannon timings to kill in seconds

Starmaster target used "0/0" shield/weapon energy balance with Class 10 shield and a x5 shield booster- Class 3 Repair System

Attacker: C2 Icespear **or** C8 Maxim-R **or** C14 Phantom/C5 Fusion combo; Cannon Heatsink and Cannon Relay

Icespear	range	beam	particle	both
	90	no kill	10	10
	300	no kill	10	10
	670	no kill	10	10

Maxim-R	range	beam	particle	both
	90	no kill	11	11
	300	no kill	11	12
	670	no kill	12.5	15

Phantom	range	beam	particle	both
	90	no kill	14	14
	300	no kill	13	13.5
	500	no kill	13	14

1. *no kill* means that either no damage to shields or hull was observed or that the repair system repaired the shield/hull damage faster than the weapon inflicted damage and the shields indicated some damage that was repaired and then more damage that was repaired and so on
2. combo timings in red mean that the weapons depleted the energy reserve a few seconds before the kill but continued firing at the slower rate

Conclusions

- the frame makes a difference; Using a C5 Fusion beam weapon alone, the Avenger (Armour 270) went down in 60 secs, but the Starmaster (Armour 300) hasn't been touched;
- there is no difference in how quickly the particle cannon alone and the combo can take down the Starmaster
- range appears to make no significant difference to either the particle cannon or the combo
- It is very surprising that the Icespear is the quickest to take down the Starmaster either alone or in the combo given it's lower yield. The effectiveness appears to be related to the cycle rate (120 for the Icespear, 100 for the Maxim and 90 for the Phantom)

Overall Conclusion

When the new extension module is released there will be a weapon tuning system available. In the meantime there are a number of factors to consider and balance. You may or may not agree with the following points - that's all part of the fun of the game!

- a beam weapon by itself is not worth using - it is slow to kill or is unable to kill at all (at least if your opponent has a C3 Repair Unit installed)
- a beam weapons doesn't just kill shields - it takes down the hull at the same time
- all three particle canon won't run out of energy as long as the weapon/shield balance is even (0/0) or favours weapons.
- The combo uses energy far more rapidly than you would expect from the rate of use of the canons used separately; However the combo does take down an opponent more quickly. If you are not facing a large number of and can take down an opponent before you use up the energy reserve then a combo is effective - however you risk having to wait for the recharge.
- Using the combo means that with MTLD active you will get beam hits all the time. However, beam weapons aren't very effective. Using the particle weapon alone will let you fire longer, but not all your shots will hit. Whether you use a combo or just the particle cannon will depend on your proficiency and combat styles, as well as the number of opponents and whether they are AI or real

When I started this bit of research I was fairly convinced by experience that beams were not "shield killers". I thought that when firing the combo most of the energy drain was due to the particle cannon. I suspected that there would be a clear cut conclusion that you dump the beam and save all the energy for the particle cannon, which would have taken some of the fun away from the game because weapon choice would be much simpler

Instead I find that a beam alone is a waste of time, that particle alone can give unlimited fire time even with high class cannon and that a combo, though energy use intensive, is more destructive - there is still lots of choices to be made!!

Finally - these tests were carried out between two stationary ships - combat is a whole different ball game, but at least now you have some hard data rather than just hearsay to base your decisions on!

Discussion/Opinion: Combat

Source: SeeJay's Evoxron Basics Schools - <http://www.junholt.se/evoschool/index.htm>

- To fight multiple enemies make sure that you pick one target in the "edge" of the group.
- Point your nose slightly off target so that you don't fly directly at him.
- Make sure you have MDTs On. That helps you with targeting.
- Engage Inertia mode, that makes your heat signature much smaller.
- Always keep your nose on target.
- When in firing range, use Lasers to bring down his shields and then switch to Guns for maximum hull damage.
- You can switch between targeting Engines, Navigation and Weapons with "U" (default).
- Continue strafing the target and pick them off one by one.
- Remain in Inertia mode and use afterburner if needed to.
- Take care of incoming missiles with either dispatching CM:s or using your guns.

Using manoeuvring skills in combat (Inertia/IDS)

Source: SeeJay's Evoxron Basics Schools - <http://www.junholt.se/evoschool/index.htm>

The basic principle of inertia is that in Space there is no friction to stop or slow down a moving object.

So once your ship is in motion in space it will stay in motion unless you apply an opposite force using thrusters to slow you down or change direction. Combat comes down to managing your speed, drift and direction to control your distance and approach angle to your target and there is not one way since it depends on what your target is using for strategies! So to give a step by step for each situation would be nearly impossible. Probably the easiest way to train yourself in using it is to concentrate exclusively on forward thruster and afterburner.

- * Engage Inertial mode.
- * Pick out an object in space that's stationary.
- * Turn your ship and point at the object.
- * Fire your afterburners until you reach about 1000 mps.
- * Try to keep your nose pointed at the object.
- * After you pass it, fire your afterburners again until your speed is zero.
- * Now repeat, only this time watch the drift readouts displayed directly above your radar screen.
- * Turn your ship until those drift readouts approach zero.

To change direction, you first need to apply thrust against your current direction. Then your ship will begin moving in the new direction. Until then, you will continue to drift in the original direction, at the speed you were at when disengaging afterburner.

Doing laps around a stationary object, such as a station, with IDS off is a useful drill to work on these skills. In no time, you'll be able to do controlled, 3D orbits of the station inside an imaginary sphere.

Another way to practice is to set a Nav Point and turning around the Nav point in circles trying to keep a very short constant distance between yourself and the Nav Point with your nose Pointing at the Nav Point and firing your Weapons at the Nav Point.

Applying It To Combat:

The thing to keep in mind is that when your drifting in a certain direction at a speed of 1900 that no missile will be able to hit you since the fastest missile, the Excalibur, speed is 1800! So you have to know the speeds of your missiles and the speed of your target to know if a missile is going to be effective and shoot the missile at close range so that the enemy does not have a chance to deploy counter measures. So the basic steps are:

1. You set a course for your target if your Target is an AI at a velocity of 1500 or more for faster approach (because AI do not use Excaliburs)
2. Once you have your approach angle set switch to inertia at the desired speed once you get in the desired targeting range for missiles or weapons fire the desired weapons.
3. Sometimes a target uses a spiral evasive manoeuvre. The fastest way to take this one down is to get as close as you can on its six, with IDS on and using after burner, to 50 to 300 units and maintain this distance while firing your missiles and or your weapons with energy to all weapons!

Opinion: Combat Advice (against AI)

Contributed by Blackthorne and additions by several others

Equipment - you can't hope to win a fight without it! Think weapons - defence - ship

Cannon - (edited) The Class 2 *Icespear* has a good balance between range (700) and the rate it depletes your energy. You can fire almost nonstop. The bigger guns cause more damage if you hit the target (a big **if** in combat) but drain energy so quickly you have to take evasive measure while they recharge. Because beam and particle weapons are linked, if the particle cannon has drained the energy, the beam doesn't work either.

Get the biggest beam you can find. (Class 5 is a Fusion Beam)

For emergencies, stack a few missiles. Oh, who am I kidding, this is your first fight. Fill those racks!

Next, let's get some additional equipment. You need countermeasures, preferably more than the default 25. You'll be tossing those left and right, trust me. Next, a repair system (Class 3; accept no substitutes. If it isn't in stock, build your own at one of the constructor stations), a x 5 Shield Booster (accept no substitute etc etc), a cannon relay (seriously, don't even try without one). and if possible a cannon heatsink

Next, optimize your craft for combat. You won't need excessive amounts of fuel or cargo space - so out with them! Invest the free space into stronger shields, a decent set of wings and a big engine. (Edit: Note though that a bigger engine doesn't increase your acceleration, only your top speed and even the smallest engine with IDS multiplier at x5 is far too fast for combat at full speed)

Okay. So your ship is ready for combat now. Your enemy is the AI: not very bright, but numerous, and willing to toss a small fortune in missiles at you. Pick a mission with a manageable number of opponents (4 is a good start) and NO capital ships (those are hard to kill, doubly so when their fighter escorts breathe down your neck).

(Edit) Military rank allows you to get better military frames that are better than the equivalent civilian frames for combat. You only raise your military rank by doing contracts in Military warzone (Talison Conflict and Sierra, Cerulean and Pearl Warzones

The AI has improved a bit (sneaky buggers spread out more and head for you), but they still can't handle lateral speed (sliding or strafing). Lock and approach the target of your choice, turn off the IDS and start using the sideway thrusters to build lateral speed as you approach. Also, use your particle cannon to get rid of the inbound missiles, and launch a few countermeasures if they get too close. Once you are in range, a targeting aid (IDMS)will appear and mark the point you need to fire at in order to hit your intended target.

Fire away. Most easier enemies can be finished off with just the particle guns (provided you got a beefy one, and not a peashooter), but you can use a beam gun to soften up the shields first - those things drain very little energy. Once the enemy has caught enough particle bolts, he'll explode. Rinse and repeat.

Particularly durable and annoying foes can warrant the use of a missile (or eight). It's best to kill the targets shields with a beam gun first, as missiles tend to cost money, and the ones with the big manly warheads are slow as molasses.

In case you get hit, reinforce the shield facing that got hit. Most particle salvos do little enough damage, so you usually have time to react. It's missiles that do nasty numbers on shield and hull, so try to avoid those.

If you find yourself in a fur-ball, micro-jumping might be an idea. Just set your jump point to a position slightly outside the mission - but be careful that it's still in the same sector. Once the manure starts flying, you can use F2 to get some distance. This has a (not so) slight drawback, however, you need to have full energy.

If you get killed in a shared MP contract, reload immediately and as soon as you enter the Universe hit the jump button - if you can get back before the fight finishes, you still get the points!

here's the K.I.S.S. version:

1. Don't use the IDS flight mode.
2. Build lateral speed.
3. Killing incoming missiles has priority over everything else
4. Don't bring a knife to a gunfight.
5. Watch your shields.
6. Run if necessary. Dead mercs don't get paid!

Discussion: about combat problems and solutions

I feel like I've got to be absolutely missing something in combat. You get missions where you're fighting 10+ enemies, especially in a hostile system and I just can't seem to manage it. I've got a Starmaster, Maxed engine, shields, etc. everything except cargo pretty much. Maxim-R, Fusion Laser, Mantis Drive, Shield Regenerator, Anti-Missile System, 5x shield booster, Canon Relay, 8x Exodus missiles.

I've tried the regular run-and-gun (went as well as expected), I've tried long runs past each other at around 1200-1800 inertia sliding past and shooting, I've tried what I've dubbed the 'mine's longer' approach of running away at around 550-650, spinning around in inertia and sniping with just canons at around 750.

At best I end up shooting down 50-100 missiles and in one instance over 20 ships. The problem being that more show up faster than I can kill them and the constant, steady stream of missiles makes it impossible to do much but dodge, spin and shoot.

Is my loadout wrong? My approach? Is there some tactical approach I'm missing? Do I need to recruit or hire a fleet of ships to do these missions? I've got 70 million in the bank and if I had a need could trade up more. I've wasted a whole day of my life at this point on the IMG mission where you're supposed to kill an ace and the wing of ships with him. I confess that I'm getting pretty frustrated.

You could try hiring some wingmen, they will help take some of the fire away from you and dish it back out to the reds. If you're on SP, select a friendly AI and press F4 - you should be able to request them to join you as a wingman for a fee...

I've found the anti-missile system next to useless. Instead, I use the auto CM launcher. A missile load of 8 Exodus missiles should thin down the red crowd. Use your reverse thrust, and inertial, to keep your ship around the 2500 distance from the nearest red (Alt R), and, then pick them off one at a time - you can finish the residue off with gunfire.

If you set your reverse speed to around 10/1100 units the enemy missiles can't reach you!

Thank you. I suspect the anti-missile system is more harm than help, it's draining my weapon power. I'll give the auto CM a try but I'm doing okay with manual. I managed to get past that mission by just re-doing it until it was only 6 or 7 enemies. Any more than that and I just can't seem to keep up.

Is there a better ship design? The military ships, the faster and more manoeuvrable ones, are they better or worse?

But, as concerns military ships versus civilian ships, about the only advantage to military is a tighter turn radius and faster turn rate and increased acceleration. Civvy ships can now compensate for most of their previous shortcomings ... thanks to the "thrust multiplier" and reconfiguration options.

I was going to mention the CMs. Manual is the best way not to waste energy and CMs unnecessarily. It takes a lot of practice and skill to get to a level to be able to manage 20 enemies at a time. Also if you are out of CMs in the middle of a 10 enemy mission do not drop your inertial speed below 1800 and do not turn IDS on. Jump back to contract station to reload CM's and make ship repairs as needed before jumping back to contract waypoint to finish up the contract. Remember you can reload and replenish supplies in middle of combat contract missions as long as you dock at any Station in the sector and do not leave the sector to do so

For offline play I suggest you hire some wingman and attack in force

(This seems to be quite important, it appears that wingmen might indeed make a difference and you don't get as swarmed as if you were on your own; if nothing else, they draw some fire from you, but maybe they can also actually kill some enemies. Either way, since a lot of the time it seems there are just TOO MANY enemies - and constantly bringing reinforcements faster than you can kill them, just bring some wingmen).

SAVE BEFORE TAKING A CONTRACT

Make certain you save before taking a contract. Else, you will get a short message (usually overlooked) telling you it's a no-go for saving in the middle of a contract. And most of the time you'll get a few minutes after starting a contract to kill all the enemy ships. But it always seems that, just as they're running out of missiles (so you can get up close and personal), that's when reinforcements show up. You still only need to kill the agreed upon number of Reds but those new guys usually mean: more missiles are on the way.

I've tried the regular run-and-gun (went as well as expected), I've tried long runs past each other at around 1200-1800 inertia sliding past and shooting, I've tried what I've dubbed the 'mine's longer' approach of running away at around 550-650, spinning around in inertia and sniping with just canons at around 750.

I find I can usually handle about 10 reds at once by myself but more than that and I need backup. I subscribe to the "jousting" school of combat where I make multiple head on passes until everything is space dust. The key is to stay in inertial and use manoeuvring thrusters to "slide" past them...which it sounds like you got the hang of. Remember that the enemy does not have unlimited missiles (at least I don't think they do) so my first few passes will just be to focus on shooting down incoming missiles and avoiding cannon fire while shooting off a couple missiles of my own to thin the ranks. Once the incoming missile numbers drop to 1 or 2 a pass I start focusing on taking out each ship.

Also IMO bigger isn't necessarily better. I hate the Starmaster. It handles like a truck and even with maxed engines it's acceleration stinks. Ophi on the MP server was kind enough to point me to the Legacy, which handles quite nicely and is still a "big" ship. Personal preferences vary however.

Another contribution: You just need to be more alert. Don't attack anything but "Red's". When you start your attack run, come in fast at a tangent to the target. Keep your speed up, it is your primary self defence weapon. Let him waste his missiles, wait till they close on you, then turn at right angles to the incoming missiles and start dropping CM's like there was no tomorrow. You can also try to shoot down the missiles. Then close on your primary target as fast as you can blasting all the way. When you pick one target, stay with it till it's killed.

Remember, "speed" is your best friend.

Now before anyone criticizes my suggested tactics, I admit it's just one of many attack possibilities and there are variations on all of them. Just keep your speed up, use your IDS to your advantage whenever possible, stay aggressive and don't switch targets till it's destroyed.

Opinion: How I tackle combat by Blackthorne

My usual approach is this:

I enter the jump point on inertial, and immediately built up lateral speed (700-1200 m/s) by using the starboard or portside thrusters (A and D respectively), moving me away from the enemy pack. Then I fire the afterburners until I approach the enemy at about 1400-1600 m/s. At that point, I drift towards the pack. Any incoming missiles can be shot down or deflected with CM, since my thrusters are cold, and changing my heading no longer changes my approach vector or fires any thrusters.

Once the pack enters weapon range, I pick a target at random (I usually go for the weak frames first, since they die quickly and then no longer pose a threat), using beams and particle guns in unison to quickly dispatch of it. Any missiles at that point are deflected with CMs, since I can't spare any energy from the main guns. With a bit of experience, you can actually judge from the proximity alert how close a missile is, and then trigger the CM accordingly. Should the target break away, I'll fire the afterburners and give chase, liberally using the lateral thrusters to maintain a sideward vector.

If you find yourself running short on energy, switch to particle only mode - that way you'll get more shots out of your gun.

(B=beam weapon; P=particle cannon; *all times in seconds*; 5/-5=energy balance between shields and weapons)

		-5/5	0/0	5/-5
IceSpear (C2)	B+P	10	7	5
	P only	Infinite	25	12
Phantom (C15)	B+P	11	7,5	6
	P only	52	15	9

At this point, it becomes a series of jousts - optimally, you'll get rid of one bogey each pass, and if you toss a few missiles at point blank, you can easily decimate the pack by 2 or even three ships. Of course, you ought to pick the right missiles for the job.

Missiles have 3 stats, (Y)ield, (S)peed and R(ange). Yield is the destructive power, the higher the better. Speed is the top speed of the missile as it approaches its target, and Range is the maximum range you can lock a target at. The higher yield missiles are usually slower and have less range, but in the field, you'll launch them at very close ranges, anyways, to prevent the enemy from shooting them down.

My usual go-to missile is the Exodus, it's beefy enough to kill anything smaller than a Vonari-Bomber in one hit. They're available at a variety of places. A Starfire missile will perform adequately in the easier systems, and can be found nearly everywhere.

As for the combat loadout, you'll want the following setup:

- A hull you're comfortable with. Everyone has a slightly different preference as far as this is concerned, but a medium-sized hull should do nicely.
- A cannon relay system. This one doubles your energy banks, and improves the rate of fire. It's a no-brainer choice when it comes to killing things.
- A repair unit (Class 3, preferably), as it slowly repairs damage you have suffered, and quite rapidly fixes subsystem damage.
- A shield booster (Class 5, preferably). Think of it as a battery you can draw from while you restore your shield facings.

Both of these can be built at an constructor station - you'll need 25 mechanical parts and 25 hydrogen units.

As far as the hull setup is concerned, optimize for combat:

1. Get rid of superfluous crew positions. A science officer or navigator don't improve your fighting ability, but they take away 2 slots which could be used for more equipment or more missiles. A weapons officer is nice, but not absolutely necessary, and the same goes for the engineer.
2. Keep fuel to a necessary minimum. 800 units are usually plenty for a single combat, especially on the smaller frames.
3. Cargo bays are nice, but they don't improve combat prowess. Even worse, they slow you down when you're full. Ideally, you'll have no cargo bays on a combat-optimized craft.
4. Wings make you manoeuvrable. Try the different sizes and pick the smallest set that still feels responsive enough. Too much wing system and your craft becomes temperamental and hard to control.
5. Invest the assembly points you have freed up into shields (Class 7 is a good starting point) and engines, as speed is life. You'll have a much easier time manoeuvring, and the stronger shields mean you can make an extra mistake or two.

Make sure your ship has enough countermeasures. 100 is nice, 50 will do in a pinch, 25 will only last you for the shortest of engagements. 0 is suicidal. Also, stock up on missiles. The warzone stations usually offer a nice selection, and are relatively safe to reach.

Opinion: How I tackle combat II

As others have pointed out I'll hint on a few things.

First off when you jump always pick a direction and burn hard towards it. If they launch volley's of missiles as soon as they get into the red range stop burning and go into or BE into inertial mode. The reasoning behind this is the simulator factor. This game being a simulation means that as it would in real life most missile systems work off the highest "grab" factor possible. In most cases in this game (And in real life) the biggest thing for a missile to lock onto is heat. The biggest heat generator in the game will be your afterburners. Next to that your IDS. Next to that any of your weapon systems. However don't let that fool you into thinking if you go a drift and have nothing firing that missiles won't lock onto you cause they most certainly will. They'll simply switch to the next "grab" which could be your movement based off common radar.

Now I say all that because that's why in combat if you have IDS on and/or you are burning your afterburners you can launch as many CM's as you want chances are it will do very little to deter missiles because your secondary bull's-eye that you're throwing out (aka CM) is nowhere near as bright as the nice red hot engines from your ship.

Now that being said you've picked up on one aspect that is amazing in this game and that is shooting down missiles. Use it... love it. But don't rely on it and it alone. Especially not if and when the enemy is within 1000 clicks of you because you'll get within gun range and if they start pounding you with their guns you will have a really hard time shooting down missiles as your ship will be getting knocked around.

Opinion: How I tackle combat III

The game does not go from easy to impossible, but quite often mistakes are rewarded with instant death. Here is my list of advice to help you follow the natural curve of the game (rather than doing the equivalent of jumping into a high level dungeon with a new character in an RPG):

Get a fleet. Hiring a fleet is cheap considering you don't have to buy missiles your fleet mates fire. Have 15 of them hired at all times and you will burn through the contracts. Just remember to have them reload (or save the game and load, same effect) between contracts. To hire fleet mates just fly up to within 1000m of green ship (or a red ship if you want to bribe them) and open the ship-to-ship trade console (default F4). Down the bottom right is the hire fleet button. Bargain at 63,000 a pop. However, I think wing mates make it too easy so here are some more tips you can use to solo it and improve your skills, though they also apply to flying with a fleet. Unless you have something against fleets like me, use them.

Never turn off inertial mode while in combat. It has been mentioned a couple of times in this thread to use inertial mode rather than IDS while in combat. I would like to make it explicit that you should **completely avoid** IDS while in combat, do not switch out of inertial mode. The AI has a much easier time hitting you if you are in range and are moving at much below 1000m/s. Your overall speed should never drop below this (because your velocity is broken down into x-y-z components if you have $1000/(3^{0.5})=577$ m/s x,y and z velocity components your overall velocity is about 1000m/s). This applies to guns as well as missiles, you can sail through the middle of a cluster of AI ships without adjusting your velocity at all and have none of their guns hit you even with 10 or so in gun range and firing at you. You should never die to enemy guns, missiles are what you have to worry about.

Make the AI waste missiles. While you are getting the hang of keeping your velocity up you will find you spend most of your time heading almost directly away from the AI because they chase you. Notice that they will keep firing missiles at you even though they have no chance of hitting unless you alter velocity drastically. The AI don't have infinite missiles so anything they waste like this can help tone down the missile craziness when you make a pass. Start trying to get a rhythm where you are using this time to recharge your weapons.

The AI always uses IDS, use this to your advantage. Once you are a little distance away you can slow down to a bit above or to their IDS speed and they will happily maintain their distance from you until the cows come home. They will continue to fire missiles at you until they run out or you get out of range. If you have the patience and you are in a sector where random contract unrelated reds don't keep popping up you can just wait for them to run out. Most importantly when damaged use this method to let your repair system C3 repair the component damage and as much of the armour damage as you have the patience to wait for.

Get a repair system C3. Try to get comfortable with using your inertial thrusters when your afterburner stops working due to damage. That way you can survive long enough to let the repair system do its work. You can just let them kill you or self destruct after a missile hit if you don't have the patience or can't spare the equipment slot, but I find a dead is dead approach is more fun in this case.

Abuse the afterburners. Except for multi waypoint patrol contracts even the small fuel tanks have enough to hold down the afterburner almost constantly without running out during a fight. At the moment the forward and reverse inertial thrust are weak compared to the lateral and vertical ones. This will be fixed in a patch. Until then never use forward inertial thrust, used the afterburner instead. Try to practice not letting your velocity drop too much while using afterburners. You are really vulnerable up to 1000 m/s. If you are going backwards and you afterburn to reverse direction you need to keep lateral and vertical velocity up (or be at a decent range) to avoid having a window of a few seconds when the AI missiles and guns have an easy time hitting you.

Learn to use CMs. As long as you stop using afterburner for the brief instant you fire the CM it will be pretty effective. CMs are almost 100% effective if you are not changing your velocity and you time it right. The right time is when the range indicator is red with just a little bit of bar left. It takes a while to get the hang of it but if you follow points 2 and 3 you will encounter a lot of missiles that are very slowly gaining on you. That gives you plenty of time to practice finding the butter zone for CMs. When you get good at it you can reliably dispatch a missile with 1 CM in most circumstances.

Use the cannon relay system. This doubles your weapons energy reserve and the weapons energy recharge rate, enough said.

Use the highest shield boost that you have encountered. At your stage you should have at least a x3 or a x4. Get a shield boost x5 ASAP.

Fit the biggest shield and wing systems. Try to have shields and engines at similar levels if you are in a small frame. Some of the levels are relatively better than others, compare the different levels and pick ones that give more bang for your buck. You don't need cargo bays or big fuel tanks for combat and on the smaller frames turning is fast enough with a basic wing system.

Get a maxim IR cannon and the best laser you have encountered. Your laser range is determined by your cannon and the maxim has one of the longest ranges. You can then out-range your enemies

and gives you more time to fire during a pass. It will also be enough to drain your energy pretty quickly. The maxim is a good choice until you get access to the best cannons.

Learn to use the different fire modes. Dedicated buttons are better but for AI dedicated buttons or cycling the weapons mode are both fine. Check elsewhere in the forums for details about managing your weapons energy.

Get yourself to a war zone. The name sounds intimidating, but they are actually much safer than hostile sectors. Then you can start doing military missions and get access to the military frames. I would advise renting a hanger in the war zone and getting a military frame. Military frames all have level 10 shield, engine and wing sys along with 99 CMs, 8 hardpoints and better agility. You can then swap between the ships for different contract types. In war zones there are two non combat mission types. Lost item just needs you to head to a nav point and go to the container, easy and quick with a cargo scanner (preferably C5). **Edit: These count towards your rank just as like combat missions do. But a seven waypoint, 84 fighter patrol will give you more points for the single mission because you get a point for each waypoint plus a point for each ten kills that you manage (shared kills don't count - you have to be the one who fires the killing shot!- succeed and you will get a minimum of 7 points and possibly 8 or 9 if you are a fighter jock!).** Recovering escape pods requires a tractor beam and a cargo bay, also easy money. War zones also have some of the better equipment and frames available. Even if you don't want to do military missions you can still get the first military frame straight away, much better choice for the IMG combat missions than the loadout you described.

Pick your contracts. Think nothing of saving and then self destructing (I think the quickest way to reload since it avoids the loading progress bar) to generate a new set of contracts. The game randomly generates contracts on load. Contrary to what you said earlier the game did not make it easier for you because you failed, it was just the luck of the draw. Reloading slightly annoying but necessary for me because only a small number of contracts/items for sale are generated. If you want a particular kind of work it is the quickest way to get it. You can also use this to make the IMG quests easier. I got up to 150 military missions (allowing me to purchase all military ships including the Enoch-E, probably the frame you want for hardcore combat) doing nothing but lost item, escape pod and spy missions. Spy mission btw are scary fun and really good practice for using CMs, keeping your velocity up and keeping in range of a target. Orbit them using afterburners and keep within 1500m (of the centre of the ship) for 60 seconds while locked on to them, much more fun than using a stealth device. Even if you just do the lost item and escape pod missions by the time you reach 150 missions (4-6 hours, your results may vary) you will have made over 10 million. More than enough to finish the IMG missions and get some real walking around money.

Do non combat contracts until you have decent kit. While you can actively seek combat contracts (ie not just IMG missions) at your stage in the game you are making it harder for yourself than necessary. This is fine if that is what you want to do. It is like being a dedicated miner or trader. It takes longer and is more difficult than the most efficient route to getting a top tier loadout. And, combat is far harder than mining or trading. As a way to get the best stuff I can only recommend it for veterans of the Enoch series. I kick AI posterior in Legends but I almost completely avoided combat in Mercenary until I had finished the IMG quest. If I had dedicated myself to combat missions rather than getting on with it I would probably still be saving for a Starmaster plus kit rather than getting one in the first day of play (and that is with getting 150 military missions before finishing the IMG quest).

Do the main IMG quests ASAP, where ASAP is as soon as you have good enough kit to complete the mission not as soon as you complete the previous contract. Hire a fleet of 15 ships and reload until the number of fighters is manageable, they will make short work of all the missions. The reward is

worth it and then you can go into combat with the best equipment the Evoxuniverse has to offer.

If you want to make combat really easy, get an Excalibur pack from a war zone. Then let the enemy chase you and wait for Excalibur missiles to reload.

Opinion: Combat - personal style

- when you reach the pack be at 1800 mps; fastest missile (Excalibur) has a speed of 1800, so if you're never slower than 1800, no missiles can hit you.
- If you fly at 1800, even through the middle of the pack, you will **not** get hit by missiles - you're simply flying too fast for them, even the ones that come head-on towards you. I did the last IMG mission killing 3 waypoints x 11 fighters at each; never used any CMs, or any missiles. This style is slow, but safe and sure.
- fly towards the pack, building speed up to 1800 mps; some lateral drift is ok, but too much will make you have very little time on target
- when reaching within target range, shoot; as you pass by your target, you can turn 180 degrees as quickly as you can and fire a couple more rounds (you won't have time for more, as because of the speed difference, and the time it takes you to turn in a slow ship, the target will be out of range; mil ships will obviously fare much better). As you turn, you'll now be at approx. -1800 mps; if you're flying slower than that, increase your negative speed; as long as you're at least -1800 mps, missiles won't catch you. If you think the enemies don't have Excaliburs, you can try 1600 instead, giving you more time spent within target range. If you had built up to a speed of 1800 before you reached the pack, 90% of the time you won't have to worry about it because after you turn you'll be at -1800 or even better, so you won't have to manoeuvre and you can focus your entire attention on shooting.
- when you're at about 2600-2700 meters away from the enemy, you can start accelerating back towards the pack; if you start before you're that far, you won't have time to build up enough acceleration by the time you get close to the pack, and their missiles will hit you; if you go farther than 3000 meters, you'll give too much time to the enemy to re-power shields and repair his ship. These figures are based **exclusively** on accelerating with your thrusters, and **not** using your afterburner. Obviously, if you use your afterburner, you can accelerate **much** faster, and you don't need to wait until you reach a distance of 2700. But I haven't done this much, so I don't have the figures.
- However, when using the afterburner you should keep in mind that:
 - it uses up much more fuel; normally not an issue, since you can (and should) dock at a station during missions for refuelling and restocking missiles.
 - it eats up your energy **fast**; the problem is that you will run out of energy well before you've built up any decent speed (even with energy bias +5 towards weapons), so now you're up to some small negative or positive speed, and in range of the pack's missiles, and you're screwed. Accelerating with thrusters (not with afterburner) is very slow, much slower than afterburner.
- So the scenarios you can find yourself in are:
 - you use up the afterburner as soon as you can, and you run out of energy before reaching your intended 1800 speed; now you're within range of the pack's missiles, and forced to use your thrusters to continue building speed, but because you're still moving relatively slow, you **will** get hit by missiles.
 - you use thrusters and only use afterburner in the latter stages (when you get closer to the pack), or you try to use the afterburner as much as you can (i.e., as soon as your energy gets above zero). The problem with this is that you will reach the pack without energy, so you don't have energy to actually shoot at your target.

- So using the afterburner is not as great as it sounds, and it might not gain you much anyway.
- Also be aware that while drifting away from the pack and building up speed, you might get within range of a cap ship's missiles, which you'll be vulnerable to because you're flying very slowly (small negative or positive speeds). Cap ships don't stay ***within*** the pack, they circle around it, and when there's 3 or 4 of them, you'll constantly run close to them.
- Their flak aren't a big deal, but many missiles might be, especially if your shields are down/low.

Opinions and discussion about weapon choices:

- Flarebeam + Fusion, reasons being longest ranged cannon, fast firing, and low energy requirements. Tears up AI ships before they're even in range.
- Many prefer the Maxim-r and the fusion laser - Maxim has a long range and a good punch (if you can hit the target with every shot)
- The Maxim has better range, a much higher rate of fire (more rounds on target), lower power requirements (longer sustained fire) and *seems* to use higher velocity rounds that reach the target quicker.
- I currently have the Fusion Laser and Maxim-R. I don't fire them at the same time. I use the laser to beat the enemy's shields down. This works due to basically instant hit, no target lead required, low(er) power requirements (all my ships of choice can sustain continuous fire pretty much indefinitely). When the shields have a big enough hole, I engage the particle cannon.
- The Banshee is devastating up close, but range is limited (which in turn limits laser range, as they are tied together), it has a low(ish) rate of fire and it's a power hog. Better suited for engaging heavily armoured, slow moving targets.
- As a side note, I keep an Excalibur missile pack (great for defensive actions) on the Starmaster, but as a result of lessons learned in combat, have moved to using Exodus and Starfire missiles for combat missions due to the loooooooooooooong reload time on the Excaliburs.
- A kinetic weapon is like a punch weapon knocking your enemy around like cannon balls hitting them. Energy weapons on the other hand burn through the shield and armour by immense heat production. I use a Banshee and Fusion. Cause when you fire the Banshee at the enemy they get bounced around so much that they cannot get a steady firing lock on you while you pound them and the Fusion does a good job for burning through the shield of the enemy and the cannon will do the rest once shields are down. Since range is usually not a problem while flying at a steady speed in inertia the enemy has a hard time locking on to you.....It takes some practice to become good at using the Banshee effectively. And I can usually finish a 10 enemy contract in 3 minutes or less using Excalibur to take the 2 closest out first which leaves 8 to be destroyed with Cannons and Beams which usually takes 1.5 minutes and the rest of the time of the 3 minutes is waiting for the Excalibur to recharge before accepting the next contract...LOL

- Hey Para, you might also take a look at the Eclipse cannon (for real!). Is kinetic/heavy impact like the banshee. slight effective range increase, and slight cyclic rate-of-fire increase over the banshee. Also, has less of a power drain than the banshee. Less of a yield/effect factor than the banshee, but I think is made up for by the increased cyclic rate, more rounds on target. Have used both to good effect.
- I have been using the Fusion/Phantom combo figuring the more power the better the weapon. I now see that is not the case given a variety of circumstances and strategies.
- I just went the other way, from a Phantom to a Maxim-R. I really appreciate the additional distance. If you stick with the closest target and can keep the distance right below that 700 mark you pretty much only have to take care of the missiles coming in.
- Keep in mind to that a Weapons Ops at 100% skill and loyalty increases the weapons range and accuracy....With my Banshee I can hit the enemy at 650 units distance which is close to 700.
- I like the banshee too but switched to the Maxim for the higher rate of fire.

Basics - Military Issues

How do you get military frames?

Go to the War Zones and board the carrier that is there...you can get a military ship that matches your rank in the military...the higher the rank the better the ship. Your military Rank will only increase in the War Zones...so do the mission's there if you want a promotion.

Where can I get better frames and military ships?

Frame availability is keyed to the system - the further out you go, the heavier the frames get; while those have plenty of space for the various goodies, they also tend to be rather sluggish, so most people don't go for the super heavy ones. Subassemblies are available everywhere - you can get a class 10 shield in Sapphire, if you need to.

There's also the option of doing missions for the military in one of the warzones. This is the only way to increase your military rank - which is the only way to access better military frames, but the Vonari you'll face like to play hard - not that recommendable for newcomers, since they're vicious, launch missile volleys that put a **macross missile massacre** to shame, and are tough to kill to boot. And they come in packs of 7+1. Talison WZ (AKA Talison Conflict) is a good place to start a military career.

What about equipment when I swap frames?

Carriers don't have hangars, so that means that the civilian frame you used to fly to the carrier is lost when you buy the military frame; (when you buy a new ship, the one you trade for it just poofs out of existence, is lost). Weapons and equipment are transferred automatically to the new ship, IF it has enough room for that.. If you have a Yoda moment and would lose equipment, the Hangar Chief warns you!

So, before you go to a carrier intending to fly a military frame, STORE your civilian frame into a hangar (all the stuff on it gets stored automatically, I think), buy another civil frame (talon, cheapest), fly that to the carrier, and swap it for the military frame. The talon you swap for the military ship gets lots, although its equipment and weapons automatically transfer to the military ship (all of which have 8 equipment points, so you will always have enough space).

Or, since you're carrying all your equipment and weapons with you, you could just discard the Starmaster. You can always go buy another one...sure, it costs some 7-8mil, so what?

What happens to my crew if I swap to a military frame?

They leave you - military frames are all single seater combat craft

What's the safest way not lose equipment when I swap a frame?

1. Keep in mind that your crew is lost forever if you switch to a military frame.
2. Store all your cargo.
3. Note how many equipment slots are available on the ship you want to buy.
4. If your new ship is short on equipment slots, exit the hangar and transfer equipment to cargo and store it.
5. Buy it, don't swap it. If you decide you want the other ship back, buy it back.
6. Once you've bought your new ship, configure it. Then reload your cargo.

Basics - Mining

Snippets

In Pearl system there is a platinum asteroid field (only platinum). then there's always the hidden Banshee container which go for 1 million a pop

A superb system for mining is the Atlas system, it is also pretty safe and you can sell your ore for high prices - platinum 7 - 9k, diamonds 2 - 6k plus gold and silver around 3 or 4 k. I am pretty sure they sell build constructors there too.

You can pre-prime your cargo bays by buying or leaving only 1 unit of an item in each cargo bay, then travel to an asteroid field to mine. This lets you recover only the material you want while mining. To buy or sell individual units of items at a time, use right click instead of left click.

If you have a container that isn't primed just reject every item you mine that isn't what you want until what you want appears!

You can mine faster by repeatedly passing the tractor beam across the surface of your target, rather than leaving it in the same place.

What are mining drones?

You can deploy a mining drone to mine for you whilst you go off and do more important things, like having a coffee. Hang on - what's more important than making money when you have't got any?! Once you have the money though, a mining probe makes the whole process a lot less tedious

When deploying, the green wireframe disc is your aim point - especially if you're deploying a mining drone. It might seem like hit-or-miss if you don't realize that the disc must cover the area you're attempting to mine.

Discussion/Opinion Mining: Basics of Mining (Asteroids and Planets)

Source: SeeJay's Evoxron Basics Schools - <http://www.junholt.se/evoschool/index.htm>

Locate and Acquire a Mining/Tractor Beam

The first objective you may want to complete is finding a mining/tractor beam. This is one of the most important equipment items in the game as it lets you recover cargo and mine for valuable materials (found in asteroids and planets). One of the most profitable activities early in the game is mining asteroids and this device is needed to harvest the ore. Asteroids generally carry valuable material that is easy to get to since they are in open space, but to find the mining/tractor beam, you may want to land at a city on the surface of Sapphire or a station in orbit where they are often available in the local inventories. Once you find one, click on it in the 'Items for Sale' list to install it on your ship. Once installed, travel back into space and head for the local asteroid field.

Mining

To get started mining, simply fly close to an asteroid and activate the mining beam. You can lock the beam on by pressing the default Alt-B key combination. If you are close enough to the asteroid to mine it, you will see hot red particles of the asteroid fly off from its surface as the beam cuts into the rock. If you do not see this effect, you're not close enough to the asteroid. In Sapphire, metal ore is generally not very valuable, so you can discard any metal you recover in favour of platinum or diamonds, which are far more valuable. To discard an item, simply click on its listing in your cargo bay. Once a cargo bay slot is empty, it can accept any material. But once one unit of a material is placed in a cargo bay slot, you can only continue to load units of that material type into that cargo bay slot. The reason for this is so you can manually manage what material you mine and it accommodates the different shapes and sizes of each material type. Each unit of a material is assigned a unique shape for every container that holds it. These shapes are only compatible with each other and must 'fit' together inside each of your cargo bay slots. Your mining and loading system will automatically take care of this sorting procedure for you, all you need to do is select which materials you want to keep or discard. You can pre-prime your cargo bays by buying or leaving only 1 unit of an item in each cargo bay, then travel to an asteroid field to mine. This lets you recover only the material you want while mining. To buy or sell individual units of items at a time, use right click instead of left click.

Once you have filled your cargo bay with the material(s) you want, travel to the nearby planet Rivoch to sell what you have for better profit. You can also mine the surface of planets for other valuable materials. Mining this way is a safe way to make decent credits early in the game.

You can also earn a few credits while you descend into a planet atmosphere. Keep your tractor beam on as you descend into a planet atmosphere to recover oxygen. This can be sold for as much as 30-50K once you arrive at a city by the time you land, easily covering the costs of fuel for the descent and also leaving you with plenty of credits left over.

Esben's Tutorial for efficient mining

This can be downloaded from SeeJay's website: <http://evochron.junholt.se/menus/downloads.htm>

<http://www.starwraith.com/forum/viewthread.php?tid=6652>

1. Introduction
2. The miner, his ship, and his crew
3. The beginning
4. Waypoints and travelling
- 4.1 Travelling, a small but helpful tip
5. Maxing cash flow
6. Getting a station license in Oasis, the way to get rich
7. Conclusion

1. Introduction

Mining is a good way to start in Evochron. You can make reasonable money quite quickly and upgrade your equipment in preparation for the better but harder money making methods. I will in this short guide cover your basic needs to become a good miner with some tips along the way. People reading this will help themselves by already having watched the tutorials on the site and knowing the basics of the game.

At least: Navigation & Inventory Management and Training & Mining Asteroids and Planets

2. The miner, his ship, and his crew

As a miner you need a ship suited for mining. To save time going back and forth from station to asteroids have as many cargo slots as possible. Get 5 ASAP. In the long run you want a mining beam that only mines a specific material. But to start off with the tractor beam/mining laser is fine.

Start setup

- 3 cargo slots
- 1 shield booster
- 1 mining beam
- 1 Fulcrum drive

Crew: Eventually you might want a Science ops. The balance is that they cost money to hire them, but they reduce the time it takes to mine.

3. The beginning

When you start your new miner. The first thing you want to do is travel to Rucker.

To do it a bit faster you might want to mine a few cargos in Sapphire and upgrade your Fulcrum drive for longer warps.

This is the route: Sapphire->Thuban->Virgo->Rucker

(Read section 4 about travelling)

Some of the jumpgates are very close to stations or planets and might be a little hard to find) for example



You want your base here as it is miners paradise. Your reputation in the system will be fair. Meaning you will encounter hostiles rarely and you won't have to pay docking fees in the stations. Get settled in Rucker station in the middle of the system. Find a good asteroid belt and start mining. When mining make sure to jettison metal. Only go for diamonds and platinum.

Sell it at the station when your cargo is full. And keep repeating to build up your first cash. Use the first cash you get to upgrade your ship to have 5 cargo slots ASAP. And keep building up cash. The first few hours of the game is investment! investment! investment! so though you feel low on cash you will soon see an explosion in cash flow

4. Waypoints and travelling.

- Waypoints, the miners best friend. I will here cover how to set waypoints and use them to save a lot of time.

When you have found that asteroid field you want as your second home it's time to set a waypoint. Fly into mining range of one of the asteroids. Now go into the navigation console (F1), Copy "Current position" into "Destination Position" and click "Add to log". Now give this location a name you can remember, like "my favourite asteroid"



Now let's jump to the station the best way possible:

When jumping to a station, right-click on the station on the navigation map. Close the navigation map. Set your pitch to 0 and press F2. When jumping like this you will get directly into the station when you come out of warp. Or, you will be very close. Simply set Inertial mode and glide into the station. Easy as that.

Now open your navigation map, press "map log" and choose the location you just saved and jump to it. Remember to switch to IDS mode. Now when coming out of jump you will be very close to that asteroid, and within seconds you can mine it

4.1 Travelling, a small but helpful tip

When warping to a jumpgate:

- Right-click the gate on navigation map
- Set your heading to 180° or 0°
- Set your pitch to 0
- Set inertial mode
- Warp

In this way you will glide directly into the gate when coming out of warp.

5. Maxing cash flow

Now you have a good start. And hopefully 5 cargo slots. Now comes the slow start for the speedy income. Build up some cash. Somewhere between 3 and 4 million.

Now let's get a mining beam harvesting only Platinum. I found mine in Vega. So we need to do a small but dangerous trip; Rucker->Virgo->Vega

This is hostile area. And to get the beam you need to be fast! When you jump into the system make sure to save your progress!!! Then jump to the station, pay the docking fee and buy a Platinum mining beam. Then get out as fast as possible and get back to Rucker.

If a Platinum beam is not available and you are greedy like me, load progress and try again. The beam was there for me on 2nd try. Cost me 3.4million. Now when back in Rucker you can start mining only for platinum!

The last bit to do to max cash flow is selling at the right place. Rucker doesn't pat too good. Oasis does though! Very good actually.

So when you cargo is full. Jump through to Pearl. Which will leave you in oasis region. Scroll out on the map and find the station to the southwest.



This is where you want to sell. Notice you are in a hostile area! You once again have to be fast!
Here's the real trick:

- Jump to the station
- Press F3
- Open news console
- Check the going rate for platinum

If the rate is less than 6k warp to a neighbouring sector and warp back to station. Never sell if the rate is below 6k. Most of the time it will be above so you won't be doing a lot of jumping.

Local Market Conditions		
Food: 48	Diam: 1449	Biol: 1064
Meds: 321	Anti: 2460	Oxyg: 133
Hydr: 532	Fusn: 1231	Gold: 1382
Elec: 321	Mach: 181	Silv: 1474
Soln: 168	Tech: 68	Watr: 1170
Metal: 1518	Plat: 1843	Armr: 921
		Fuel: 151

- Pay docking fee
- Sell platinum
- Get out as fast as possible and resume mining.

Keep doing this until you can pay for a station license. Then u can safely dock without having to rush out. Remember heading and pitch while doing all this and it should be no problem. Might wanna save progress often tho

6. Getting a station license at Oasis in Pearl - the way to get rich

Now you have:

- A mining vessel with 5 cargo slots
- A Platinum Mining Beam
- A Science op (optional but recommended)
- A waypoint to an asteroid to mine fast
- A station license in Oasis
- A shot and fast travel back and forth from Rucker->Oasis

Now it's time to make that station license worth it and expand business! You have made some initial investments and are ready to go large.

Now you mine full cargos of platinum. It will take you around 3 trips to have around 2 million. Let's invest to cash!

Spoiler

When docked in Oasis look for a Fulcrum Torpedo. It will cost you around 1.5 million. When you get back to Rucker dock at the center station. Sell it. Notice they will pay around 2.5 million.

Do a mining run more(or do another single torpedo sales run). Now you can buy 2 Torpedos. I guess you already now have figured out whats going on

Now you could skip mining and buy/sell torpedoes.

Within minutes you will have a lot of cash. But hey! Torpedos isn't the only profitable item!! Have a look in Oasis station. There are easy cash to be made here. A little hint: The more you invest, the more you make. I don't need to give you more hints on this little adventure. Your money is already multiplying fast

7. Conclusion

I hope you enjoyed this tutorial. You should now know the basics of travelling fast and smooth. You know how to setup a basic mining routine. You have done your first investments of many to come. You have an income that can easily get you going wherever you want! There are many other profitable trades to be done. You have setup a small trade route that can give you those easy cash you need to get a good ship. And you have only tasted a drop of the ocean! Time to go enjoy Enochron! May you have safe travels and joyful hours

Myths & Not Myths (but hard to test)

Myths

Myth: You don't lose your civilian ranking once you've got it - though you soon get so much extra money that you unlikely to slip back from Legend even if you spend loads of money!

Myth The better the damage rating the better the cannon - every pilot will work out their best particle/beam combination for different types of combat but many agree that IceSpear (for example) is better than Maxim (for example) because it doesn't run out of juice quickly and still has a good range (700)

Myth: Bigger engines make you accelerate faster - they don't. The engine size only determines the top speed it can achieve All engines reach a max speed of around 7900

Myth: you have to strengthen shields to jump through a black hole - this was true in Legends but in Mercenary the black hole bypasses your shields and does damage directly to your hull

Not Myths but hard to test

Points for Military Contracts: You get one point per 10 kills during contracts: True!

You score one point per military contract with the following bonuses:

- one point per waypoint for multi-waypoint contracts
- one point per ten kills (**within** the contract and in which you actually make the killing shot - shared kills don't count!)

Earth can be landed on! Hee hee hee - Actually it can be because Maars (and only Maars) has done it. However you can't land just by flying down to it like a normal planet! There are some who think that earth landings are achieved by hacking the code (and hence cheating)

IMG Quest

Snippets

If you want you can just do the quest until you get the first container location, selling stuff from that gets you enough cash for serious trading pretty quickly. It's a very good idea to come back sometime and finish the quest if for no other reason than you can then do the second "Quest for Peace".

Extra Notes: A Class 1 Fulcrum drive cannot make the trip to New Hope in a single jump. In fact, sometimes a Class 1 drive has trouble jumping to a computed waypoint. If you find your autopilot going nowhere, disengage and manually jump one sector at a time, via the (default) "F2" key, until you reach your destination.

I took a quest holiday - can I find out what to do next?

Yes, they are labelled I.M.G. To recall the last message and continue from where you leave off open Inventory Console. Open News Console. Choose Last Quest Message. It has all the information you need to start your IMG quest or to continue it if you have taken a break

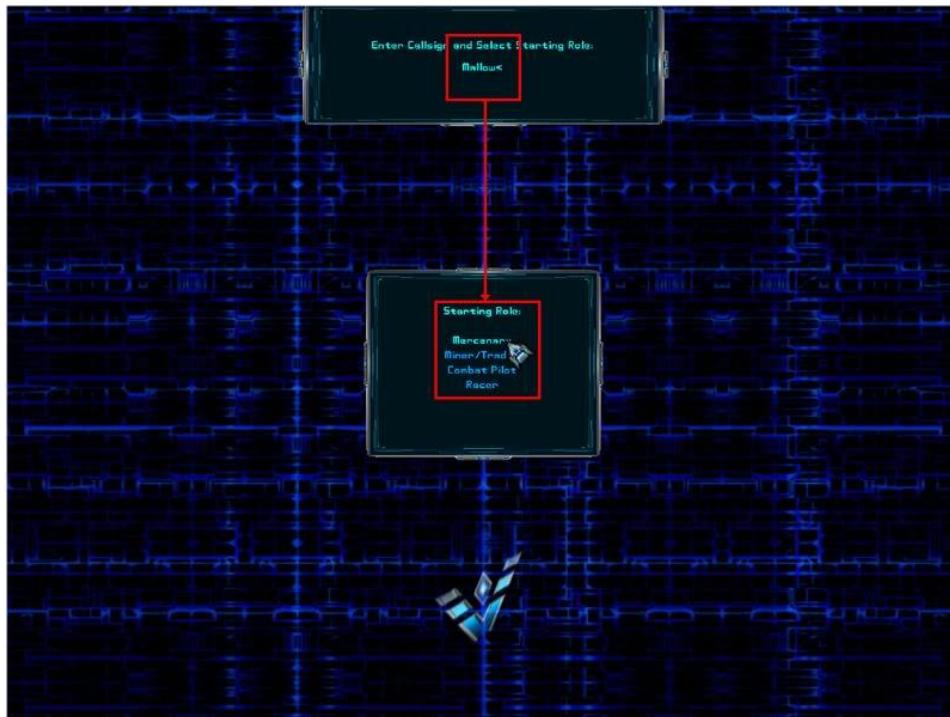
Tutorial: Starting The Mercenary Quest - Caution: Spoiler Alert

source Marvin <http://www.starwraith.com/forum/viewthread.php?tid=6644>

1. Launch the game and, at the “Available Pilot Profile” menu, select the “Create Pilot” option:



2. Enter a Callsign (name) and then select any option except “Combat Pilot.” You will only be offered the Quest when piloting a civilian ship:



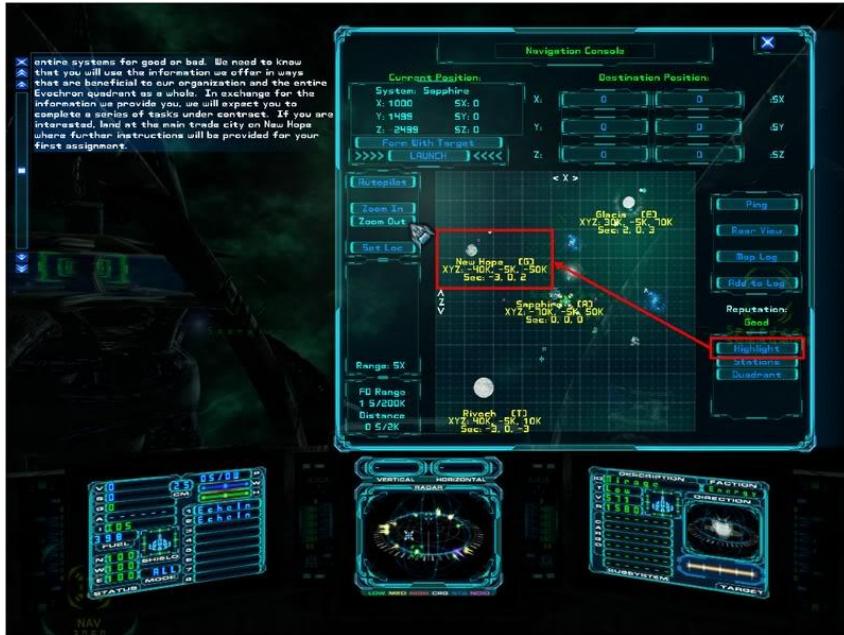
3. Launch the game:



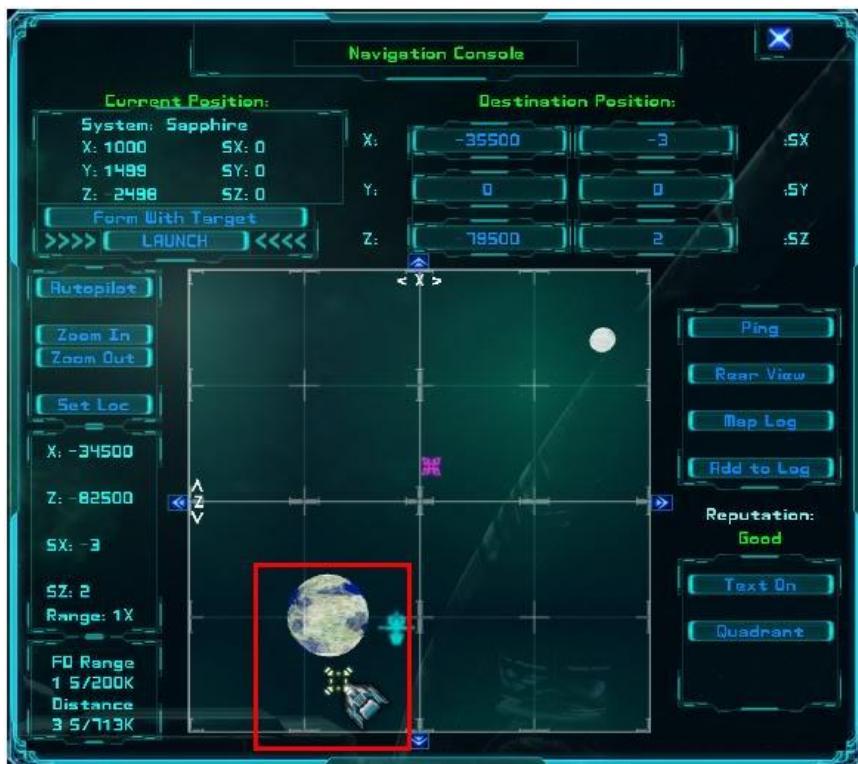
4. Carefully read the message displayed in the chat box:



5. Zoom out on the navigation map to find the planet called New Hope. You can use the "Text On" option (button near the bottom, right) ... click on it and it will become a "Highlight" button, then cycle through the options in the next button down to select "Planets" ... thereby turning off any label that isn't a planet:



6. Left click to set a waypoint near the planet (but not *too* near, else you'll destroy yourself upon impact with the planet's surface ... or burn up in the atmosphere). Then press the (default) "Alt+F" key to engage autopilot, hyper-jumping* to your waypoint:



7. Find the main city (a bracketed plus sign) and set a waypoint to it. Then click on the “Rear View” button (near the middle, right side) to switch map views:



8. Adjust your waypoint in the vertical (up and down):



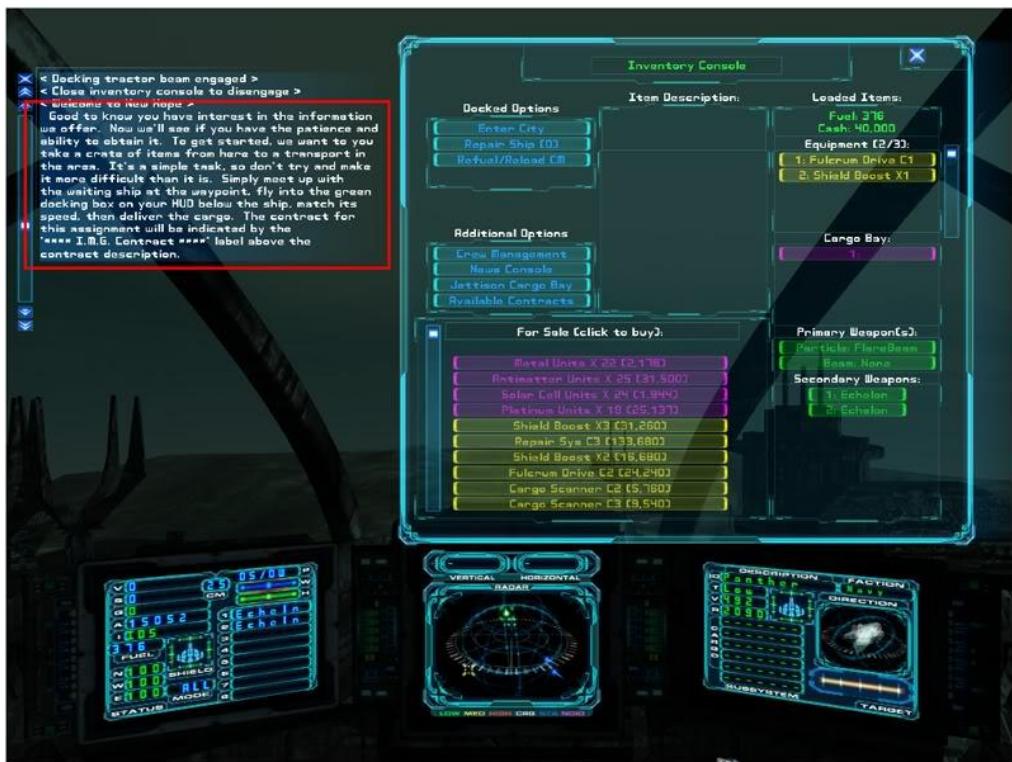
9. At full normal speed, head for the waypoint. (Warning! Do not attempt to hyper-jump!) When you start getting green guide boxes, adjust your flight path toward the center of the boxes:



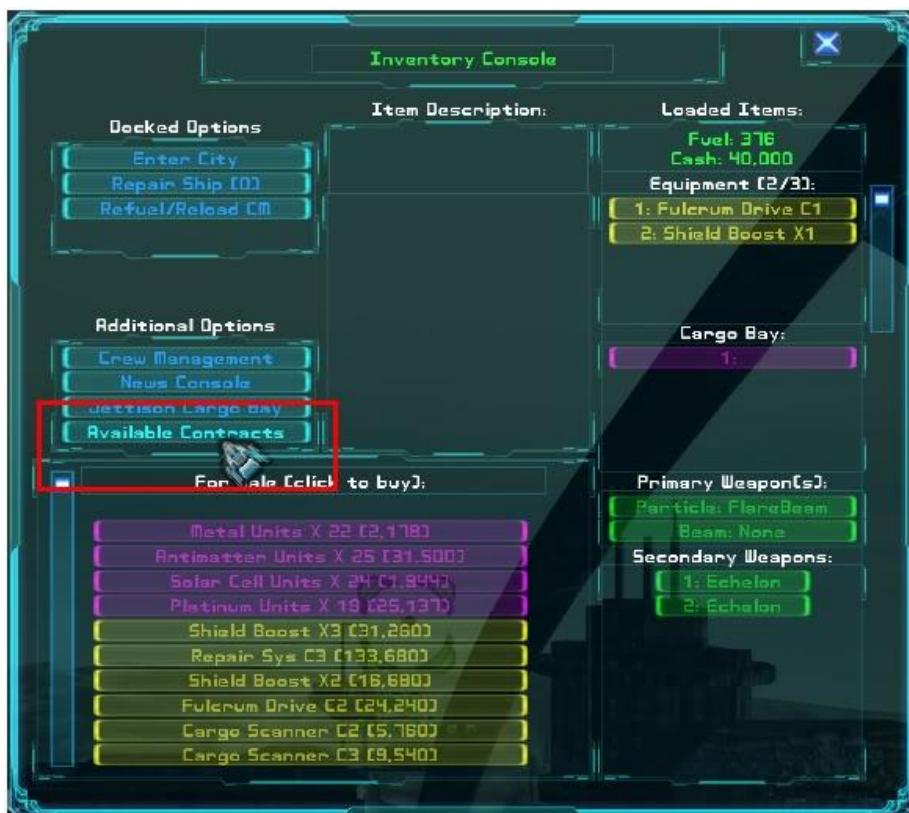
10. The guide boxes will direct you toward the city station. Continue inbound until the docking tractor beam engages and you're safely docked:



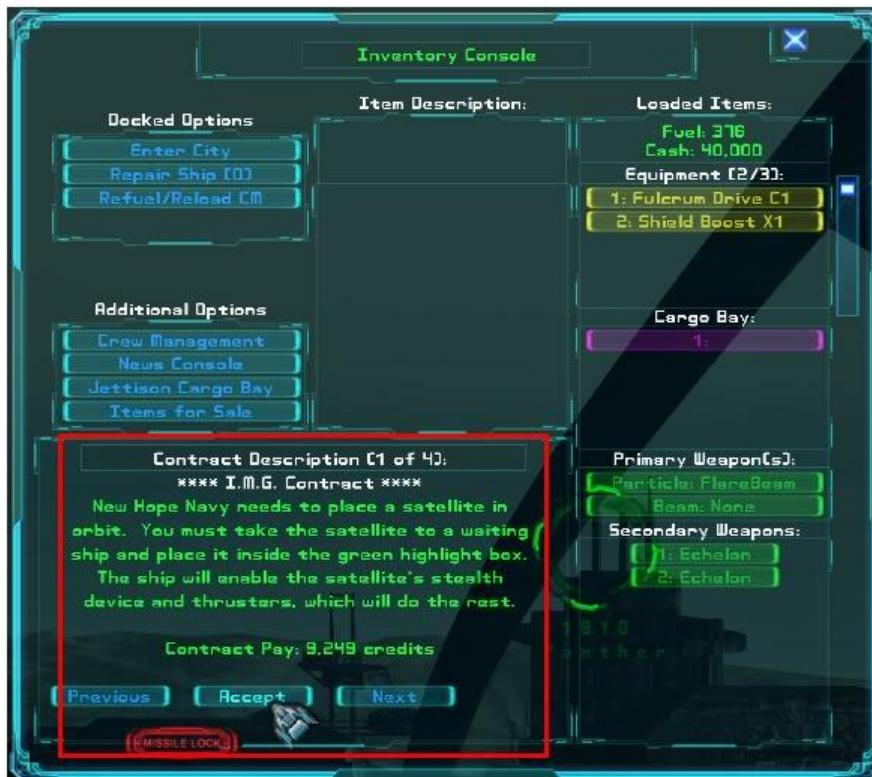
11. Read the new message displayed in the chat box:



12. Select the “Available Contracts” option:



13. Find and accept the one contract with “I.M.G.” in its title:



If you have problems completing the first contract ... stand by for the future release of a Mercenary Pilot's Dash-1 Checklist.

Extra Notes: A Class 1 Fulcrum drive cannot make the trip to New Hope in a single jump. In fact, sometimes a Class 1 drive has trouble jumping to a computed waypoint. If you find your autopilot going nowhere, disengage and manually jump one sector at a time, via the (default) "F2" key, until you reach your destination.

Quest for Peace (by Marvin)

Basic Hints

This Quest has a very different emphasis. You start off being shunted around listening to background history of IMG. You then have to multi-jump to an uncharted system for the first real task (contract). The requirements are given more as a series of hints within the instructions rather than just specific activities to do (though there are lots of them as well)

I've decided that it is up to Marvin (the quest's creator) to decide what hints to offer about specifics.

The fun of this quest is in solving the clues given in the instructions and in being treated like a real mercenary pilot. Any walkthrough will make the quest a waste of time

Therefore I will only give the broadest of hints to stop you making mistakes that take a long time and effort to undo:

Spoiler

Orbits around planets: to be in orbit means being in the same sector as the planet. There might be distance from planet restrictions but think in 3D and explore the sector space

Station Identities: You are being hired by The Guild of Independent Merchants and hence you work for them during this Quest

Why can't I see my last message from the Quest for Peace?

If you update the programme, then the Quest for Peace questtext.dat file is overwritten with the original Questtext.dat file! You then can't get the "last message" info. All you need to do is replace the original file with the quest for Peace file and you will be back to where you were!

Training Videos

Official EM Videos

These can be found in the EM Guide at:

<http://www.starwraith.com/evochronmercenary/universe.htm>

or directly on YouTube:

Tutorial Video #1: Navigation

<http://www.youtube.com/v/hwGOJxYUCoM&hl=en&fs=1>

Tutorial Video #2: Shipyard

<http://www.youtube.com/v/gvms8KW9bk0&hl=en&fs=1>

Tutorial Video #3: Inventory Management and Trading

<http://www.youtube.com/v/19b8ivD200E&hl=en&fs=1>

Tutorial Video #4: Basic Contract Objectives

<http://www.youtube.com/v/xnLPiI-8gMo&hl=en&fs=1>

Tutorial Video #5: Combat

<http://www.youtube.com/v/-VLcJboYG5M&hl=en&fs=1>

Tutorial Video #6: Deploying and Building

<http://www.youtube.com/v/8aUu-jMhcos&hl=en&fs=1>

Tutorial Video #7: Mining Asteroids and Planets

<http://www.youtube.com/v/sL35-XNFI24&hl=en&fs=1>

Other Guides

Evochron Mercenary: Evochron Mercenary Attack Tactic

zdiddy85

<http://www.youtu.be/watch?v=wbBlh4JdvtM&feature=related>

Evochron Mercenary: Using Stealth in Spy Mission (HD)

Sinbad 1006

<http://www.youtu.be/watch?v=quRavP0T4dQ&feature=related>

The following tutorials by **Mecingo** are available from SeeJay's website

Evochron Mercenary (Support Navy against Vonari)

Evochron Mercenary (Contract - Protect Capital Ship)

Evochron Mercenary (Mission - Protect Navy Ship From Vonari)

Evochron Mercenary (Contract - Scan Enemy Capital Ship)

Evochron Mercenary (Contract - Patrol)

Evochron Mercenary (How To Fight 10 Hostiles (Modified))

Evochron Mercenary (Black Hole Jumping (How to do it))

Evochron Mercenary (Atmosphere Combat 101)