

Final Frontier 0.0 alpha 1

Final Frontier™



© 1994 by Christian Franz

Version 0.1 alpha

10. April 1994

Development Version.

© 1994 by Christian Franz

Welcome Everyone.

This Document contains a short, pre-release instructions manual for Final Frontier. This documentation was originally written for my alpha testers. Even if the manual wants you to, please do not report any bugs in either documentation or program to the author.

The only difference between the alpha manual and this manual is that the last sections, 'To be implemented', 'Missions' and 'Ideas' are not contained in this version.

Final Frontier will be available sometime this year. Currently it is in alpha test stage.

Have fun,

Christian Franz

NYI = Not Yet Implemented

General Description

FF is a space-opera 3D real-time game. In it, you pilot a single-person space vessel (the 'ship'). You can trade goods, hunt pirates, or hire out to other people/institutions for specialized services. The object of the game is not to reach a specific goal but to survive long enough to become renown and rich.

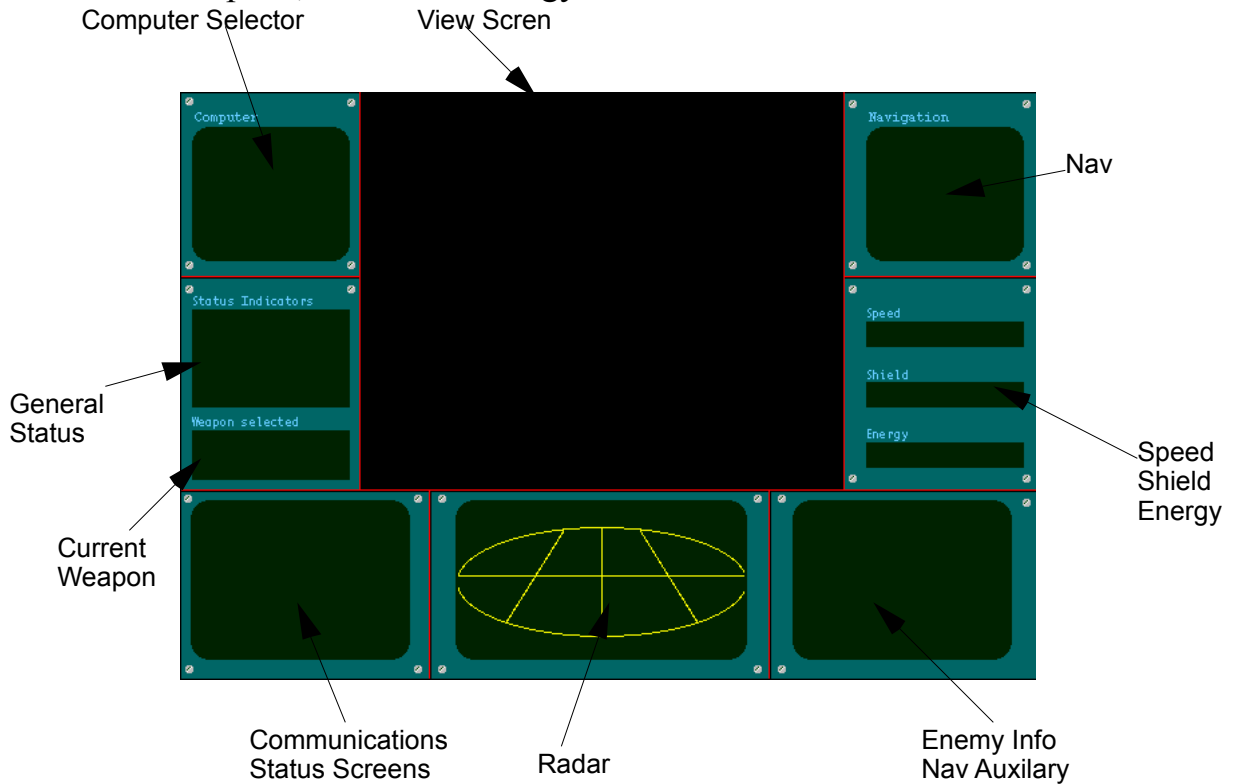
You begin the game with a small, puny ship and very little money. Likewise, you only have limited knowledge of the galaxy around you. As the game progresses, you (hopefully) become more experienced. Your (computers) knowledge of the surrounding solar systems broadens with every new system you visit. These solar systems have complex political/ecological attributes and knowing what sells good where is critical for your success as a trader.

After you have made some profits, you will be able to buy better equipment for your ship, such as a cargo compressor (so you can load up more cargo into the same space), better weaponry or more efficient engines.

After some time, you might also want to get a general service commission to be able to hire out to other people who require some additional hands. After you build a reputation, more challenging missions will be offered to you...

The Cockpit Window:

When sitting in your cockpit, you have a wide array of instruments at your disposal. In the center is the viewscreen. Here you look out of your ship, facing the direction the ship moves. Arranged around the viewscreen there are 4 computer monitors, a status indicator, a radar, the weapons status display and the indicators for speed, shield and energy.

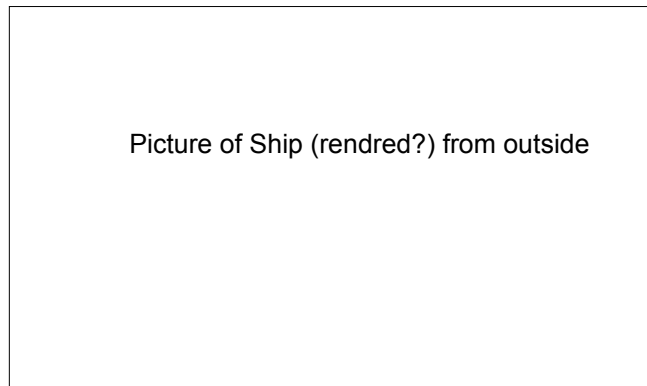


The Ship:

Your ship is equipped with various computers, scanners, weapons systems, power generators and consumers. We will now look at the most important units and how you use them.

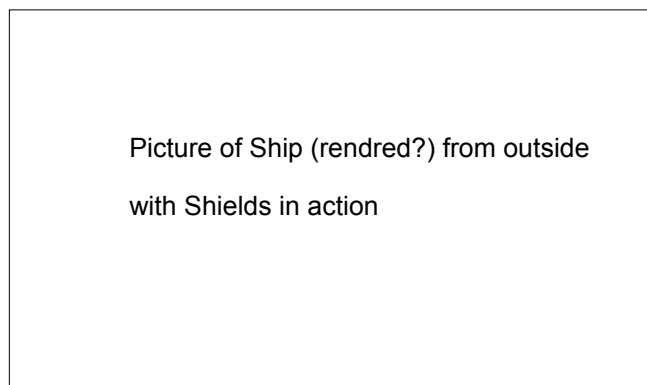
The Hull

Your ship is built from average grade plasteel. It can take some abuse, being built for endurance, not for elegance, but it won't take too much. Crashing into the base at full speed, for example, would be a once-only experience.



The Shields

Because of the limited protection the hull provides, your ship is equipped with a general-purpose, active-drain effector shield. It absorbes both kinetic and actual energy (from collisions, projectile and beam weapons) and renders them harmless. This action drains energy from the shield and care must be taken when the shields have been drained, because then your hull will take damage. Luckily, the shields will rebuild themselves when not used and energy is available.



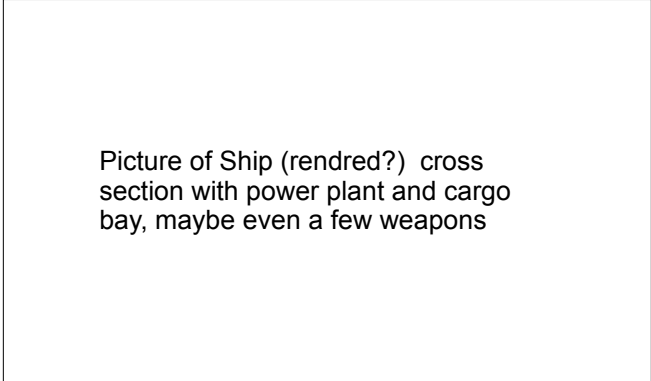
Earlier models required you to allocate energy to different parts of the shield (namely fore, aft and between). The new active-drain shields

Final Frontier 0.0 alpha 6

automatically flow to that part that needs energy, enabling you to have only one shield where you had to use three before.

Power Plant

Your ship is powered by a powerplant that produces a constant amount of energy. Your ships units all use this power. If there is excess energy produced by the powerplant, it is fed into your ship's energy bank for later access. In times of great energy demands (e.g. in combat) your ships units draw from this bank when they need more energy than the powerplant can supply.

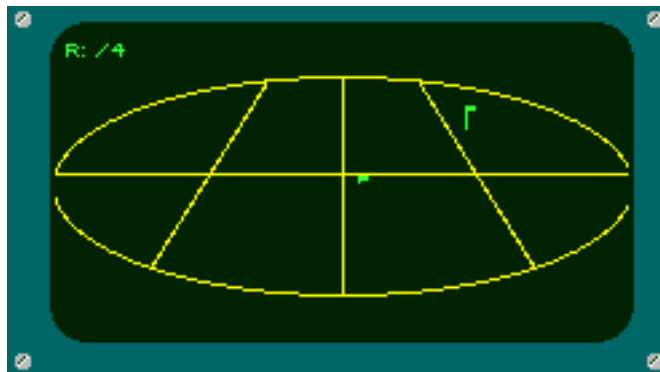


Picture of Ship (rendred?) cross section with power plant and cargo bay, maybe even a few weapons

Instruments

Radar

Your ship is equipped with a 3D full-theta, full-phi radar, the latest and best of it's kind. With it, you have information about everything going on in a sphere around you. Using the radar requires some getting used to. The center of the radar is you. Other objects show up as little horizontal lines that are positioned relative to you as they are outside. To visualize their elevation (i.e. if they are above or below you), a vertical line is drawn from the position of the object to the plane goes through your ship.



The radar has four different ranges : 1x, 2x, 4x, 8x, showing magnification values. Bases show up as little balls.

Computer Unit Selector (CUS)

Your ship has many computer modules built-in that can be activated/deactivated separately. These units share the various monitors around your viewscreen. The only monitor that always shows the same information is the Computer Unit Master Monitor, situated in the top left corner above the general status screen.



With the 'numLock' and '=' keys (keypad) you can cycle through the units, pressing '/' will activate that unit. Some units (e.g. Navigation) have

different modes (Base, Planetary, Stellar). Activating a unit that has more than one mode will cause it to cycle through its modes.

Navigation

You command the ship using polar orientation. The ship always moves forward (except of course when you cut all power, where it just hangs in space), it can't move sideways or backwards. To steer into a different direction, you will first have to roll the ship (i.e. rotate left/right) so that the destination is either directly above or below you. Then you pull up (or down) until you face the desired direction. Using this simple method, you can reach any destination and face any orientation.

To accelerate, press Keypad '+', to decelerate, press keypad '-'.

A few words to the navigation model: it is very simplistic, to say the least. If you turn to head for a different direction, you immediately go into that direction. If you cut the power, you stop, if you increase power, you immediately go by that speed. In reality, this would only work if your ship was mass-less and going about light speed. But in reality, you wouldn't chase pirates with such a puny little ship as yours either, would you?

If you want a realistic space flight simulator, you are looking into the wrong program. I traded simplicity for realism. If you want a better flight model, get *Zone Of Avoidance*, the game that butchered the *ELITE* idea.

Solar Systems

Each solar system has a predominant ecological system (e.g. Industry), a wealth status (e.g. rich) and a political system (e.g. democracy). These three factors determine the market prices and availability for all goods.

Each system has one or more bases of different sizes. You dock at a base for outfitting your ship, repair damage, (save the game,) buy and sell goods, sign up for missions. The size of the base determines docking fee and availability of equipment.

Bases are heavily armed and usually have a fleet of defense crafts for its protection. You should never mess with a base. Inside the base peace perimeter all ships are protected by the base. If you attack a ship inside the perimeter or use your weapons, the base will automatically assume that you are an enemy and launch its weapons toward you. Chances of surviving the retaliation of an annoyed base are marginal.

Hyperspace Travel

You travel from one system to another through what is commonly referred to as 'Jumps'. Actually you are not really jumping but travel along faults in the universe that connect gravity wells of certain size. The true cause for these faults have so far not been determined (thus making

arbitrary jumps impossible) but they always seem to run from one system to the nearest neighbouring systems.

Almost all systems are connected through these continuum faults called Hyperways¹. To travel these, you simply select your destination from the computer, engage your hyperdrive engines and lean back. The hyperdrive compensators will generate the necessary field to cause a temporal rift in the continuum (the 'jump matrix') and let you fall through into the hyperway. There the hyperdrive engines kick in and speed you towards your destination. There, the compensators will effect a complimentary field (taking into account the shifts in gravitational and other forces) and collapse the matrix. Usually, hyperspatial travel is safe. If, your hyperdrive fails during travel, chances are high that the collapsing matrix dumps you out of the fault before anything adverse can happen to you. This doesn't happen very often and usually you find yourself somewhere along the route to your destination.

However, since space is curved you might as well find yourself on the other end of the galaxy or, even worse, universe. Some people claim that this is how intergalactical travel would be possible, but noone who embarked to prove their theory has so far shown up again. So far only twentynine ships have been lost without trace due to matrix failure in the past hundret years. However, of those twentynine ships twelve were lost within the last 18 month...

When you begin the game, your computer holds only a very limited data base of systems in the galaxy. Whenenver you enter a system that you havn't been before, the computer automatically scans all surrounding systems and enters their information into your navigational memory banks².

3D Universe

While in the base, you can bring up a map of the galaxy as you have explored it so far. In this view, only systems show up that you have explored or those that border to those you have explored. The map shows all systems along with their names and hyperways that connect them. You can rotate the map to get a better perspective and zoom in and out, hide the names and hide the hyperways. Usually, the map centers on your current position. However, you can also view the map centered on your home base, Rukbat (?). The System that is marked red

¹This is also commonly known as a wormhole. However, SpaceShip Mfg Inc., the leading hyperdrive producer, was driven hard by it's marketing division to give these space/time singularities a different, more trusting name. Drawing on the legendary highways of ancient earth, the marketing division came up with the new designation 'Hyperway'

²This is a game element. Of course it is hard to believe that you can't buy a memory chip with all data at the station. But I thought the game would be more fun that way

Final Frontier 0.0 alpha 10
is the one you are

currently at. Clicking on a system will bring up it's name, political and economical status.

Navigation Aids

To aid your navigation, your ship is equipped with a general-purpose navigation computer. This computer always uses the upper right and the lower right auxiliary screen in the cockpit. There are four distinct navigation modes: Base, Planetary, Stellar and Combat.

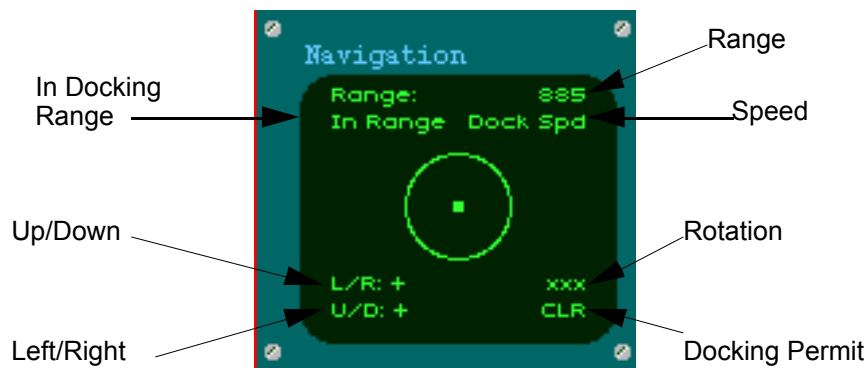
The basic element of all these Nav aids is the Direction finder. It is represented by a circle in which you find a little dot, the 'Blip'. The Blip indicates the relative direction (not the distance) of the destination to your ship. When you turn, the Blip moves accordingly.



When you directly face your destination, the Navaid will sound a short audio feedback. When your destination is behind you, the Blip becomes hollow. All Nav aids also show the Range (i.e. the distance) to your destination.

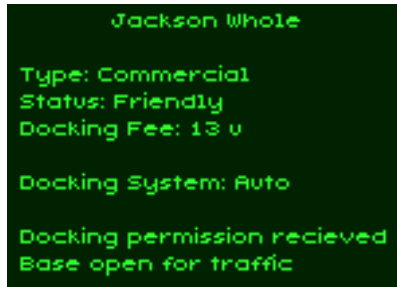
Base Navigation

The NavBase monitor (upper right) shows additional info needed for docking. First, it tells you if you are close enough for the docking computer to show additional info (InRange).



Then it will tell you if your speed is correct (TOO FAST) and if your alignment with the base's rotational axis is correct (U/D, L/R) and your correctly rotated (ROT!). Additionally, it shows if you have docking permission.

The NavAux monitor (lower right) shows info about the base (open/closed, docking permission etc.).



While in NavBase mode, you communication unit is preset for ship-to-base communication.

Planetary Navigation

The NavPlan monitor (upper right) shows the current planetary (i.e. inner-system) destination. It sports only the basic Navaid (Direction finder and Range).



The NavAux monitor (lower right) shows the available planetary destinations. 1 is always a base. Zero will cancel any selection. The Planetary Navigator is used for inner-system missions. You can mark your current location as Planetary Destination 9 if you want to return to a specific point (NYI).



The Planetary destination selected is automatically fed into the autopilot, the HUD will display a little cross where your destination is. To engage Autopilot, press 'A'.

Stellar Navigation

NavStel (upper right monitor) is the only NavAid without Direction finder and Range.



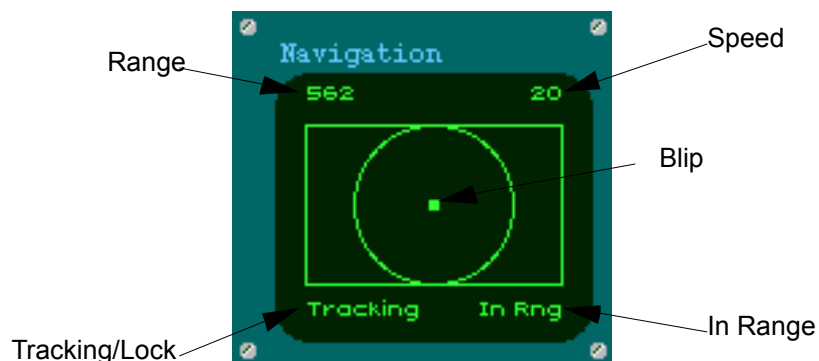
Instead, it displays information about the stellar system you have selected from the NavAux (lower right).



The system you select is automatically fed into the hyperspace computer. To engage the Jump Drive, press 'H'.

Combat Navigation

The CombatNav is the most complex (and important) of your NavAids. The Direction finder shows the direction of the currently selected target (or 'NO TARGET'). If the target is in range of your weapons systems, the InRng Indicator will come up. The current range is also displayed and the target's speed. When you directly face the target, you hear the audio feedback, indicating that the missile subsystem can lock onto the target (TRACKING).



Pressing Enter will lock the target (LOCK). A square will appear at the target's center in the viewscreen. If your Weapons are armed and Missiles selected, you now can fire them at your target. To release a missile, you must select it as current weapon and press Space. To release a target, press Keypad '0'.

The NavAux monitor (lower right) shows information about the currently selected target: Owner, Class, Weapons, Shields, Maneuver and Friend/Foe status.



If the computer recognizes the Target as a pirate, it will automatically raise shields, ready the weapons system and display the bounty (NYI). If no target selected, it will show 'No Target'.

To cycle through all available targets, press keypad '7' and '9'. The currently selected Target shows on the radar as a red object.

If you have auto-targeting active, the BattleComputer will always select the target that is closest in front of you. When in NavCombat mode, your Communications Unit is set for ship-to-ship communication. To enable auto-targeting, press 'T' Combat Navigation can not be entered using the Activate Unit command in the CUS. Instead, it is tied with the weapons master switch 'W'. When your weapons are activated, the NavAid is locked into CombatNav.

Another way to enter NavCombat is to activate the battle computer using the CUS.

Communication

Depending on your current NavAid setting (Base, Planetary, Stellar or Combat), your Comunit is set either to ship-to-base communication or ship-to-ship communication. If you activate the comunit, the ComAux screen (lower left) shows a menu of the available messages to send. They are usually

0. Sign Off (i.e. do nothing)
1. Request Trade or request docking permission
2. Demand surrender
3. Call for help

When you receive an answer, it is displayed inside the view window.

Remember, to communicate with the base, you have to switch to NavBase and to communicate with other ships, you have to activate the battle computer and target the ship you want to talk to.

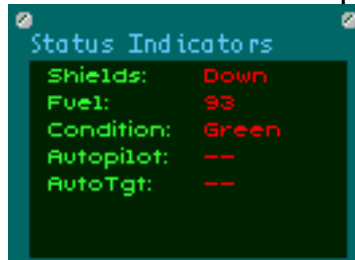
Status

You can call up many status screens about your ship. To advance to the next status screen, activate status through the CUS. The screens appear on the StatusAux screen (Lower left) and are:

- Ship verbose - Status of all major systems
- Ship graphical - Your ship. damaged units are colored red
- Weapons stores - Your available weapons and their status
- Cargo (1) - Net value of cargo at current market prices
- Cargo (2) - Cargo List part 1
- Cargo (3) - Cargo List part 2

Other Displays

The general Status display summarises the most important status information:



Condition:

green - yellow - red

Fuel:

Shows the amount of fuel left for the power plant. No fuel means you are just about dead.

Auto Pilot:

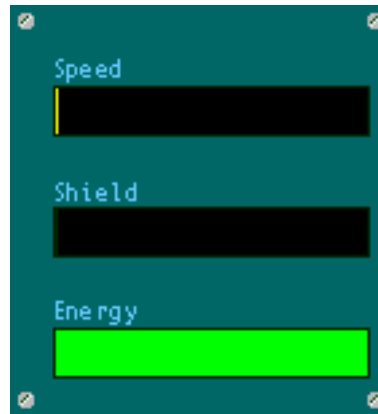
On-Off, Toggle with 'A'. Only usable if Planetary Destination set. Automatically switches off when arrived at destination.

Auto Target:

Toggle with 'T'. Only usable when in NavCombat

Variable Indicators

These indicators show you at a glance how much of the maximum available is left. When this indicator shows red, you should be careful, when it shows yellow, you should watch it, if it shows green, you don't have to worry about it.



Shields:

Raise/Lower with 'S'. Shields have an enormous drain on the energy banks. However, when you lower the shields, the banks are fed with this energy until energy banks are full. Then, the shield energy simply dissipates.

Speed:

Raise with '+', lower with '-' (both Keypad). The faster you go, the more energy is consumed from the power plant and, ultimately, from your energy banks.

Energy

This status bar shows how much energy is stored in your energy banks. The banks are charged by the power plant when it produces excessive energy and depleted by your ships units when they consume more energy than is produced.

Combat

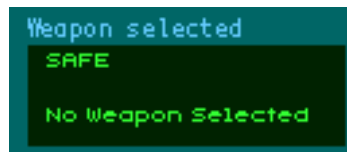
You enter combat in three different ways:

- Being attacked by other vessels will automatically raise shields and enable all weapon systems
- Automatic combat mode when computer identifies other vessels as pirates
- Enabling all weapons manually to attack a pirate or other ship

Neutralizing Pirates will also bring you money. If you are attacked or if you attack a Pirate and neutralize him, you will receive the bounty that was set for him. Note that if you neutralize (i.e. kill) other ships, you will be considered a pirate (and attacked).

Weapon Selected

Shows the currently selected weapon and further information (such as how many projectiles left, ready to fire, overheat, no target, locked on etc.)



Selecting Weapons

You cycle through your different weapons systems with 'Q' and 'E' (forward, backward)

Arming Weapons

You press the Weapons master 'W' which will simultaneously raise shields (when down), arm the currently selected weapon and place the NavAid in combat mode. This also sets your Comunit to ship-to-ship mode.

When in combat mode, you can disarm your weapon with 'D' (SAFE)

Firing Weapons

When your currently selected weapon is armed and ready, pressing space will fire it.

Weapons Systems

Your ship's offensive weapons systems fall into three main categories: Beam, Projectile and Missile (actually, Missiles are smart projectiles, but since they are self-propelled, we keep them in a class of their own).

Beam Weapons

A Beam Weapon is usually a high-energy beam of some sort (light, particle, sub-particles, antimatter) that is directed at your target. It travels at lightspeed and always in a straight line. Beam weapons are effective at long ranges and deadly at short ranges. However, they draw heavily on your power source.

Projectile

Projectiles are also sometimes referred to as 'Torpedoes'. This name, however, is misleading, since a torpedo is assumed to have a certain intelligence. Projectile Weapons don't. These weapons use matter of some kind that is highly accelerated towards the target. The damage is delivered through impact. There are kinetic, explosive and other effects when hit (most notably gravitronic torps). Projectile weapons are much slower than beam weapons and can be evaded on long ranges. Using heavy matter projectiles on short distance has devastating effect on the target. They are not very effective at long ranges.

Missile

These are little spaceships with a warhead and some intelligence (about that of a mad mythical shark) that are launched against a target. Once launched, this little devil will zoom towards its destination, exploding on or close to impact. Missiles are very effective at close range and deliver the greatest possible damage. On long distance, however, they can be easily destroyed by ACTCM (Automatic Computer Tracking and Counter Measure), the Battle-Computers automatic self-defense against incoming objects.

ACCM

Not under your but your ship computer's control is the ACTCM, an autonomous device for tracking and -possibly- destroying incoming small objects such as small meteoroids, debris and, to some extent, missiles. The ACTCM works automatically employing beam weapons. However, these lasers don't bear enough punch to attack a real ship.

Tractor Beam

This is no weapon but a tool. You operate it as you would operate a missile (lock it on to a target). When activated, the tractor beam emits a steady, controlled beam of Gravitachs that work like a rope. Use it for towing large objects and to dock with other ships. Don't use it for docking at the base since you can easily destroy parts of it's outer hull (That is a very ineffective means of attacking a base since in that case everyone will be wearing vacsuits anyways).

Configuration:

Your ship has 10 mounting brackets for various weapons systems. Of these, each type of either beam or projectile will use one, while each missile and its launcher will use one. Thus, you can either load up 10

beam weapons or 1 beam, 1 projectile and 8 missiles or any other combination. Weapons systems can be bought at stations. Not all equipment can be bought at every station. The bigger the station, the greater the selection. For some equipment you must have a special license, other equipment is downright illegal to possess (not to mention to use).

Using Weapons:

To use any weapon, you must select it and have the battle computer activated. Using the weapons is quite simple. You pre-select the weapon and it shows up in the weapons status control. Whenever the weapons are armed (i.e. the battle computer is turned on) and the weapon is ready, pressing the trigger (space bar) fires the weapon. You aim at your target using the circular sights in the viewscreen.

Beam/Projectile:

Beam and projectile weapons can fire repeatedly. To do this, simply leave the trigger (space bar) depressed. Some Beam/Projectile weapons take longer to reload/recharge, some heat up while using. Whenever the computer detects a condition where a weapon is not ready to fire it will withhold fire until the first possible moment where the weapon can fire again.

Missiles

Most Missiles have to be programmed to home on a target to be effective. These missiles use special optical recognition techniques along with a special guidance beam. For this you have to designate a target through the target selectors *and lock on to it by bringing it into the sights once*. After you have locked on to the target, pressing the trigger will launch the missile towards its target³. Dumb missiles will lock onto the nearest target in front and attack it (be *very* careful using these when protecting a convoy).

Your Enemies

Your enemies come in all sizes, colors and guises. While you are on the good side of the law, your enemies are usually pirates and 'free traders', as well as rogue patrol crafts (in unstable political systems). In certain systems that are at war you can also be attacked by military vessels of the other side. If they find you guilty of espionage or blockade running, you'll have a problem (usually a terminally short one).

³I know that this way of handling missiles would be ineffective even with today's technology. But it would be less fun pressing the autobattle button and watching the computer eradicate sixteen targets in a split-second and then move on to the base

If your legal status has fallen below a certain threshold, police crafts will seek you out. If it drops further, headhunters will be on your trail as well. While pirates usually are a nuisance ranging from bad to worse, police crafts are lethal, military crafts dangerous and head hunters deadly. Some pirates will surrender when pressed hard to save their lives. Some military vessels will also. Police vessels never surrender. Headhunters prefer blowing themselves up before they surrender.

And then there are the bases. *Never* take on a base unless you know exactly what you do (which is, in effect never). Bases are bad news to have as an enemy. You can annoy a base by offending it through communications. They will close the doors to you and forget it until the next time you are around. But to get a base angry, attack it. It will make life miserable for you. It will launch defensive crafts. It will turn its beams on you that make your offensive weapons look like flashlights. It will use excessive force just to make a point. And it won't forgive.

Docking

For successful docking, follow these steps:

1. Acquire Docking permission
2. Line up with base at a safe distance
3. orient your ship that you are aligned with the bases rotation axis
4. approach slowly until almost inside
5. synchronize with base rotation when the gate is horizontal
6. enter

If you have a docking computer, acquire docking permission and activate docking sequence.

Trading

Trading on the whole is easy. You buy goods, store them in your cargo bay, fly to a different system (or find a ship that will trade with you), dock at the base/ship and re-sell them. If you are lucky, the price difference makes up for the money spent to get here. There are many different goods that can be bought. Those that are marked with an asteriks (*) will blacken your legal status if you trade them. On the other hand, the possible profit on these is much bigger.

When inside a base or ship you can trade. For this you call up the price list. On it, you find (in that order) item name, price (buy/sell), quantity available and quantity aboard your ship.

To buy or sell an item, click on it and the trading dialog will appear. Buy sell the amount you want. If you get short on either quantity, MU or storage capacity, the dialog will tell you.

Improving your ship (NYI)

When inside a base, you can purchase equipment for your ship. These can be selected from a list similar to the trading list, except that you will only see those items, that are available at the base. Different bases carry different items. Some items (especially the illegal weapons systems and military weapons) cannot be purchased regularly but will be awarded for successful missions or are found aboard pirate vessels.

Missions (NYI)

Whenever you are aboard a Base or docked with another vessel you can call up the Missions menu. If there is a mission available and you are commissioned to accept a mission, you can opt to accept it.

When you finish a particular mission, you are automatically rewarded the amount of MU that was agreed as payment. Some missions offer advance payments, other offer items as payments (such as equipment that can't normally be bought or a clean legal record).

If a mission is available depends on your rating. For example, the Break&Retrieve mission where you have to take on a base will only become

available after you achieve dangerous status and have at least

some military equipment (which can't be bought but must be earned in other missions).

In the real game, you can't see the available missions in advance. Only one mission is offered per Station (if at all). While currently signed up for a mission, you might not sign up for another.

(mission profiles deleted).

Debugging Commands

Currently there are the following debugging commands available:

- Space Bar: not used
- Return: begin animation of objects
- Mouse Button: exit spaceflight, return to base.

Settings Menu:

- Music: Turn on/off FF Theme
- Stereo: Turn on/off stereo music
- Sound: Turn on/off sound F/X
- Copy Transfer modes
 - QD : Use QuickDraw's CopyBits. Fastest on PPC machines, QD accelerators and AV machines
 - Blit : Assembler dumb copybits, should be faster than standard copybits.
 - BlitHalf: Transfers only every second line
 - BlitAlternating: transfers even and odd lines alternating
- Alpha Settings: Display current recognized system environ variables and Overrun-Count (the number of times the game was too slow to draw everything before time-out occured for set frame-rate. Set Frame Rate. Reset Overrun-Count.

Debugging Alerts

Whenever FF encounters a function that has not been implemented, it will display an alert saying 'NYI: <Function>' and exit the program. You should NOT report these exits unless you have the feeling that the function described is called completely out of place (e.g. 'NYI: Docking' while in combat).

Removed Bugs

- no audio feedback when communication with base (25.3.)
- no audio feedback when communication with ships (25.3)

Known Bugs

- small horizontal line during title frames (CF)
- visibility of objects needs improvement (CF)
- wrong font that says 'docking successful' (CF)
- bad color when shutting down the viewport (CF)
- wrong price list when docked (CF)
- when locked on target change possible through target select keys (CF)
- no audio-feedback when cancelling comm via modSel (CF)