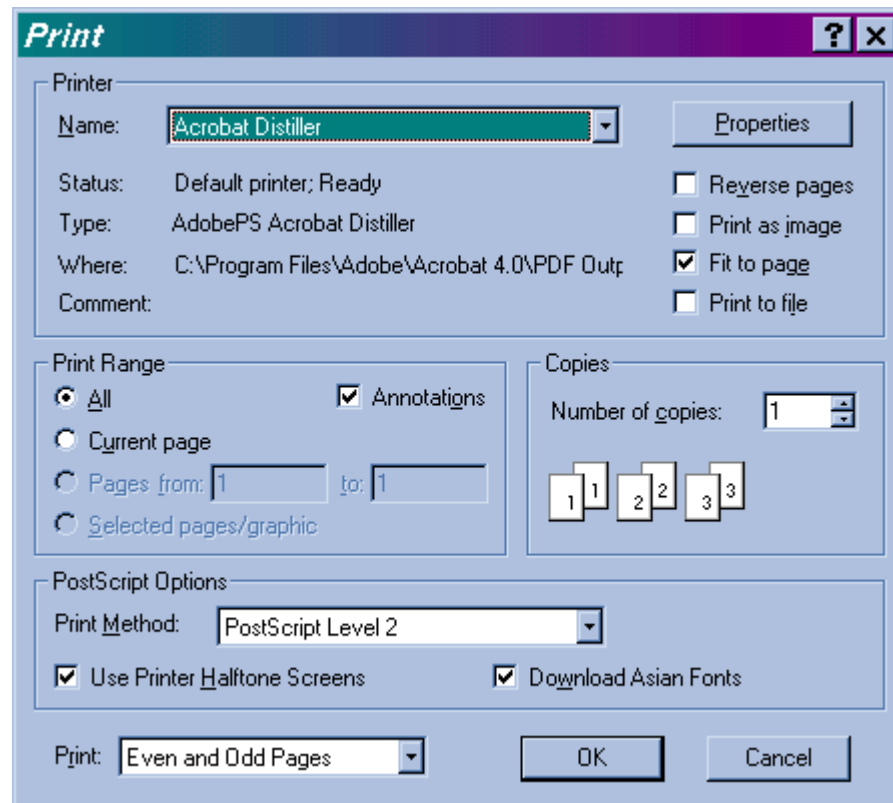


STARSHIPS UNLIMITED™
- DIVIDED GALAXIES -
User Manual



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Overview

Starting Situation

Your people have built their first interstellar starship. They are ready to explore the stars around them. You will lead them.

You are not alone

There may be up to 7 other computer-controlled space-faring civilizations in the same position. You will have to compete with these 'players' for the resources and artifacts of the galaxy.

Technology

Technology plays a big part in the game. You choose the research path for your people. Each discovery usually leads to newer technologies to research. Technologies can be used on your worlds and in your starships. Both have modular designs, allowing you to place the different items you discover aboard them.

Understand that the galaxy is a dangerous place and that a badly armed starship or world may lead to an early extinction. Consider researching weapons and either armor or shields early on.

Mapping the stars

Your computer sensors haven't been able to map out much of the galaxy. Only the stars closest to your home world are within your sensor ranges. As you explore the stars, your starships will locate new stars until you've eventually mapped out the entire galaxy.

Exploring stars

Your initial goal is to visit all unknown star systems. Some ancient alien civilization has placed artifacts on all the planets of the uninhabited systems. It will be a race to gather up as many of these artifacts as you can. Whoever possesses an artifact gains its special ability. Some are needed to advance in the game while others are so powerful that you wouldn't want any other player to possess them.

Wisdom Artifacts

These artifacts possess knowledge that can speed up the research of any world that possesses them. Having enough of them also allows your people to move to a new age of technology. There are 4 ages in total, each requiring the possession of more Wisdom Artifacts. To make things interesting, there will not be enough Wisdom Artifacts for all players to reach all the ages.

First Starship Mission

You should prepare your starship for an exploration mission to the nearest star. Beware that most artifacts have at least one sentry entity guarding it. You will need to have weapons, the more the better, to defeat these sentries. Ensure that you configure your starship with a lot of weapons before leaving.

Clearing Artifacts from Star Systems

This is your main goal when exploring a new star system. Once a star system is cleared of its artifacts, it becomes available for ownership by any player that knows of it. The main means of acquiring territory in the game is by building freighter routes, one route per star system, to artifact-free star systems. A freighter harvests a system of its resources and returns them to its world.

Resources

Resources are spent when produce things. Many things have a yearly upkeep cost. This includes starships, informants and colonies.

Colonies

Colonies are a big drain on your resources due to their large yearly upkeep costs. They are especially bad during their first 50 years. It's important to have a good income flow or enough resources to last you through this period, before considering a new colony. You will need to have researched Colony Pods or found an Instant Colony Artifact beforehand. As previously stated, your main means of acquiring star systems is by building freighter routes.

Pirates

The star systems that freighters harvest are known as resource systems. Eventually a pirate starship will come along and raid your resource systems. They will remain in a system until driven out, during which time they will take all the resources for themselves. You should monitor the Finances popup or check the Star Map for systems occupied by pirates. You should then dispatch a starship to patrol the star system.

Tactical Combat

Tactical combat plays an important role in the game. If you've taken manual control of combat, then it's during combat that the game behaves more like a turn-based game (Chess being a well known example). The mechanics of the game force you to plan your moves during combat.

Starships are required to choose from a list of pre-programmed combat maneuvers when attacking a target. The idea is to commit your starship to a short sequence of moves in an attempt to maneuver your starship into a firing position. To this effect, each weapon has a distinct targeting area, which a target must be within to be shot at. Think of a starship like a glorified Chess piece. As starships gain combat experience, their list of combat maneuvers grow.

The game will pause to allow you to choose combat maneuvers and to fire at targets.

First Contact

Eventually you will come across another player. In order to communicate with this player you must either know the location of one of their worlds or be in visual contact with one of their starships. During this time it is a good idea to share information about the other's space. This will cut down on your sending starships to explore star systems that are already owned by another.

Intelligence

Informants and spies are needed on all the worlds of your adversaries. Passively, they provide you with knowledge of another player's capabilities. They may also be able to alert you to any attacks being planned against your star systems, a useful function given the vastness of space. You can also use these units to do espionage, sabotage, and to steal resources and Wisdom Artifacts.

Player Philosophies

There are two conflicting philosophies in the game. All players are assigned one. Any player that you meet that shares your philosophy will be considered a potential ally. Conversely, any player that is of the other philosophy will be considered a natural enemy. Your people's trust of the other depends a lot on this simple relationship.

Forming Alliances

You can only form an alliance with one player at a time and that player must share your philosophy.

Forming Federations

You can form a Federation with your ally. Once done, both player's people will become one (with you in control, of course). This can be a long process in which both players' people must have 100% trust in the other. It offers a bloodless way of unifying the galaxy, which is your ultimate goal after all.

Warfare

Players can declare war on each other. During this time, they can send starships to destroy enemy resource systems (by attacking their freighters); as well as attack and capture enemy worlds.

Subverting other Players

You can use your vast resources to subvert the philosophy of another player. This is useful in making a natural enemy into a potential ally. The more unopposed money spent, the more unrest on the other player's worlds. When unrest goes over 50% the chance of subverting the other player's philosophy

becomes possible. All players are free to spend money on defending their philosophy and the philosophies of others.

Final War

When only two players remain and all stars are known, then a final war will determine the winner of the game.

Automation

The computer will help you keep your empire humming along. By default, it will automate such things as:

- Handling combat (maneuvering and firing)
- Building freighters
- Recruiting informants
- Replacing obsolete, badly damaged or used up components
- Transferring artifacts between starships and worlds
- Topping up starship crews when returning to worlds
- Using artifacts

While this may sound like the computer is controlling a lot, in truth, it is only acting when you do not. Think of the automations like a safety net, keeping you competitive. You can always override its decisions or turn individual automations off.

A perfect example would be taking over combat from one of your starships. When you first play the game the starship captains will probably be better at combat than you are. But after watching them fight for a while, you may decide that you can do better and take manual control of combat.

Getting Started

Starships Unlimited: Divided Galaxies combines tactics with strategy in a battle for territory and resources. Defeat the last player and you win the galaxy and the game. Along the way you research new technologies, spy, subvert governments, form alliances and federations. You can fight up to 7 computer-controlled, space-faring civilizations for artifacts, stars and, eventually, the entire galaxy.

Learning the game quickly

The game includes several ways to get you up to speed:

- **Help Tips:** Shows up on the screen to explain new situations, effectively walking you through the game. A graphical Tab containing the word "Tip" is displayed whenever there are some tips available. Clicking on the tab or pressing the Tab key will bring up a Tip popup.
- **Context-sensitive help:** Click on anything with the Shift key held down
- **Advisors Report:** Gives you advice on your current state of affairs.
- **Help file (this file):** Press the F1 key while in the game
- **PDF manual:** a PDF version of the help file.

The Help Tips will walk you through the various aspects of game play as they become necessary. They are active by default but can be turned off from the Game Options popup. Press the Tab key if you want to review the last tip given.

The Context-sensitive help is quite extensive and can give you insight into many things. Besides buttons, don't forget to also click on popups (outside any buttons) to get an overview on what that popup does.

Note that the cursor changes when you hold the Shift key down. The question mark indicates that by clicking with the left-mouse button, you may get help on the item underneath.

Game Mechanics

The game tries to find a balance between a smooth flowing, Real-Time Strategy (RTS) game and a detailed Turn-based Strategy game. By default, the game plays more like an RTS game as the starship captains and world governors handle the details of combat. You always have the option of manually controlling a unit during combat. A lot of the discussion below relates to manually controlling a unit during combat.

Rather than pausing the game each "turn" (there are 5 turns per month), it uses certain events to automatically pause (auto-pause) the game. The event message is displayed at the top of the screen. A flashing button with a check mark on it allows you to either acknowledge the event and continue the game or sets things up for your input. It will call up the appropriate popup, recenter the solar view and focus on one of your units, if necessary. Once the input is obtained, the game will continue. The flashing check mark button may be accompanied by a flashing button to its right. Clicking on this button will recenter the solar view on the event without changing anything else (no focus unit change). It allows you to center on the event and manually act accordingly. You can later center on old events from the message log popup.

There is no limit to command entry or view changes while paused. In the case of some commands, you may have to wait until the game is running again to see their effects (e.g. hailing).

Here are the most important auto-pause events:

- Wants you to choose a new starship mission
- Wants you to configure a starship with components
- Wants you to choose a starship combat maneuver
- Weapons have locked onto a target, ready to fire
- A channel has been opened to the unit you've requested to Hail
- Another unit is hailing you
- You've discovered a new technology

Note that you will only have a dozen or so world and starship units to contend with at a time. Limited resources and yearly upkeep costs keep the number of units you can build relatively small, allowing you to concentrate more on each individual unit.

Here is the anatomy of a turn, the computer will auto-pause the game if it involves you or one of your units:

- Show info about finished production, diplomacy, research, ...
- **Firing Phase:** Each Unit is allowed to fire at valid targets
- **Communications Phase:** Each Unit is allowed to respond to a Hail

- **Movement phase:** Each Unit is allowed to choose a Mission or Navigational Order

Tips

- Add weapons and defenses (armor or shields) before leaving on your first explore mission
- Add at least 1 defensive weapon to improve point-defense and fighter defense
- Add an extra computer to your first starship to locate new stars at the beginning of a game
- Observe your ships in combat. See how fast they recharge their weapons.
- If you have energy weapons, ensure you have enough generators to produce the power.
- Update your starship docking configurations as new technologies become available
- Return your starships to one of your worlds with a space dock so they can upgrade/replace components to match their docking configurations
- Adjust a world's population to suit your current needs
- Return wisdom artifacts to your worlds ASAP to speed research time
- Save some of your advanced research artifacts for later ages
- Wait until you've got a cash flow of at least \$30/year before colonizing
- Take the earliest opportunity to explore wormholes, they make moving around the galaxy easier
- Screens (early shields) work best against a specific type of weapon damage, match your shields to your enemy's weapons
- Patrol weak worlds during wartime
- Send as many starship as possible when attacking/capturing worlds
- Try threatening an enemy world to surrender when you have a killer beam in the attack (must be enemy's last world)
- Periodically check your systems for pirates
- Ensure your worlds have enough weapons and defenses to hold off attackers until starships arrive
- Get extra friendly with one of your potential allies and try to form an alliance
- Speed up union with an ally by passing the Federation Law, trading and offering gifts

- Spend money arming your opponents pirates, especially if they have more starships than you
- Subvert strong enemies which are in alliances to try and break their alliance

Keys and Mouse

Mouse Controls

Left Click	set target/destination (on solar view and star map)
Left Click + Shift key	help on selected item
Left Drag	drag solar view
Right Click	Remove popups

Keyboard Controls

Enter	pause/un-pause game
Alt+Q	quit game
Esc	close popup or text input box
F1	bring up the User's Guide
F3	display previous Help Tip if Help Tip is on screen
F4	display next Help Tip if Help Tip is on screen
F5	quick save game
F9	toggle between hardware/software cursor (troubleshooting)
Tab	bring up the last Help Tip
Space	set up game for input and/or acknowledge message
Left	previous combat maneuver in list (circular)
Right	next combat maneuver in list (circular)
Up	focus on previous unit in your Units list (circular)
Down	focus on next unit in your Units list (circular)
A .. Z	With cursor over Star Map: highlight star names beginning with key
1	With cursor over Star Map: highlight all important destination stars
A	Use Artifacts popup
B	Break from Battle (return home)
C	Starship Docking Configuration/World Production popup
D	Diplomacy popup

Keyboard Controls	
E	Tap Energy popup
F	Finances popup
G	Message/Attack Log popup
H	Hail request
I	Intelligence popup
J	toggle auto/manual solar view centering
L	Load Game popup
M	Toggles between Star Map and Solar View
N	Navigation popup
O	rotate solar view
P	Planets popup
Q	Toggle Unit Flyover info on solar view
R	Research popup
S	change game speed (slow/fast)
T	Train population/crew popups
U	Units popup
V	Save Game popup
W	Weapons popup
X	fire weapons or skip the display of attacks against your unit
Z	zoom in/out solar view

Technical Support

Visit our Starship Unlimited: Divided Galaxies website at Matrix Games (<http://www.matrixgames.com/>) for the latest information on Starships Unlimited: Divided Galaxies.

If you're unable to find the information you need on the website then you can send e-mail to: support@apezone.com

If you have any comments or suggestions about the game then you can send e-mail to: info@apezone.com

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System Requirements

Windows 95/98/Me/2000/NT 4.0 (w/service pack 4.0)/XP

- Pentium(r) II 300 (or equivalent), 64 MB RAM
- 300 MB Hard Disk Space
- 2 MB Video Card (8-bit color, DirectX compatible drivers)
- 16-bit DirectX compatible Soundcard
- Windows-compatible Mouse
- DirectX

Troubleshooting

- Some graphics cards don't display the hardware cursor. Press F9 to toggle the software cursor. Save it as your default from the Game Options popup.

Uninstalling

To uninstall Starships Unlimited: Divided Galaxies

- Go to your Windows Control Panel
- Select the "Add/Remove Programs" icon
- Search for the Starships Unlimited: Divided Galaxies entry and select to delete

Legal Stuff

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Worlds

You start the game with just your home world. It is the cradle of your power. Its population builds and researches the starships, weapons, freighters and everything else that you need to play the game.

A world has a maximum population and number of components slots. Components (or items) consist of things like weapons, shields, power generators and research centers. They may take up from 0 to 2 slots each; therefore, the more component slots the better.

Each world has a production queue that can hold 6 items at a time. The items you choose to add to this queue are based on the technologies you've discovered.

Representation

- **Star Map:** filled circle/square with dot in center
- **Solar View:** planet with up to 4 cities over it

Armor and shield rings are drawn on the imaginary ground plane above each city that has them. Weapons will have to penetrate them before doing damage to the world's components and population. Note that armor components are shared by all cities while each city must have its own shield.

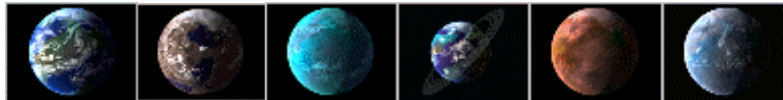
Weapon targeting areas are drawn on the imaginary ground plane above a city. The city may change and the direction of the weapon targeting area may move to track targets. Any targets that move within these areas become valid targets, which the world can fire upon.

Planet characteristics

Planets come in six sizes, six types and have 3 major environments. They can also be harvested for a certain amount of cash each year. The amount of cash is related to the size.

The sizes are (ready for this): Very Small, Small, Medium, Large, Very Large and Huge.

The types have the wildly imaginative names: Type-1, Type-2, Type-3, Type-4, Type-5 and Type-6. All can be colonized but all races prefer Type-1 planets.



Size	Component Slots
Very Small	15
Small	16
Medium	17
Large	18
Very Large	19
Huge	20

Maximum Populations:

Size/Type	1	2	3	4	5	6
Very Small	150	145	140	135	130	125
Small	160	155	150	145	140	135
Medium	170	165	160	155	150	145
Large	180	175	170	165	160	155
Very Large	190	185	180	175	170	165
Huge	200	195	190	185	180	175

A planet's major environment affects the weapon ranges of any unit over the planet. Some weapons have their ranges increase by 5% while others have their ranges decrease by 5% when over a planet of a given major environment. The major environments are: Atmosphere, Gravity and Radiation. Note that while all three environments are usually present, one will stand out over the others. See the Weapons section for details on the environmental biases of each weapon.

Cities

Cities occur over worlds, with a maximum of 4 cities per world, the actual number depends on the world's population. Cities are referred to as Alpha, Beta, Gamma and Delta.

Since cities are so small, they appear as overlays over planets. There are 4 types of cities, shown from left to right below: Normal, Protected, Domed and Underground.



World can only be attacked through their cities. An attack against a city can only destroy that city's population and do limited damage to components (because components are effectively spread through out the cities). To destroy all the world's components you will have to destroy all its cities, one at a time. The exception to this is the Planet Killer. Also, when a world builds armor, it is effectively armoring all of its cities. It is possible to destroy all the world's armor by attacking one city. Contrast this to shields, which are build for individual cities, the first one going to City Alpha, the second to Beta and so on. Note that non-blast-area weapons only do 1/2 damage to city items and population with the exception of armor and shields.

When a world is ready to attack, it places its weapons at the closest city to the target. Weapons are able to rotate in any direction, making a weapon's arc width meaningless. Anything that's in range of a weapon can be locked on to. Contrast this to starships and fighters, which must turn at a fixed rate towards their targets. This makes attacking worlds a risky business as you're likely to fall within the range of a world's weapons more times than you can lock your starships and fighters on a world's cities.

Population

A world's population is a world's most important asset. It grows to a maximum based on the Planet's characteristics. The rate that the population grows is based on the planet's type and technologies it possesses. Birth rate is of the form (people per planet-type years). For example, a world on a type-3 planet would have a birth rate of 1 person every 3 years (without the aid of technology). There are technologies that can increase a world's birth rate, Terraforming being one of them.

Total Population: 180
0♂ 75♂ 101♂ 4♂ 0♂

Training unskilled people adds extra value to a world's abilities. They are displayed as yellow icons on popups. It costs \$5 to train one person.

The more scientists a world has, the more it can aid in research. A world can only aid in research if it has a computer and is not currently producing anything. They are displayed as white icons on popups.

The more engineers a world has, the faster it can produce things and repair damaged components. They are displayed as brown icons on popups.

The more security personnel a world has, the more likely it will catch informants/spies and fend off assault pod attacks. Note that successful assault pod attacks will take over a world when the last city is lost. A successful assault pod attack is where the assault pod crew destroys everyone in the city it attacked and still has some attackers left. This is the basis for the Starship's Capture mission. Assault pods can only target a city without armor or a working shield. They are displayed as green icons on popups.

The more navy personnel a world has, the higher its combat initiative. Units with higher combat initiatives can fire before units with lower combat initiatives. They are displayed as light blue icons on popups.

Relative value of each type of personnel for each of the 4 disciplines. Note that Assault skills also provides the best defense against informant and spy missions.

Personnel	Research	Production	Assault	Naval Combat
Unskilled	4	4	4	4
Scientists	16	4	4	1
Engineer	4	16	1	4
Security	1	4	16	4
Navy	4	1	4	16

Production vs. Research

A world's population can either be aiding its production or the overall research of the current technology. Another way of saying this is that if there is something on a world's production queue then that world is not aiding the current research project.

World Upkeep costs

All but your first world requires a flat upkeep cost of \$20 per year.

A planet's resources double when it's colonized. A world is considered a colony for the first 50 years of its existence. Colonies require additional upkeep based on their size:

Colony Size	Upkeep per year
Very Small	\$25
Small	\$30
Medium	\$35
Large	\$40

Colony Size	Upkeep per year
Very Large	\$45
Huge	\$50

Worlds will also incur upkeep costs for every Laboratory and Research Center they have, \$2 each.

If you need to save money for an important item, you can suspend the upkeep costs to all your worlds through the Finances popup. If a world does not get its upkeep money then it has a small chance of falling into limbo for 1 to 6 months. The chances decrease with the percent paid. While in limbo it will not be able to aid research, build anything and its population may not grow. The report will list all worlds, which went into limbo.

Attacking vs. Capturing

Worlds may be attacked only during times of war. Except for Interstellar Standoffs, you must gather a bunch of your starships and send them to attack an enemy's world. There are actually 2 starship missions against worlds.

Attack mission: used when you intend on destroying the enemy world. In this case, any Planet Killers in your fleet may be used against the enemy world.

Capture mission: used when you intend to capture the enemy world and make it your own. For this you will need Assault pods in your attacking fleet. Any Planet Killers in the fleet will be unavailable for use.

You will reverse-engineer one technology from a captured world, if there are any that you don't yet have.

Passing a Federation Law

To pass a Federation Law, you must have an ally and you must have discovered the Federation technology. Select the world you want from the Units popup. Call up the Production popup (shortcut key C). Select the 'Add' button below the production queue and scroll through the list until you find the button "... Federation Law". Where "... " is the name of your ally. Select the button. The button may be gray if you've already passed a law for your ally or another world is currently doing so (on its production queue). While this is all automated by default, it never hurts to speed things along.

Overall Integrity

A world's overall integrity is an average of the integrity of all its components, but normalized so that a world with all slots filled with undamaged components would give 100% integrity. Therefore, the overall integrity decreases with fewer slots filled.

Minimum Components Required

- **Generator:** for population growth
- **Computer:** for research and communications, also improves weapons targeting

Taking damage

Worlds randomly take damage to their components and population during attacks. A world is destroyed when all of its population disappears or all its components are destroyed. An attack on any one city will only kill a maximum of that city's population. Some types of cities protect better than others. You will also not be able to destroy the last component unless there is only one city left. The exceptions to this are if attacked by a Planet Killer or an internal munitions explosion.

Terraforming

If you colonize a planet greater than a Type-1 then you will eventually need to build Terraforming components if you wish to convert it to a Type-1. If needed, Terraforming components are automatically used after being built and reduce the planet's Type number by one forever after. Multiple Terraforming components may need to be built for a planet to reach Type-1.

Jump Gates



Jump gates are built beside the world that produced them. They allow your starships to jump to any point in the galaxy. It takes two turns to complete a jump. The first turn consists of entering hyperspace while the last consists of exiting it. A jump is marked by a red swirl opening under the jumping starship and the starship falling towards the imaginary ground plane. The starship

will then appear at its destination position but this time it will rise from the imaginary ground plane and the red swirl will close.

Starship will automatically use any Jump Gates to make their journeys faster, unless you manually give them a navigational order.

Automation

The Game Options popup allows you to automate various things related to your worlds.

Let world governors handle combat:

This means they will choose what weapons to fire at what targets. You can manually take control of combat for each individual world at any time via its Focus Unit Settings popup.

Automatically use artifacts at appropriate times:

Use any artifacts in a world's Cargo as needed. For example: using an Invincible Shield artifact when war is declared. Note that it doesn't include using Instant Starship or Instant Research artifacts, as they are more policy orientated and therefore, your responsibility.

Auto build Freighter Routes, Age Labs and Federation Laws:

Pick the best world to build these items. Freighters will be built when a good star system becomes available for harvesting. The appropriate Age Laboratory will be built when the criteria needed for it becomes available. An Age Laboratory is needed to reach a new age of technology. Pass a Federation Law, allowing union with your ally.

Auto upgrade outdated, depleted or badly damaged components:

Update any components on your worlds to better ones when they become available. Replace depleted weapons or badly damaged components when necessary. Only some weapons can get depleted, this occurs when they have fired more than 80% of their shots. A badly damaged component is one with less than 30% integrity.

Starships

Starships are used to explore the galaxy and project your power.

Representation

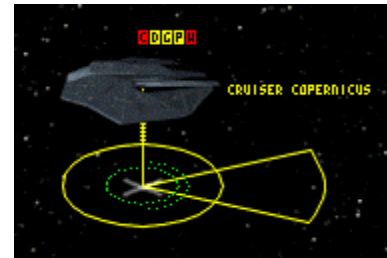
On the Star Map:

A Flashing dot in the color of the player

In the Solar view:

A Starship icon with a line connecting it to the imaginary ground plane. The line is colored in the owner's color.

Pips are placed on the line to help indicate size: (0 pips for Scouts ... 5 pips for Cruisers).



Alert boxes: appear over a starship icon as crew or components get damaged. They will help you decide if you should cancel your current mission and return to one of your worlds for replacements. The following letters are used in the alert boxes and show the overall integrity of a type of components. The types of components displayed are:

- C: computers
- D: drives
- G: generators
- W: weapons

The color of the box indicates the overall integrity.

- A flashing red box indicates that there are no more components aboard
- A red box indicates that the overall integrity of the components is less than 25%
- A yellow box indicates that the overall integrity of the components is less than 50%

The remaining crew size is indicated by showing a P (for Population) inside a colored box. The color of the box is as follows:

- A flashing red box indicates that there is no more crew aboard
- A red box indicates that the crew is less than 25% of its maximum
- A yellow box indicates that the crew is less than 50% of its maximum

Animated hammer: indicates that the starship is waiting for the world underneath it to automatically build (auto-build) it some components.



Armor rings and shield half-rings are drawn on the imaginary ground plane below the starship icon. Weapons will have to penetrate them before doing damage to the starship's components and crew.

Weapon targeting areas are drawn on the imaginary ground plane below the starship icon.

Any targets that move within these areas become valid targets, which the starship can fire upon.

Starship Sizes

Ship Size	Crew Size	Component Slots	Turn rate* (degrees/turn)
Scout	20	8	15
Gunboat	25	9	13
Corvette	30	10	11
Frigate	35	11	9
Destroyer	40	12	7
Cruiser	45	13	5

*Turn rates double with Inertial Dampeners.

Smaller starships are a little harder for weapons to hit (attacker's weapon ranges shrink a bit). Larger ships have slightly slower combat maneuver speeds than smaller ones.

Crew

A starship's crew will automatically be topped up when it reaches a world. You can choose the crew mix for each starship from the Crew Docking requests popup.

The more engineers a starship has, the faster it can repair damaged components.

There is no advantage to having scientists aboard a starship.

The more navy personnel a starship has, the higher its combat initiative. Units with higher combat initiatives can fire before units with lower combat initiatives.

The more security personnel a starship has, the more likely it will fend off assault pod attacks.

Starship Upkeep costs

Starships have a yearly upkeep cost, based on their size and the amount of combat they've done in the year (may double).

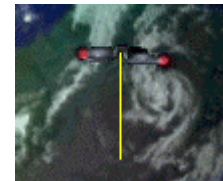
Ship Size	Upkeep
Scout	\$10-\$20
Gunboat	\$14-\$28
Corvette	\$18-\$36
Frigate	\$22-\$44
Destroyer	\$26-\$52
Cruiser	\$30-\$60

If you need to save money for an important item, you can suspend the upkeep costs to all your starships through the Finances popup. Starships that do not get their upkeep costs have a small chance of losing personnel through desertion, up to but not including the last crewmember (the captain). The chances decrease with the combat experience and the percent paid. Desertions are listed on the Finances popup.

Adding Components

Unlike a world, starship cannot build components. It is possible that some of the artifacts in their cargo may be able to 'magically' add some, though.

Starships rely on one of their worlds having a space dock to build them components and transferring them over. The Return-to-World mission is often used to return a starship to its closest world so new components can be added. The Configuration Docking requests popup is used to choose the components you want your starship to have. The space dock will automatically build the starship any components needed to match its configuration list, providing it's unused.



The starship docking configuration acts as a template, not a one-time build request. It essentially sets up the component layout for a starship. You can modify it at anytime to take advantage of new technologies or specific missions.

Unlike worlds, starships have fore and aft sides. This means that you have a choice of which side weapons and shields are placed. Use the Configuration Docking requests popup to adjust side placements.

Minimum Components Required

- **Generator:** to power the drive
- **Computer:** for communications, also improves weapons targeting

- **Drive:** to move the starship

Combat Experience

Combat Experience represents a very important ability, unique to starships. As a starship's crew gains experience in combat its abilities increase as follows:

- Weapons targeting improves (all weapon ranges may increase up to 20%)
- Gains more combat maneuvers
- Increases combat initiative
- Crew are less likely to desert due to lack of upkeep

Missions and Navigation

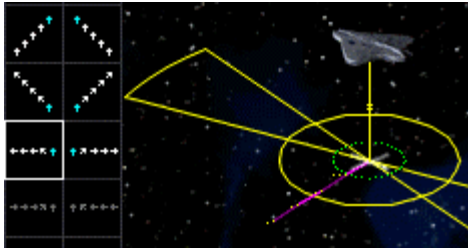
Starships require something to do. If a starship has nothing to do then it will ask you to select a mission for it. The various missions are listed below. Missions consist of a sequence of navigational orders. Navigational orders cannot take place outside the context of a mission.

The only exception is the Hold Position navigational order, which is assigned when you want the starship to wait for something. This order is best left to the starship captains discretion.

Once a mission is assigned, starships use individual navigational orders to move around. Most of the time the starship will string together a bunch of navigational orders without informing you. For example, to get from one system to another may involve cruising to a nearby system with a wormhole, taking the wormhole to the other side, then cruising to the destination star system.

Starships will always choose the fastest route to its final destination. This may include taking wormholes or jump gates.

Combat Maneuvers



Starships enter a state of combat when potential threats are located close by. Except when encountering stationary sentries, a starship will always use combat maneuvers during combat.

A combat maneuver is a string of 4 "thrust and rotate" maneuvers, allowing your starship to position itself into good firing positions. Each combat maneuver lasts 4 turns. Under normal circumstances, starships have terrible turn rates (5-15 degrees/turn). While a starship is physically capable of rotating quickly, to do so under normal conditions would cause massive damage to its crew. Without proper restraints, both crew and objects would be flung against bulkheads. Therefore, a series of well-rehearsed combat maneuvers are learned to increase a starships potential turn rate against targets. The complete series of combat maneuvers must be learned over time. As starships gain combat experience, they gain new combat maneuvers.

Combat maneuvering is one area where a starship needs your input if the starship is under your control during combat. An auto-pause will occur for you to select a combat maneuver. Note that it will have already chosen what it considers to be a good maneuver. You can accept the maneuver by selecting the checkmark button (which may display navigation popup first) or select a different combat maneuver from the list presented to you. The combat maneuver will then be played out within the next 4 turns.

Combat Maneuver Controls

During combat, the navigation popup will present you with all the combat maneuvers your starship knows. Each button displays what the maneuver looks like in each of its 4 phases (each phase takes one turn).

Starting with the cyan starship icon, your starship will move to each subsequent icon every turn. The direction of the cyan icon is always up. This represents your starship's current forward facing.

Note that the starship needn't face the direction it moves to. The starship facing is independent of its movement during combat. This allows a starship to track a target, while it moves along its predetermined course.

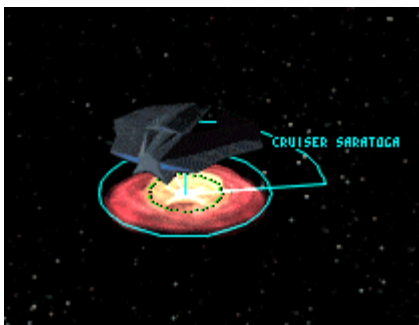
By default the "Match Facing to" will be selected to the target. This means that the starship will be trying to turn to face the target unit during a combat maneuver. You could change this to either "Move" or "Input", as well. "Move" will just follow the combat maneuver as it's listed on the button. "Input" will cause the

starship to rotate to the target position you've selected on the solar view (no dynamic updating during the actual maneuver).

Combat maneuvers are displayed as 4 lines of alternating magenta/purple colors, radiating from your starship. The starship will move along each line, one line per turn until it completes all 4. The dotted, yellow lines, radiating from the ends of each of the movement lines represents the facing the starship will be when it reaches that position. Play around with the "Match Facing to" selections to see how this changes the yellow lines. Same goes for the combat maneuver buttons, select one to see how it lays out around your starship on the solar view. The combat maneuver with flashing graphics is the currently selected combat maneuver.

You may use the left and right arrow keys as shortcut keys to move through your starship's combat maneuvers.

Wormholes



Wormholes may appear naturally at fixed positions in the galaxy. There are normally from 0-3 wormholes in a 50 star galaxy and from 0-4 for larger galaxies.

Wormholes allow near instantaneous travel between two fixed points in normal space. They do not require any energy to use, but you must have the Wormhole Tap device on your starship.

Wormholes are not normally detectable until you discover the Wormhole Tap technology. Once this technology is discovered, all known star systems will reveal their wormhole portals to you.

Use the starship's Explore Wormhole mission to go through a wormhole portal and discover which other portal it connects to. Wormhole portals are listed as possible mission destinations. Note that allies will share any wormhole knowledge they have.

Special circular beacons mark wormhole portals. Opening a wormhole causes the starship to fall towards the imaginary ground plane while a red swirl opens up beneath it. By the next turn the starship is at the other portal, rising up from the imaginary ground plane while the red swirl closes beneath it.

Explore Star System Mission

This mission allows you to explore star systems that you've never seen before, that have artifacts or that have debris.

Select a star system (or position within one) that you want to explore. Go to the Navigation popup and select the "Explore ... System", where "..." is the star system's name. If the button is grayed out then it is not a valid system to explore. Note that you can use the 'Pick an important Mission Destination' button to find any system with known debris in them.

The starship will plot a course for the center of the star system, somewhere near the star. It will then move just off of a planet with an artifact. If combat is needed then it may ask you to provide some combat maneuvers and targeting (if you have taken manual control of combat). Once any sentries are dispatched; it will move over the planet and pick up the artifact. You can find the new artifact in your cargo select the Use Artifact button on the menu bar. It will continue visiting planets until all the artifacts are taken.

If debris exists in the star system, the starship will go to it and pick it up.

The mission will end if no more artifacts or debris exists or if a survey mission requires a Relic that the starship doesn't have.

If the star system has an unknown world in it that belongs to an unknown player, the starship will go to the world to initiate first contact.

Explore Wormhole Mission

This mission allows you to discover where a wormhole goes. You will need to have discovered at least one wormhole and have the Wormhole Tap technology to send a starship on this type of mission. Note that even if you know of the 2 remaining wormholes, you must still go through them to register their connection. Allies share this knowledge.

To choose this mission, call up the Navigation popup. Select a wormhole beacon (they're listed when you select the 'Pick an important Mission Destination' button). Select the "Explore ... Wormhole" button. The "..." is the name of the chosen wormhole. The starship will go to the wormhole beacon and port to the other side. The mission will end and you'll see a wiggly line on the Star Map, connecting the two star systems containing the wormholes.

Patrol Star System Mission

This mission allows you to patrol a star system for defense against pirates or enemy starships. You would send them to patrol resource systems and your worlds, especially if your spies have tipped you off about an enemy mission. If

you have an ally, don't be surprised if it sends a starship to patrol one of your weak worlds, membership has its privileges.

To choose this mission, select a star system and select the "Patrol ... System" button on the Navigation popup. The "..." is the name of the selected star system.

The starship will go to its assigned star system. It will either patrol between the planetoids of the system or patrol back and forth over the world that may be there. It will end the mission after about 10 years if there is no combat or known attack in the system.

Return to World Mission

This mission returns your starship to one of your worlds. Use it when you wish to drop off artifacts, upgrade components or replace crew.

To return home, go to the Navigation popup and select the "Return ..." button, where "..." is one of your worlds. If you have more than one world, then it defaults to the closest. You may override this by selecting a star system that contains the world you wish to return to.

The starship will immediately try to return home, ignoring combat if necessary. The mission will end once it reaches its final destination over the world you'd selected. The world will auto-build any components that the starship needs. Once done, you can select a new mission for the starship.

Returning starships will automatically drop off any world-needed or world-specific artifacts. It will also top up your starship's crew and any components it's carrying (colony pods, assault pods and fighters).

A starship's components are checked against its Docking configuration, any differences are built by the world below. If the starship contains components which are not in its docking configuration then they will either be scrapped or transferred to the world below, depending on the circumstances.

Colonize Planet Mission

This mission allows you to colonize a planet. You may colonize a planet using an Instant Colony Artifact or by transferring the right number of Colony Pods to the planet (using your starships, of course).

To colonize a planet, go to the Navigation popup and select the "Colonize ..." button, where "..." is the planet to colonize. You chose the planet by selecting it from the solar view (double click on a star on the Star Map to take the solar view to that star system). You will only be allowed to colonize the planet if it can be colonized and the starship has an Instant Colony Artifact or you've discovered Colony Pods.

Use the Planets popup to simplify finding, choosing and assigning a colonize mission to your starships. This popup will list the best 20 planets based on some criteria you provide. Selecting a planet in the list will center the solar view on the planet and make it your choice for a mission destination. Selecting the 'Send ... to colonize" button will assign one of your starships to colonize the selected planet.

If your starship has the Instant Colony Artifact then it will proceed to the planet. Once over the planet, it will use the artifact. The artifact will create a colony with a full population on the planet. At this point the mission will be over and you'll be asked to choose a new one for the starship.

If your starship hasn't got the Instant Colony Artifact then it will go to the closest world that isn't too busy and wait for the world to build it some Colony Pods. Once built, the world will transfer the Colony Pods to the starship and the starship will proceed to the planet for colonization. Once over the planet, it will drop off the Colony Pods over the planet. An Outpost may have been created if more Colony Pods are needed. The starship will return to the closest world for more Colony Pods. This cycle will continue until all the required Colony Pods have been brought to the Outpost, at which point the Outpost will be transformed into a colony. The population of the world will match the number of settlers from the Colony Pods. At this point the mission will end.

Note that you don't have to add Colony Pods to your starship configurations when colonizing. The starship captain will transfer any components needed to take on a Colony Pod without your intervention.

A world will only fill a starship with a number of Colony Pods at a time. This number is one for the 3 smallest starships and two for the rest. You may assign several starships to colonize a planet, but some of the starships may be dropped from the mission if your advisors think that there are enough starships already. In that case, assign them a different mission.

When transferring Colony Pods to a starship, the world will try to swap out components from the starship if it hasn't enough room. In the worst case it will scrap components. It will choose what it considers the least necessary components to swap/scrap first. This may be a thing like extra weapons, shields, armor or stealth related components. If you wish to avoid this, make sure the starship has enough room for either one or two Colony Pods before giving it the mission. Note that Colony Pods use 2 slots. If you've discovered Teleporters then you'll use Teleporting Colony Pods that use 1 slot.

Rescue Starship Mission

This mission allows you to rescue crippled or crewless starships. The criteria for whether you can choose this mission depends on what technologies you have.

To choose this mission, select the "Rescue ..." button from the Navigation popup, where "..." is the starship you want to rescue. If the button is grayed out then you cannot rescue this starship. To choose a starship either select one from the solar view (just click on it) or choose one from the 'Pick an important Mission Destination' button. By default, the starship captain will pick the first crippled starship belonging to you that it can find.

If you have Assault Pods and the starship is crewless but not crippled, then you can rescue the starship by launching an assault pod at the starship to take it over. Note that any shields or armor the starship has will not stop the assault pod in this case.

The starship will go to the closest world that either has an assault pod or is building one. If none are doing so, then a world will automatically be assigned this task. The starship will wait over the world until the world has completed building the assault pod and transferred it to the starship. The starship will then proceed to the crewless starship where it will allow you to launch the assault pod. After launching, the crewless starship will have a crew again and both starships will be ready to take on new missions.

If you have Tractor Beams, then you can rescue either crippled or crewless starships. The starship will rendezvous with the crippled starship, engage its tractor beam and tow it to the closest world. Once over the world, it will disengage its tractor beams and await a new mission. The crippled starship will then be repaired and re-crewed based on its docking requests. If the starship belongs to another player, then you'll have to build an assault pod to take it over first.

Raid Resource System Mission

This mission allows you to raid another player's resource system. Its intent is different, depending on whether you're at war with the other player or not.

To choose this mission, select a star system and select the "Raid ... System" button on the Navigation popup. The "..." is the name of the target star system. You cannot raid ally resource systems.

Peacetime Raids

The purpose is to steal the resources from each of the resource system's planets. These resources are collected and stored by automated harvesters to be picked up by its assigned freighter. There may be several years between pickups, allowing you to come in and steal them before the freighter can get to them. In fact, while your starship is in the resource system, the freighter will always leave empty handed, although it will signal your presence. This will always result in a loss of trust towards you. It will also automatically break any Non-aggression pact you have with it.

You can see how many resources a starship is carrying by moving the cursor over the starship icon on the solar view screen. This only applies to you or your ally's starships. Onboard resources will be automatically dropped off when it returns to one of its worlds.

The starship will go to the resource system and stop at each planet to pick up any resources it has. It will ignore any mines or freighters. The mission ends once it has visited each planet.

Wartime Raids

The purpose of raiding an enemy's system is to destroy the enemy freighter assigned to that system. Note that you can only attack the freighter when it's in its assigned star system. If you manage to destroy the freighter then the star system will be lost to your enemy. It will fall into turmoil for a number of years before becoming available for ownership again (by any player).

This mission allows you to destroy your enemy's ability to raise cash. Without cash, a player may be unable build new things and to upkeep its units. Do it enough times and the enemy will be knocking on your door, begging for peace (always a good time to ask for a deal sweetener).

Be aware that resource systems can be mined, with mine fields of up to 4 mines per planet. Mines pack a big punch; it may take only one explosion to leave you defenseless. Not a position you want to be in when you know that the enemy is now aware of your presence and is probably on its way to fight you.

Also be aware that the pirates you or others have been arming may be prowling the resource system. If they have actually received some components from you then they will always be willing to leave. But you may have to ask them, although they will usually bring it up themselves. Note that they will simply move to another resource system owned by the owner of the one they're currently in. In this way, your money spent arming them won't be wasted.

The starship will go to the resource system and stop at each planet to pick up any resources it has. It will continue to do this until the assigned freighter arrives. The starship will move towards combat range and give you the opportunity to attack. Once attacked, the freighter's owner will be alerted. If the freighter leaves the system before you had a chance to destroy it, then the next time it will come back fully repaired. A mission ends when you've destroyed the freighter or after the freighter escapes a few times.

For the times that one of your freighters is being attacked and you don't want the view to change each time it's attacked, make it the Focus unit and toggle the 'Show attacks against' button. You will no longer be bothered about the attacks, but can review them from the Attack log.

Attack Enemy World Mission

This mission allows you to attack with the intent of destroying or forcing the surrender of an enemy world. You should count on sending a lot of starship when trying to destroy a world (at least 2) unless you have a starship with a Planet Killer. You will only be able to choose this mission if you're at war with the world you want to attack.

Setting up an attack against a world can be a little tricky because you need to coordinate several starships so that they arrive at the world around the same time. The logic of the attack mission will handle the synchronization, but you'll have to select them all while the game is paused beforehand as follows.

Select all the starship missions within the same turn (you actually have 2 turns to do this by why risk it). The reason why this is important is that in order to synchronize the starships, the mission logic needs to know which starships are involved. It will wait a turn to allow you to select all your starships or ask an ally to join. This is another reason why you are presented with the message asking if you want to ask your ally to join the attack. Waiting until later could risk that the starships will arrive too early, making them easy targets for the enemy world and its patrolling starships.

You select the mission by selecting the star system (or anything in it) that contains the world you want to attack. You then go to the Navigation popup and select the "Attack ...", where "..." is the chosen world. If this button is grayed out then the world is invalid. Make sure you're currently at war with the owner of the world. Note that you may have to cancel the current mission before selecting the attack mission.

Once all the starships are selected, the attack logic will compute which starship will take the longest amount of time to reach the enemy world. All faster starships will hold their current positions so as to synchronize their ability to reach the enemy world at about the same time as the slower units. Note that they will first leave an enemy star system so as not to have to wait there. They will also return to the closest world to update their configuration if need be. Eventually they will leave to attack the world, reaching a point just off of the enemy world, with hopefully the rest of the starships doing the same. You will then be close enough to initiate combat. Its possible some starships arrive late due to something unexpected, such as having to battle while awaiting their turn to leave for the enemy world. Arriving at the same time is important because you want to try to overwhelm the world and any enemy starships that may be in the system.

A mission ends when the enemy world is: destroyed, surrenders, war ends or all of your starships attacking have been forced to leave the star system.

Capture Enemy World Mission

If you have discovered Assault Pods, you have the option of trying to take over a world instead of destroying it. This mission allows you to do that. Like the Attack Enemy World mission, you should send a lot of starships, probably even more than if you just wanted to destroy it. If one of your starships has a Planet Killer, it will not be used against the world.

It's important to understand that you must use Assault Pods to capture a world. If you send out your starships without any, then you defeat the purpose of this mission. It's also possible that your starships will accidentally destroy the world because it doesn't have the appropriate weapons to destroy/bring down the armor/shields without destroying the city in the process.

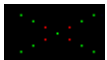
Synchronizing of starships is just as important here as with the Attack Enemy World mission. See that mission for an explanation, remembering that Assault Pods are an important component to have aboard your starships before starting the mission. The game will auto-pause and give each participating starship a chance to add Assault Pods to their docking configuration. Just select the 'Use this configuration!' button if you don't want to add any. It is important that at least one of the participating starships has an Assault Pod, though.

You start the mission by selecting the star system (or anything in it) that contains the world you want to capture. You then go to the Navigation popup and select the "Capture ...", where "..." is the chosen world. If this button is grayed out then the world is invalid. Make sure you're currently at war with the owner of the world.

The logic is the same as the Attack Enemy World mission with respect to reaching the enemy world and initiating combat.

A mission ends when the enemy world is: captured, destroyed, surrenders, war ends or all of your starships attacking have been forced to leave the star system.

Beacons



Beacons mark the destination of various navigational orders: Go To, Cruise To, Thrust To and Jump To.

They exist to provide a convenient marker to select as a target destination so you can send several starships to the same area of space and not bunch them up.

A beacon's details (shown when moving the cursor over the beacon) give a list of the starships using the beacon.

Crippled

A crippled starship is one that either has no drive or has no generator and is unable to fully charge its drive. In either case it's unable to travel interstellar distances.

Remember that, unless you have a fold drive, you need a fully charged drive to either cruise or jump interstellar distances. You can rescue a crippled starship and bring it back to one of your worlds if you have tractor beams.

Overall Integrity

A starship's overall integrity is an average of the integrity of all its components, but normalized so that a starship with all slots filled with undamaged components would give 100% integrity. Therefore, the overall integrity decreases with fewer slots filled.

Taking damage

Starships randomly take damage to their components and crew during attacks. A starship is no longer considered a target if it loses all of its crew. Instead it can be taken over by the first player to launch an assault pod at it (shields and armor won't stop this "attack"). You can also use your tractor beam to tow it back to one of your worlds, which will then repair it. A starship without a crew that is in one of your star systems with a world will still require upkeep costs. This is to discourage the stockpiling of starships.

A starship is destroyed if all its components are lost.

Some attacks (rams) leave the starship spinning out of control. When this happens, all energy is lost and most components go offline. You will have to wait for the starship to settle down before taking control of it again.

Capturing

You can take over a starship by launching a successful assault pod attack against it. The starship is only vulnerable to assault pods if it has no defenses or crew. Note that offline shields don't provide any defense. A successful assault pod attack is one where your security forces kill the starship's crew and live to tell about it. Note that a pirate ship cannot be captured.

You will reverse-engineer one technology from the starship, if there are any that you don't yet have.

Scrapping vs. Self-destruction

Starships may be scrapped when you have too many and you need the cash. The Scrap button is only available when the starship is over one of its worlds. Selecting the button will change the button text to "Scrap Confirmation" in yellow

text. Selecting the button again will scrap the starship, its crew and all its components to the world below. Selecting any other button or removing the Focus Unit Settings popup while the "Scrap Confirmation" is showing will cancel the request.

You would want to manually self-destruct if your starship is stranded and would like to end its upkeep costs, otherwise, scrapping it over one of your worlds would be a better option.

The Self-destruct button is only available if your starship Focus unit has the Self-destruct Mechanism. Selecting the button will change the button text to "Self-destruct Confirmation" in yellow text. Selecting the button again will blow up the starship. Selecting any other button or removing the Focus Unit Settings popup while the "Self-destruct Confirmation" is showing will cancel the request.

Note that a starship will automatically self-destruct if taken over during an assault attack. This prevents the starship from being used against you and any of your technology falling into your enemy's hands.

Coordinating attacks against worlds

Coordinated attacks involving many starships are the best way to defeat a world. Both the Attack Enemy World and Capture Enemy World missions will delay the faster starships while the slower ones move towards the target. Thus ensuring that all starship arrive in the target area around the same time.

Multiple starship attacks can only be coordinated if it is known which starship will be involved. Therefore, it's very important that you select the attack mission for all the starship you want involved in the same turn (Pause the game). There is no problem canceling a starship's current mission and selecting a new one. It is also a good time to ask your ally, if you have one, to join in the attack.

Keeping tabs on Units (both yours and allies)

You can monitor a starship by making it your Focus unit. The easiest way to do this is to select it from the Units popup. If it's currently on the solar view then you can right click its icon.

If you have an ally, then you can see what their starship are up to by calling up the Allied Units popup (from the Diplomacy popup). This popup lists all your allies' starships and their current missions. Selecting an entry will center the solar view on the unit.

Automation

The Game Options popup allows you to automate various things related to your starships.

Let starship captains handle combat:

This means they will choose combat maneuvers and what weapons to fire at what targets. You can manually take control of combat for each individual starship at any time via its Focus Unit Settings popup.

Automatically use artifacts at appropriate times:

Use any artifacts in a starship's cargo as needed. For example: using a Best Armor artifact after losing its armor.

Research

Researching new technologies represents the backbone of the game. Each player can only research one technology at a time. As one technology is discovered it usually introduces new ones. Most technologies have a physical component, which can be used by your worlds or starships to enhance their abilities.

Speeding up Research

The time to research a technology is affected by:

- Population size (larger is better)
- Population skills (scientists are best)
- World components: Laboratories, Research Centers (the more the better)
- Wisdom Artifacts (the more the better)

All personnel take part in research. A world's basic research value is the sum of all its personnel's value towards research (see value table under Population). The BASIC research value is used by Laboratories, Research Centers and Wisdom Artifacts to increase the world's overall ability to do research. E.g. research value = BASIC research value + $1/2 \times (\text{no. of labs} + \text{no. of wisdom artifacts}) \times \text{BASIC research value}$.

Note that a world's research effort is suspended while something's on its production queue.

Ages

You will start the game in one of four technology ages. The ages are Atomic, Fusion, Anti-matter and Singularity. Each age offers new technologies for you to discover.

You will progress from one age to another by building a New Age Laboratory, which can only be built after you've met certain criteria. One of the criteria is that you must have discovered at least 15 technologies from your current age.

The other criterion is that you must have a minimum number of Wisdom Artifacts on your worlds. The number is at least 2, 3, and 4 for the Fusion, Anti-matter and Singularity ages, respectively.

Wisdom Artifacts

Starships automatically transfer Wisdom artifacts when docking over their worlds. On a world, the artifact will provide a 50% increase in the world's research capabilities. More importantly, they are prerequisites for reaching each age.

You must have a certain number of Wisdom Artifacts before you can reach the next age (2, 3 and 4 for the Fusion, Anti-matter and Singularity ages, respectively).

The more Wisdom artifacts you have increase the chance of having a breakthrough with your current research topic (it will only take half the time to research).

Effects of Unrest on Research

Unrest decreases all worlds' research capabilities by as much as 25% (if unrest reaches 100%).

Production

Each world is capable of building all the items that are needed in the game, although worlds in Limbo are temporarily unable to do so. Select the Production button on the menu bar of the world in focus.

Speeding up Production

The time to build an item is affected by:

- population size (larger is better)
- population skills (engineers are best)
- world components: Nano Factories, Replicator Facilities

Lowering costs

The cost of production can be decreased if you have the following technologies:

- Nano Technology
- Replicators
- Holospheres (of starships only)

Building Freighters

Valid star systems for harvesting must be:

- free of artifacts

- without a world
- without an outpost
- unowned

Building freighters is automated, by default, but you may still want to manually select stars and build freighters for them. You do this by:

- clicking on a valid star on the Star Map
- setting the focus to the world that will be building the Freighter
- calling up the Production popup
- selecting the Add button under the production queue
- scrolling through the list until you find the "Freighter for ..." entry, where "..." is the name of the star you selected
- selecting the entry to add it to the production queue

When the freighter is built you will begin collecting resources. The Star Map will show a straight line connecting the resource system to its home star system (the one with the world that the freighter returns to).

Putting informants/spies on other's worlds

If you wish to place an Informant or Spy on another player's world, do the following:

- call up the Intelligence popup
- scroll through the list of known worlds until you find the world you want
- select the world
- select the Recruit Informant or Recruit Spy button

The recruit buttons display the number of informant/spies currently being built for the world. After selection, a world is chosen to 'build' the unit.

Effects of Unrest on Production

Unrest decreases all worlds' production capabilities by as much as 25% (if unrest reaches 100%).

Artifacts

Ancient Alien Artifacts litter the planets of the galaxy. See the section on the Explore Star System Mission on how to get them.

All artifacts provide the owner with benefits. Most provide one-shot benefits like Invincible Shields for the starship or world that uses them. Others give the unit that uses them some special ability that lasts as long as the unit does. Still others give a player some special ability. But some are integral to playing the game. We will only discuss the most important artifacts so you can discover them all on your own.

The Importance of Wisdom Artifacts

Wisdom artifacts should be transferred to your worlds (by returning your starship to them). On a world, the artifact will provide a 50% increase in the world's research capabilities. More importantly, they are prerequisites for reaching each age.

You must have a certain number of Wisdom Artifacts before you can reach the next age (2, 3 and 4 for the Fusion, Anti-matter and Singularity ages, respectively).

More Wisdom artifacts increase the chance of having a breakthrough with your current research topic (it will only take half the time to research).

The Diplomacy and Research popups both display the number of wisdom artifacts you have. The Research popup header will flash when you've met the criteria to build a new Age Laboratory.

Sentry guards

Sentries come in a few flavors; all are designed to guard the artifact that lies on their planets. Sentries can never leave the planet they're on. Rather than discuss each type, I will allow you to discover them on their own. Hold the mouse cursor over their icons on the solar view to get information about them. You may want to pause the game to keep the view from changing.

There may be from 1 to 4 sentries per planet, depending on the value of the artifact. You must destroy all the sentries on the planet before being allowed to take its artifact.

While not considered a serious threat, they can sometimes cause problems when attacking in groups.

Cargo

Your starship will automatically pick up an artifact from a planet that doesn't have any sentry guards. The artifact will be stored as cargo. You can view your artifacts by calling up the Use Artifacts popup from the menu bar.

Shift+Click over each artifact to find out what it does and how to use it.

Advanced Research Artifacts

These artifacts allow you to research advanced versions of weapons and armor.

For example: You've discovered Ceramic Armor and you have an Advanced Research artifact. You can now research: Adv Ceramic Armor. Well, okay, I just throw an "Adv" in front of your latest technologies, but they're still more capable.

Transferring Artifacts between Starships and Worlds

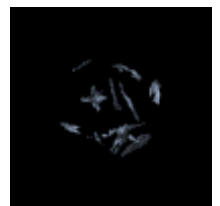
If your starship contains artifacts that can only be used by a world, return to one of your worlds. This will cause all world-specific artifacts to be transferred to the world when you reach it.

You can always manually transfer artifacts between your starships and worlds via the starship's Transfer Artifacts popup. Your starship must be over the world to use this popup.

Debris

A destroyed world with artifacts or starship with either artifacts or on-board resources will be replaced by some debris containing these items. Any starship that comes really close to it will take the items.

The locations of Debris are just one of the many bits of useful information



that threatened pirates will tell you about.

Automation

The Game Options popup allows you to automate various things related to artifacts.

Automatically use artifacts at appropriate times:

Use any artifacts in a starship or world's cargo as needed. For example: using an Invincible Shield artifact when war is declared. Note that it doesn't include using Instant Starship or Instant Research artifacts, as they are more policy orientated and therefore, your responsibility.

Resources

In the game, resources means money. While you may harvest resources, you spend them as cash.

A world naturally generates twice the planets original harvest potential (move your cursor over a planet to see its potential). For example, colonizing a planet with a potential of \$4 per year will result in a world that produces \$8 per year. A world will also harvest all the planets in its system.

You can harvest the planets of other systems by building freighter routes to them.

Returning Money artifacts to your worlds will also give them money.

Building Surface or Deep Mining Facilities will generate an extra \$5 per year each for a world.

All these resources are needed to pay for the yearly upkeep costs of your worlds, starships, informants and spies.

You will also have production costs for every item you build. You are required to have the cash on hand before you can queue up the item for production.

When you have a lot of spare cash then you can spend it on:

- Arming other player's pirates
- Encouraging unrest on other player's worlds
- Defending against unrest on other player's worlds
- Defending unrest on your own worlds

Production costs

Worlds must have money to build items. The amount of money needed is shown when selecting the Add button under the Production queue of the Production popup.

To the left of the entry name is the amount of cash needed to build the item. You must have this amount before you can select the item and place it on the production queue. The cost will be reduced immediately.

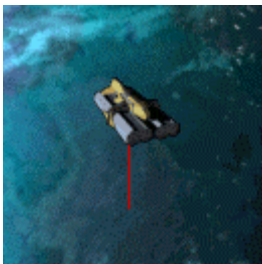
If you decide to scrap this item while its still on the production queue, your world will get back all of the production cost.

Upkeep costs

Yearly upkeep costs are taken from each world to pay for things like: colonies, world connections, some world-specific components, starships, informants and spies.

You may suspend the upkeep costs of the various groups (worlds, starships, and spies) through the Finances popup. This may be more advantageous than scrapping starships or retiring spies.

Freighters



Worlds can collect the resources of other star systems by building freighters for them. Freighters are named after the resource system they harvest. A star system can only be harvest by one freighter at a time. The star system being harvested becomes part of the player's space. A line connecting the world to the resource system is displayed on the Star Map to show this relationship.

Each freighter will spend its time harvesting the resources of one star system and returning them to its base world. The time it takes to go between its resource system and its base world depends on the distance and the speed of its drives. A freighters speed is equal to the player's best drive's cruising speed. Note that interstellar travel is measured in months or even years, therefore, a base world may not see its resources from a distant resource system for several years. Freighters can only carry a given amount of resources each trip. Type-1 Freighters can carry \$10 per trip, Type-2 \$20 per trip, all the way up to Type-10's which can carry \$100 per trip.

You can find out the average amount of resources you lose each year, compared to the optimal amount, by moving the cursor over one of your resource systems on the star map. You can also look at the Graphical Report popup to get the overall amount being lost. Research faster cruise drives, jump gates, better freighters and build colony worlds closer to your resource systems to maximize

your cash flow from your resource systems. Don't expect resource routes that span across the galaxy to be very profitable.

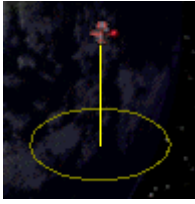
Automated resource harvesters are located on each of the planets of a resource system. Resources pile up until they are removed. While this is normally done by the freighter assigned to the system, other starships may try to steal them. Your chances of catching them in the act depend on you spotting them. The longer the time lag between freighter pick ups, the better their chances of stealing your resources without being caught. Of course, you could assign a starship to patrol the star system but there will never be enough starships to go around. Your best solutions are to build freighters for nearby star systems, research the fastest drives possible and periodically patrol your most distant resource systems.

Raiding

Raiding is the act of sending starships to steal the resources of another player's resource systems. Starships will automatically drop off any resources they collected when returning to one of their worlds. Getting caught will result in some loss of trust in you. It will also result in the automatic breaking of a Non-aggression pact.

During wartime, it also involves destroying the freighter that is assigned to the resource system. Destroying the freighter will also, symbolically, destroy the freighter route. The star system will be in turmoil for a number of years, unable to be owned by anyone. The amount of damage a freighter can take is based on the age its player is at. Higher ages can take more damage. Freighters can only be attacked during a wartime raid and only within its resource system.

Protecting with Mines



Mines provide a means of defending your resource systems without having to send starships. They also provide added protection to your worlds.

Mines are vulnerable to point-defense. A starship with good point-defense can destroy them before they can detonate.

Building a lot of mines alleviates this problem by overwhelming a starship's point-defenses.

You can place mines over all the planets of a resource system with up to 4 mines per planet. You can also place up to 8 mines over your worlds. Mines will move towards any starship that is over the planet and is attacking one of your (or ally's) units. Mines have a blast radius; anything within the radius will get damaged, except for other mines. Mines are smart enough not to go off when friendly units are within its blast radius. Units within the blast radius receive less damage, the farther out they are, up to 1/2 the maximum.

To build mines over your world, focus on the world, left-click on the world (this will place a flashing disk over the world). Call up the Production popup, select the Add button at the bottom of the Production queue and scroll through the items until you see the "... Mines" button. If the button is gray then you don't have enough cash to build it or you already have 8 mines over the world and no better mines to upgrade with.

To build mines over the planets of one of your resource systems, select the star from the Star Map and follow the same procedure as explained for worlds, except you can only have up to 4 mines per planet. Up to 4 mines will be built, depending on the number of planets and number of mines already in the star system.

You can upgrade the mines in a system when new mine technologies become available. The newer mines will try to fill in any missing mines, up to the maximum allowed. After which it scraps the older mines and replaces them with new ones.

Note that mines are quite expensive and can take a while to build alot of them. You should consider heavily mining your worlds and the most important resource systems first.

Exploration

When you start a new game, you know little about the space around your home star system. Your best computer sensors may know of the position of just a few of the closest stars scattered around you, but nothing of the planets that they may contain. Your people have built their first starship to explore the stars around them.

Unknown stars

While your best computer sensors know the general shape of the galaxy, they don't know the exact position of the stars within. For this you must equip your worlds and starships with computers so they can discover the location of nearby stars.

Each computer can locate unknown stars within the number of parsecs of its Sensor Level. By adding more computers or researching more powerful computers, you will be able to increase the detection range. As you detect new stars they are permanently added to your star map.

Unexplored stars

While you might know the location of a star, you may not know what kind of solar system it has. For this you must either send a starship there or get the information from another player. Unknown stars show up as unfilled circles on the Star Map.

Clearing of artifacts

Ancient Alien Artifacts litter the planets of the galaxy, ready to be snatched up by the first starship to reach them.

In order to take an artifact your starship will need to complete the Survey Mission displayed when viewing the artifact's target details (hold cursor over artifact icon on solar view).

Some artifacts don't require a survey missions but most will require you to destroy the sentries guarding the artifact. On rare occasions you may be required to return a Holy Relic that you must find on some other planet.

Sentries will provide your starship with its first combat experience. Most sentries will provide little effort to destroy providing your starship has a few weapons and possibly some armor or shields.

All artifacts provide the owner with benefits, with some providing one-shot benefits like Invincible Shields for the starship or world that uses them. Select the Use Artifact button on the menu bar to view and use artifacts.

Star systems that haven't been completely cleared of artifacts cannot become resource systems or be colonized.

Colonization

Creating new worlds for your race to live on increases your chance of survival and expands your research and production base. But colonization can be an expensive and lengthy process and every new world adds a drain on your treasury.

The main way of occupying space in this game is by building freighter routes to nearby star systems and not by colonizing every star system you encounter. You will need these resource systems to generate enough cash for your worlds to prosper.

What planets you can colonize

You must also have discovered Colony Pods or have an Instant Colony Artifact.

For a planet to be colonized, it must be in a system that:

- Isn't owned by anyone
- Doesn't have any artifacts
- Doesn't have another planet being colonized
- Doesn't have a world in it

How to colonize

The starship Colonize Planet mission is used in colonizing planets. Colony pods are essential in colonizing a planet unless one of your starship has an Instant Colony artifact.

The number of colony pods needed to colonize a world is a function of the planet's type. Type-1 planets take 1 colony pod, type-2 take 2 colony pods and so on.

The building and handling of colony pods is automated. You need only pick which planet you want to colonize (by making it your target destination) and pick a ship or two to go on a colonize mission (use the Planets popup to simplify this).

Outposts



Outposts are temporary structures that exist while colonizing a planet. They exist to hold all the colony pods needed to finish the colonization. Once all colony pods are received; the Outpost is transformed into a colony world. The number of colony pods is equal to the planet's type number. Type-2 planets require 2 colony pods, for example.

Outposts last 200 years before they are lost, although its unlikely it would take you that long to colonize the planet, forgotten outposts will fade away.

Outposts can be attacked only when at war with the owner. They can be destroyed with 50 GWs of damage.

Diplomacy

Eventually you will make first contact with other players. The Diplomacy popup allows you to interact with these players. You can compare yourself to other players here. In order to see another player's information you obviously have to meet them, but more to the point, you need to have at least one informant or spy on one of the other player's worlds. The exception is if you're allies, then no informant/spies are needed.

Trust

Trust is used as the basic measurement to gauge relationships between players. This is represented as a percentage, where 0% means no trust and 100% means total trust.

Note that in your case, the trust refers to how your people feel about another player's race. If the other race treats you badly, the people will resent the other player and lower their trust of them. You can only influence your people's trust of others.

Giving gifts and trading are simple ways of increasing trust. It goes a long way when the trust is low; having less of an effect when trust is already high. The same applies when you make threats, trust goes down a lot when trust is currently high, but doesn't change things much when trust is low.

Getting caught doing something sneaky has a large, negative effect on trust. This includes spying, raiding, aiding pirates in another's system and encouraging unrest in another's worlds.

Signing pacts and treaties gives a one-time increase in trust. Breaking pacts and treaties has the opposite effect.

Trust creeps towards 0% or 100% as follows: same philosophies (increases), different philosophies (decreases), rivals (decreases), neutral (increases), allies (increases), warring (decreases), jealousy over the fact that they have more star systems than you do (decreases), resentment over the fact that they own a disputed star system that is much closer to one of our worlds than theirs (decreases), one or both of us has passed a Federation Law for the other (increase), I've passed a Federation Law for the other years ago and the other hasn't reciprocated (decreases), fighting a common enemy (increases) or fighting a natural ally (decreases).

Formal Relations

Besides trust, you also have formal relations with other players. You may be Rivals, Neutral, an Ally, form a Federation or at War with others. Technically there's also unknown, but you wouldn't know it at the time. The formal relation affects your rules of engagement with each other and your diplomatic options. You cannot declare war on an ally, for example.

The Diplomacy popup lists the formal relations the other player has with all the other players both it and you know. You're relationship with them is always listed first and is highlighted in bold letters.

As your goal is to win the galaxy, you must eventually be the last player remaining. You can do this by annihilating, conquering or forming a Federation with other players.

Rivals

This will be your relation after first contact. Both players will engage in combat when their units meet, except if in a system with a world. No combat occurs within systems with worlds unless at war. First contact will set your initial trust of one another. If the other player shares your philosophy then each will have an initial trust of from 50-60%, otherwise it will be from 30-40%. Being Rivals has a negative influence on trust.

Neutral

This requires that a Non-aggression pact be signed with the other player. Your trust for the other must be greater than 25% to ask for a non-aggression pact. Being Neutral has a positive influence on trust over time. Your units will never engage in combat when they meet each other.

Alliance

An Alliance agreement cannot be asked for unless you both are of the same philosophy and your trust for each other is greater than 50%.

You are restricted to one ally at a time, while this sound restrictive (and it is), it makes for more interesting relations. Each potential ally becomes a potential suitor for an alliance. Competition between potential allies can become fierce, with some unallied suitors going so far as seeding a little unrest into the weaker member, just to try and break up the alliance.

Players that are strong are less likely to want alliances. But once alliances form, the desire for others to form alliances become stronger. The power balance in the galaxy can change quickly.

An Alliance requires an Alliance agreement between the two players. Allies are forced to harmonize their relations with others. For example: if one is at war with a given player, then they both must be.

Your units will never engage in combat when they meet each other.

Both may ask the other to help defend a world under attack. You may ask your alliance partner to send ships when you plan attacks or capture missions against your enemy.

Being allied has a strong positive influence on trust over time. In fact, it's the only way to achieve 100% trust. This is important because you must have 100% trust before you can pass a Federation Law, allowing you to seek a Federation with your ally.

Once a Federation Law is passed, it is up to your ally to reciprocate. You may need to help things along by offering gifts to push your ally's trust of you to 100%. Giving them the Federation technology doesn't hurt either. The point is you must work to achieve a union with an ally. Of course, this may not be your goal, in which case you're free to abuse your alliance, but don't expect it to last long.

The Diplomacy popup will display 'FED' in its info area to indicate that a player has passed the Federation Law for the other.

You should be aware that resentment grows after a while when one has passed the Federation Law for the other but the other hasn't reciprocated. This is something to consider, as you need a fair amount of money to pass a Federation Law. During wartime, your ally is probably spending a lot of money fighting the war. Unless they're rich, it's not the best time to pass a Federation Law.

Federation

Forming a Federation unites the units of both sides into one force, one player being absorbed into the other. In your case, you will absorb the other player, no matter who asked for the Federation.

To ask for a Federation with another, you must be allies, must each have passed a Federation Law for the other and each have 100% trust in the other.

War

There are many factors that cause a player to declare war on another. The less trust a player has for another, the greater the chance of that player declaring war. When trust falls to 0% then it's only a matter of time.

During war, both units will engage in combat whenever and wherever they meet. Both may send their starships to raid the other's resource routes and to attack or capture each other's worlds. Basically, anything goes.

War, not surprisingly, causes a big negative in trust over time. But if war does end, trust returns to both sides. Trust for each other is set as if a first encounter (30-40% for natural enemies or 50-60% for natural allies), thereby allowing a chance for a new beginning.

When a war ends, both sides must leave each other's star systems. You will not be allowed to stay, unless your starship is disabled.

Effects of Unrest on Relations

The more unrest a player has, the less stable it is, resulting in it being more likely to break treaties and pacts. Other natural allies may lower their evaluation of players with a lot of unrest with respect to forming or keeping alliances with them.

For each year that unrest is over 50%, there is a chance that a player's philosophy will change. This chance increases to a maximum of 25% if unrest reaches 100%. If subverted, all the player's relations are broken and trust is reset to first contact values.

Natural Allies and Enemies

You can use the concept of natural allies and natural enemies to your advantage. Any players that share your philosophy are considered natural allies. Your people will have a good first impression of them, tend to trust them more and can form alliances and Federations with them.

Conversely, your people will have bad first impressions of players who don't share your philosophy and will tend to mistrust them more. You cannot form alliances or Federations with natural enemies. Therefore, you should concentrate on keeping relations good with natural allies while you're weakening your natural enemies.

The Final War

A game will eventually be whittled down to two players. The two players will fight it out until one wins the game by defeating the other.

Trust will fall to 0% to force a war between the last two players after each has explored all the star systems. If the final two players were allies, then the alliance is broken.

Representation

A player is represented by a unique starship icon, face icon, name and color. In your case, you can choose these characteristics before you start a game from the New Game popup. You may change any of the race names from the Game Options popup.

During a game, you may add other race's face and starship icons by capturing their starships and worlds. For example, capturing one of an enemy worlds will result in all starships built from that world to be in the style of that world's race. Only the color of the starship drop lines will indicate the starships belong to you.

A player's name can take 3 forms, using Humans as an example, we could have: "Human Race", "Human Empire" or "Human Federation". All players start off with the first form. They get labeled an Empire if the last player merged with them was

through conquest (capturing their last world or getting them to surrender). Players get labeled a Federation if the last player formed a Federation with them.

First Contact

At the start of the game, you will know of no other races in the galaxy but your own. When your unit enters the same star system as another player's then a first contact will be established. The game will auto-pause to tell you this and indicate if the new player is of your philosophy or not.

First contact may occur without a physical meeting if another player or pirate shares information about your existence with another. As unreciprocated contacts aren't allowed, you will also receive knowledge of their existence.

Knowledge of each other's worlds and space

While you may know of another's existence, you may not know where any of their worlds are. This is important because without this knowledge, you'll be unable to hail them unless one of your starships happens to chance upon the other.

Without knowledge of one of their worlds, you will be unable to:

- Declare war
- Offer gifts
- Trade
- Threaten

You or the other player may request the swapping of information on each other's space to rectify this. Doing so will give you knowledge of all their star systems containing worlds and their resource systems.

Arming Another's Pirates

You can arm another player's pirates with your latest technologies.

A button exists on the Diplomacy popup that allows you to spend a fixed amount of money, \$5 per year, on each of the other player's resource systems that you know of. What this does is allow any pirates that are preying on those resources to equip their starships over time with some of your technologies. Remember that a resource system with a pirate in it is taking away all the resources that system would normally provide its owner with. Therefore, strengthening the pirates could make it a lot more challenging to get rid of. If a pirate receives enough upgrades it can seriously threaten the owner's starships.

Think of it as having the pirates fight some of your battles for you, all with little risk or money.

Use this against players you wish to weaken or dislike because when playing with this option set on the New Game popup, the computer players will use it against you. Either way, you're always free to do so.

This provides a good reason not to let pirates remain in your systems for too long at more advanced levels. The longer they remain, the more components they receive through another player's aid.

In case you're concerned about raiding an enemy's resource system that may contain a pirate that you've armed, rest assured that they will leave if you ask them to. Even better they will just move to another of your enemy's resource routes, thereby, continuing to wreak havoc on your enemy.

Losing the last world

Once a player loses all their worlds, they will not be able to colonize new ones. This effectively ends the game for them. If no ally exists then all their starships become orphans and play as Berserks. Having a bunch of enemy ships that are hell bent on destruction isn't always a good thing. Without a world to place an informant or spy on, you won't know their plans.

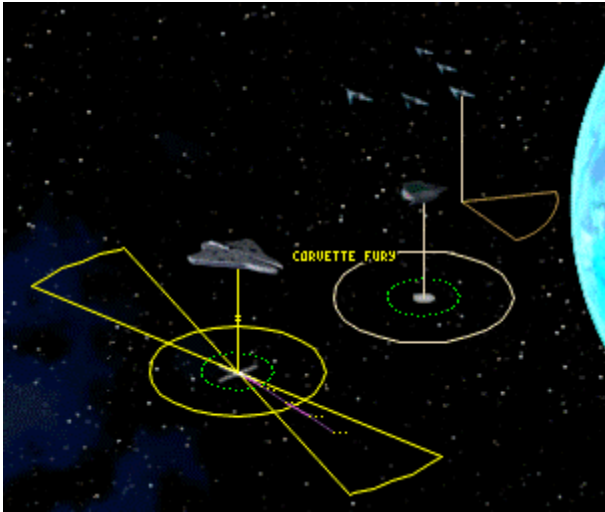
You may want to consider destroying as many of an enemy's fleet before destroying their last world. Or even better try to capture an enemy's last world instead of destroying it. That way, if successful, all their units will come under your control (plus you'll have a new world and possibly some technologies).

Without any upkeep, the orphaned starships will gradually lose all their crew and components. When all starships are lost, the player is removed from the game. If it's your starships, then the game will end when all your starships have lost their crews.

If the player had an ally, the orphaned starships will join the ally's fleet. Even worse for their enemies, they will do so without ever burdening its new owners with upkeep costs. Again, think of trying to capture instead of destroying an enemy's last world. If it's your starships involved, the game will end prematurely for you as your ally takes over your starships. Hopefully they'll have better luck with them than you did.

Note that when a starship is made upkeep-free, it remains that way forever. This special status, "No upkeep costs", is displayed when moving the cursor over the starship's icon on the solar view. Look for it when you're considering taking over a starship.

Combat



Tactical Combat is an integral part of the game. Units enter a state of combat when potential threats are located close by.

Combat can be a highly interactive part of the game when you have manually taken control of a unit's combat. To do this you must select the "World's governor/Starships captain is handling combat" button on the Focus Unit Setting popup and toggle it to "I'm handling combat". The game will auto-pause during the following events:

- **Your weapons have locked onto a target, ready to fire**
You will be given the opportunity to fire your weapons or hold off for a better shot. Note that weapons will be fired right away so you can see their effects.
- **Your starships await a navigational order**
You are given a choice of navigational orders, including combat maneuvers. You are free to pick something or accept the default given.

Note that if an enemy is firing multiple weapons at one of your units, you can shorten the display of these attacks by selecting the space bar WHILE a weapon attack is in progress. This will cause a summary of all the attacks to be logged on the Attack Log popup (selected from the Logs popup) without showing the actual attack animations. You may also disable the recentering of an attack against one of your units by toggling the "Show attacks against" button on the Focus Unit Settings popup.

When you can fire

Units that carry weapons have weapon fire areas. Any valid targets that fall within these areas may be attacked. As weapons take time to lock onto targets, it is possible for fast units to pass through weapon fire areas untouched. Overall, you are forced to think more about weapon combinations and to plan your combat maneuverings.

When one of your starships or worlds is allowed to fire on a target the following may occur (depends if you've taken control of combat for the unit):

- The game is auto-paused with a message indicating a unit is ready to fire
- The Focus unit will be automatically changed to the attacker unit

- The solar view will be centered on the attacker unit
- All the attacker's weapon fire areas will flash on the solar view if able to fire
- A target will automatically be selected for you
- One of your weapons will automatically be selected for you (in case you have many)
- The Weapons button will display "Fire" instead of the regular weapons icon

Selecting the Fire button (or hitting the space bar) will fire the active weapon. The active weapon is the one that is flashing on the Weapons popup.

You will see the results of the attack. If the target is capable of point-defense and its applicable, it will try to stop your attack. If your attack hits, then any damage will be assigned immediately. A line displaying the result will be displayed at about the point of the attack on the solar view and in the Attack Log.

If you have more weapons that can fire on a target, the above procedure will occur until you have no more weapons to fire or you cancel the attack phase by selecting the event acknowledgement button, the one with the checkmark (or you hit the return key).

You may change the active weapon by selecting a different one from the Weapons popup. Note that any grayed out entries are invalid.

Point Defense

Some weapons can be stopped with point-defense weapons during their attacks. All of the target's weapons that are capable of point-defense and are available will fire in an attempt to block the attacker's weapon from hitting. If one of your point-defense weapons is successful then the attack is blocked and causes no damage.

Attack Initiative

Attack Initiative is the ability for one unit to fire its weapons before another. You can find out a unit's rating by moving the mouse cursor over the unit. It displays the rating in cyan as a percentage. Higher percentages are better. Use this rating to compare against other units. The following factors affect Attack Initiative:

- Size of population or crew (bigger is better)
- Population skills (Naval personnel are best)
- Starship combat experience

Rules of engagement

There are strict rules to when and where units can engage one another in combat. Starships will always engage sentries and pirates whenever they meet.

How units belonging to the various players react depends on their relations with one another, but in general:

- No combat occurs within star systems with worlds unless the two units are at war with one another.
- Freighters cannot be attacked unless they are in their resource systems and you're at war with one another.

With respect to player relations:

- **Rivals:** Both players will engage in combat when their units meet.
- **Neutral:** Your units will never engage in combat when they meet each other.
- **Allies:** Your units will never engage in combat when they meet each other.
- **War:** Both players will engage in combat when their units meet. Both may send their starships to raid the other's resource systems. Both may send their starships to attack or capture each other's worlds. Basically, anything goes.

Pirates

Pirates use starships that are not owned by any player and prey on player's resource systems. If a pirate starship makes one of your resource systems home, then it will raid the system resources until driven out. You should eventually send one of your starships to patrol any of your resource system that contains pirates. See the Finances popup for a list of your resource systems and cash lost due to pirates. Star systems with pirates have white cross-bones drawn around them on the Star Map. Star systems with pirates are considered important Patrol mission destinations. You can hold the Ctrl-1 key combination down while the cursor is over the Star Map to highlight all important destination stars. You can move the cursor over these highlighted stars and see if they contain any white starships/fighters in them (the stars will be square).

Although a nuisance (as pirates are usually never well equipped), they do have their uses. You can threaten a pirate for information. If they accept your threat they will tell you something useful and then leave peacefully. The information they tell you can be about an important, unknown artifact, debris, wormhole or world. The artifact and debris information is displayed when selecting the 'Pick an

important Mission Destination' button on the Navigation popup until no longer valid.

Starships vs. Worlds

Worlds have an advantage over starships in that they can attack from any of their cities and rotate their weapons to instantly track a target. This in effect gives worlds several firing points that come in handy when reducing starship shields and armor.

Rather than let starships plant themselves before cities, like they can do when attacking some sentries, they are forced to rely on combat maneuvers to position themselves relative to a world's city. This makes for more dynamic battles.

Troop Combat

Troop combat occurs when one unit launches an Assault pod at another. A world's cities or a starship are valid targets. Assault pods can only attack a target without armor or a working shield (see Rescue Starship Mission for the exception).

Assault pods will be created with 10 Security personnel aboard.

An "Add crew to Assault Pod" button is available on the Focus Unit Settings popup for each assault pod aboard the focus unit that doesn't have a full crew compliment of 10. Starships will automatically have their assault pod crews topped up when returning to one of their worlds.

The more security personnel a target has, the more likely it will repel an assault force. Troop battle terminates when one of the participants populations is decimated.

Point-defense weapons can kill some or all of an attacking assault pod's force. Teleporting Assault Pods are immune to point-defense weapons.

If an assault pod reaches its target but loses the troop combat then the assault pod is lost.

You can take over a starship by launching a successful assault pod attack against it. If the assault force kills all the crew then it takes over the starship and becomes the new crew.

If the starship has the Self-destruct Mechanism then there is a 90% chance that the starship will blow up before the assault force can take over. If the attacker has the Bomb Disposal Mechanism then this decreases to 50%. In either case, if the starship blows up the remaining assault force escapes to the attacker.

Attacking cities to capture the world is the basis of the Capture Enemy World mission.

You can destroy a city by launching a successful assault pod attack against one. If the assault force kills the entire city's population then the city is destroyed and the remaining assault force return to the attacker. If it's the last city then the assault force takes over the world and becomes its population.

If the world has the Self-destruct Mechanism then there is a 90% chance that the world will be destroyed before the assault force can take over. If the attacker has the Bomb Disposal Mechanism then this decreases to 50%. In either case, if the world is destroyed the remaining assault force escapes to the attacker.

Assault pods can be placed on standby when you don't want to use them (via the Weapons popup). Otherwise, the game will launch them at an in-range target or give you the opportunity, if under manual control.

Fighters

Each Fighter Unit actually consists of a squad of up to 10 fighters. A pilot represents each fighter in the squad.

Fighters can be launched from either worlds or starships. The unit carrying the fighters is referred to as the mother.

The Focus Unit Settings popup may display a button for each fighter squad that has less than 10 pilots. Selecting the button will try to take pilots from the mother's crew/population. The Focus Unit Settings popup may also display a button, which allows you to manually transfer a squad to another of your units. The other unit must be able to hold the fighter squad. You select the other unit from the solar view by clicking on it.

The Weapons popup has a button that puts all onboard fighters on standby so they will not trigger an attack.

Fighter Representation



A Fighter squad is displayed with a line connecting it to the imaginary ground plane on the solar view screen. It is colored in the owner's color. A weapon targeting arc is drawn on the imaginary ground plane facing forward.

Fighter Attack Damage

Each GW of damage kills one pilot, up to a certain ceiling.

All non-fighter weapon attacks against fighters can only kill a maximum of 2 pilots no matter how powerful the attack.

Fighter to fighter attacks can kill more, depending on the difference in technology between the two squads. For example, Nuclear fighters can kill up to 3 pilots when attacking Nuclear fighters; Singularity fighters can kill up to 6.

Fewer pilots in a squad mean fewer fighters to attack, resulting in lower attack damage given. A fighter must return to its mother after attacking 7 times, at which point it gets recharged and possibly topped up, then relaunched.

Fighter Missions

Fighters are capable of 3 missions:

- Attack a given target
- Return to their mother
- Transfer over to a suitable unit

By default, fighters are automatically assigned the first two missions. But by toggling the 'Squad Leader is handling combat' button on the Focus Unit Settings popup, you can take manual control of choosing what to attack and when to return for repair and reloads. Note that you'll have to select the fighter as your focus unit first.

Fighters under squad leader control may change their targets after launch. They will favor attacking enemy fighters if no other fighter has picked them up. After fighters it favors cities if attacking worlds or starships which have taken a beating lately.

A fighter's speed is a function of your best drive's speed factor.

Play Style

Fighters under Squad Leader control (the default) will return to its mother to get topped up after a certain number of losses. The number depends on its play style:

- **Defensive:** returns after 6 losses
- **Balanced:** returns after 7 losses
- **Aggressive:** returns after 8 losses
- **Berserk:** the fighter fights to the end, only returning for refueling

When its Mother Unit is Taken Over

Fighters will be taken over by the player that takes over its mother. If its mother is destroyed the fighter will try to find another within the area, if it can't it will revert to Berserk play until it runs out of ammo or fuel.

Planet Killer Artifacts

This is a rare artifact that can only be used by starships. Selecting the artifact from the Use Artifact popup creates a one-shot weapon on board the starship. This weapon kills the world belonging to the targeted city, in one shot, unless it has Invincible Shields. This is such a powerful artifact that you may want to exclude it from games using the Game Options popup.

It makes a good bargaining chip to get worlds to surrender. You may ask a player to surrender only if you're at war with that player. The other player will not even consider surrendering unless it's down to its last world and that world is under attack by you. Even then it the odds will be low that it will accept. The odds decrease the more you threaten with it.

Intelligence

Intelligence is gathered via Informants and Spies. Passively, they are capable of giving you important information on your opponents and uncovering attacks against you or your ally. Actively, you may have them do sabotage, espionage, steal cash and steal Wisdom Artifacts.

The importance of Intelligence

If you place Informants or Spies on the other player's worlds you will be presented with a lot more information, via the Diplomacy popup. Due to the vastness of the galaxy, informants and spies play an important role in the game.

It cannot be stressed enough how important having informants and spies are on enemy worlds. It is very unlikely you can patrol all your star systems; therefore, having the early warning that informant/spies can give you is invaluable. Their information allows you to send starship to where they are needed, to defend your star systems while your enemy is still in the early stages of mobilization.

Why you should have 100% coverage

You recruit Informants and Spies to gather information about the player whose world they are based on. They are most effective when you have at least one informant or spy on each of the other player's worlds. 100% coverage is ideal. The coverage you have for each player is shown on the Diplomacy popup.

Informants and Spies can discover when players are planning missions against you. Its chances increases with the number of informants and spies it has on a player's worlds as well as its coverage. Each informant/Spy has a 15% chance of uncovering a mission when you have 100% coverage of the other player's worlds. The missions include raids against one of your resource systems, attacks against one of your worlds and capture missions against one of your worlds. If you have an ally, it can also discover these types of missions for you as well.

For example: If the other player has one world and you have one informant on it, then you have 100% spy coverage. If on the other hand, the player has 2 worlds and you only have one informant on one of the worlds, your spy coverage is 50%. This will cut your ability to intercept acts against you or your ally by 50%.

Informants vs. Spies

Informants are a cheaper, less capable version of Spies. Spies are capable of these extra missions: Sabotage, stealing Money and stealing Wisdom Artifacts.

Costs of Intelligence

Each Informant has an upkeep cost of \$2 per year.

Each Spy has an upkeep cost of \$4 per year.

Any informant/spy, which doesn't get its upkeep costs, may desert (30% chance when not at war with world its based at versus a 15% chance when at war). Use the Finances popup to withhold upkeep costs.

Espionage

Both Informants and Spies can be asked to try and steal some technology by calling up the Intelligence popup for the informant/spy and selecting the Espionage button.

The informant/spy will continue the mission until successful or caught. It has a 15% chance of success each turn. The chance of getting caught is shown on the left side of the Espionage button.

Sabotage

There are actually 3 categories of sabotage. The types of missions are listed on the Intelligence popup.

Sabotage: will try to destroy any component with a 15% chance of succeeding each turn.

Sabotage Weapons: will try to destroy a weapon component, with a 10% chance of succeeding each turn.

Sabotage Defenses: will try to destroy a defense component (armor or shields), with a 10% chance of succeeding each turn.

The spy will continue the mission until successful or caught. The chance of getting caught is shown on the left side of the Sabotage buttons.

Stealing Wisdom Artifacts

Spies can be asked to try to steal a Wisdom Artifact via the Intelligence popup. The "per turn" chance of success is 5% plus 1% for every Wisdom artifact over 4 the other player has.

The spy will continue the mission until successful or caught. The chance of getting caught is shown on the left side of the Stealing Wisdom Artifact buttons.

Stealing Money

Spies can be asked to try to steal from \$1000 to \$2000 from another player via the Intelligence popup.

The spy will continue the mission until successful or caught. It has a 15% chance of success each turn. The chance of getting caught is shown on the left side of the Stealing Money button.

Retiring

The Intelligence popup allows you to retire an informant or spy, usually to save on upkeep costs.

Counter-intelligence

The only way to counter informant and spy missions against you is to improve each world's security. This is best done with Security personnel, although your entire population plays a part in improving your Assault capabilities. A world's Assault capability doubles as its counter-intelligence capability.

The Intelligence popup lists all the missions an informant/spy can do. The percentage to the left of the mission name is the odds of getting caught. This value increases the more security the world has as well as just after a successful mission against the world.

Getting Caught vs. Getting Identified

Even after getting caught, the odds of identifying whom the informant/spy works for are slim (its the same as the odds of getting caught).

For informants, this is because they are recruited from sympathizers among the local population of the world they're based on. This also explains why they're unable to do the more dirty forms of spying, which is reserved for Spies.

For Spies, this is because they are kidnapped from among the local population of the world they're based on and brainwashed to serve you. Nobody said the spy business was fair.

Note that an identified informant/spy acts as a threat against the player it was spying on.

Automation

The Game Options popup has a button pertaining to intelligence gathering.

Auto handle Basic Informant/Spy Coverage

Your advisors will handle the building of informant and spies so as to give 100% coverage on all opponents' worlds. If given a choice, they will place the less expensive informants, as they are equal to the task of gathering information as the more expensive spies are. If you wish, you may supplement these informants with more informants or spies.

Politics

In this game, politics refers to the use of money to effect unrest, both creating it and suppressing it.

The Two Philosophies

Each player in the game has one of two philosophies. The philosophies are "Little Endian" and "Big Endian".

Players that share the same philosophy are considered to be natural allies. They will start off with trust higher than 50% and are more likely to increase their trust of each other over time. They may form an alliance with one another, which may eventually lead to a union.

Players that don't share the same philosophy are considered to be natural enemies. They will start off with trust lower than 50% and are more likely to decrease their trust of each other over time. They may not form alliances with one another.

Player's may try to subvert another's philosophy by spending money each year to encourage unrest among its worlds. They may also do the opposite and try to discourage unrest (including among their own worlds). There are buttons on the Diplomacy popup to do this.

Unrest

Unrest occurs on your worlds when the forces against your current governing philosophy grow enough to start causing problems. Unrest is always caused by other players supporting these anti-government forces.

The Diplomacy button will flash when you or your ally have moderate unrest.

Subverting your enemies

The more money spent trying to subvert your opponents, the more likely to increase their unrest.

Theoretically, spending \$1000 to support unrest on an opponent's worlds could cause 100% unrest in that year. Put another way, for every \$100 spent on subversion results in from 0 to 10% unrest that year.

There are buttons on the Diplomacy popup to do this.

There is a chance that spies will detect when another player is trying to subvert them or their ally. This will be seen as a threat. The more threats a player gets from another, the more its trust decreases and the more likely it is to declare war.

The computer players will only try to encourage unrest in others if this option is set on the New Game popup. You are always free to do so.

Supporting you and your friends

You or a natural ally may discourage unrest amongst your worlds by spending money each year in support of your philosophy. There are buttons on the Diplomacy popup to do this.

Automation

The Game Options popup has a button pertaining to unrest.

Auto handle Pacification of Unrest:

Your advisors will handle the spending of cash to suppress unrest on your worlds. They are purely reactionary and will not spend money to try and subvert or support another player's current philosophy.

Communications

You can have dialogs with various units in the game to discuss diplomacy or to get pirates to leave your resource systems. The speaking style chosen from the New Game Setup popup will be used in these dialogs as your voice.

How to Hail another Unit

You can hail another player's world by selecting it from the solar view and selecting the Hail button from the Communications popup. If the focus unit is a starship then it must be in the world's star system.

An easier way is to select the Hail button on the Diplomacy popup after choosing the appropriate player (again, from the Diplomacy popup).

To hail another player's starship or a pirate, use the Hail button on the Communications popup. You will then select the pirate from a list of possible units to talk to. All units listed are within the same star system of the focus unit.

Why another player may not want to talk

If the Hail button on the Communications popup is grayed out, it means there are no units you can talk to. If you're focused on a starship it could simply be due to the fact that there are no units within the same star system, as starship communications cannot span star systems.

If you are focused on one of your worlds and don't know the location of any opponent's worlds, the Hail button will be grayed out. It could also be grayed out when no other player wants to talk to you. This is because you've tried each of their patients with two consecutive rejected requests or threats. You will either have to wait a few years for them to cool down or change your formal relations as such: end the war, sign a non-aggression pact or form an alliance. Of course, without being able to hail them, they will have to make the offers.

Communication Dialogs

The Communications popup displays dialogs between two units. It only appears if another unit is hailing one of yours or you have made a hail request. If the latter, then this popup will display a "Hail ..." button. The "..." will refer to the target unit. You may change the target unit using the "Change Hail" button.

Selecting the "Hail ..." button creates a dialog between both units, with the Hail button being replaced with some dialog choices.

Choosing one will cause the other unit to respond and so on until the dialog is finished. You can then hail another unit and start a new dialog. When you're

finished, select the flashing button at the Checkmark button (or hit the return key) to continue the game.

Talking to Pirates

Pirates are worth talking to. They may hail you to say they will leave the system without fighting you. If it's your system they're in, then you'll get back its resources without a fight.

You can also threaten a pirate for information in exchange for it's leaving the system peacefully. If it accepts then you will acquire information on one of the following:

- Another player's space
- Knowledge about a wormhole
- Location of unclaimed artifacts
- Location of debris

The first item will update the Star Map. The last items will appear in a list when you select the 'Pick an important Mission Destination' button on the Navigation popup, as they make good mission destinations.

If your starship is taking a beating, then you can ask the pirate to let you leave peacefully. If you're luck and it does, then the pirate will continue stealing your resources.

Diplomatic Paths

Communications between non-pirate units is always about diplomacy. Diplomatic dialog has 3 main paths it can follow.

Improving Relations

This represents the first path you can take with respect to diplomatic relations.

This path allows you to:

- Swap star knowledge
- Sign treaties
- End wars
- Offer gifts
- Ask your ally for help

All but the last two paths allow the responder to ask that the initiator give up something for their agreement. This is referred to as a deal sweetener.

Swapping information about each other's space

This path is available if either one doesn't know where the other's worlds are. Besides trading locations of your worlds you also trade the location of all the stars you own (e.g. resource routes).

You may not always want to reveal your worlds as the other player would now be able to attack/capture them. On the other hand they would never be able to hail you unless both your units happen to be in the same star system. This could prevent you from getting trade offers and gifts.

In general, you should swap star information with potential allies and not with potential enemies, unless you can get a deal sweetener out of it.

Offering Gifts to others

You may give the following gifts to other players, in order of increased trust:

- Wisdom Artifact
- Star System
- Technology
- \$500

Getting help from your Ally

You or your ally can ask for help in defending one of your worlds. The world must currently be under attack (spies may have warned you about it).

If you need the help then hail from the world under attack if more than one of your worlds is currently under attack. Otherwise, the world under attack is used. Don't expect a response after asking your ally for help. If it has a starship not engaged in a more important mission (defending one of its own worlds), it will send help.

If your ally hails you for help, it is not expecting a yes or no answer from you either. It is just informing you. You will have to decide if you're going to send any starships (by telling them to patrol your allies system). You can view the Allied Units popup (from the Diplomacy popup) to decide if it's worthwhile. The allied star system under attack will appear when selecting the 'Pick an important Mission Destination' button on the Navigation popup while valid.

You can ask your ally to join an attack on an enemy world if you have at least one starship already selected for an attack mission against the world. The ally will respond by telling you how many starships it will send, if any. You may decide to stop your attack if your ally can't spare any starships.

You should wait for the auto-pause, which always occurs after an attack mission has been accepted; this is to ensure you can synchronize properly with your ally starships and any of your own. You wouldn't want your ships to arrive before your allies, at least not by too much. This could cut the effectiveness of the attack. Therefore, hail your ally after you get the auto-pause message about asking your ally to join your attack.

It's recommend that you always wait for the auto-pause message before hailing your ally to join an attack because even though you've selected attack missions for your starships, they may still be requests and not discernable by your ally as an actual attack mission yet. They become real attack missions when your starships have gone through the movement phase. You may not always notice this. Note that your ally will never ask you to join any of its attacks; this allows you to control the tempo of the war.

Asking your ally to join your capture mission against an enemy world works just like the above.

Some reasons an ally might not join your missions are:

- It's already involved in an attack/capture mission of its own
- It's too busy defending worlds
- It feels that the combined strength of the starships you're offering and the starships it can offer (if any) would be too weak to succeed.

Sweetening Agreements

You may want to select an item to sweeten the current request being offered from the player hailing you. There will be a "Change Deal Sweetener" button at the bottom-right of the communications popup to do so.

The first button on the "Change Deal Sweetener" popup allows you to choose an item from the other player to seal a deal. Note that you will not be presented with a Sweeten Agreement choice on the Communications popup if this button is colored red.

You may ask the other player for:

- \$1000
- Technology
- Star System
- Wisdom Artifact

Technology is either chosen by your advisors or manually by you. If manually, then a popup listing the other player's technologies appears if you select the "... Technology" button. All technologies that the other player has to offer are not

grayed out. The more advanced a technology is, the less likely the other player will agree to part with it.

A star system is either chosen by your advisors or manually by you. If manually, then you must select one of your opponent's resource systems from the Star Map and select the "... System" button to make it your choice.

For example, you are warring with a weaker opponent. That opponent hails you and asks for an end of hostilities. You decide that you would also like to end the war but would like to get something for agreeing. Therefore, you call up the "Change Deal Sweetener" popup and cycle through the top button to see what you can get. You then go back to the Communications popup and ask them to give you the item you selected. If they agree then the war ends and you get the item requested, otherwise, they refuse and the war continues.

Things your opponents don't like to hear

This represents the second path you can take with respect to diplomatic relations.

This path allows you to:

- Start wars
- End alliances
- End non-aggression pacts
- Make threats
- Ask a player to surrender

Starting a war

Starting a war causes both you and your ally to go to war with the other player and its ally.

Ending an Alliance or Non-aggression Pact

Ending an alliance or non-aggression pacts will apply to your ally as well as the other player's ally.

Threatening others

You may threaten a player for something from this path. If you're at war with the other player and it accepts, the war ends.

If you're not at war, it's going to hold the threat against you no matter what the outcome. This results in a lessening of trust and an increase chance of starting a war with you. If the threat is accepted you get the item.

Asking a player to surrender

You may ask the other to surrender under the following conditions:

- The enemy has one world
- You're currently attacking that world
- You have a Planet Killer in the attack or have done a lot of damage to the world (Overall Integrity and population less than 33%)

Player's with the same philosophy are more likely to surrender, but either way, the odds tend to be low. If a player surrenders, the other player conquers it. If it is you who surrenders then you lose the game.

Trading with others

This is the third main path of a diplomatic dialog. It allows you to trade with the other player. It may not be available if nothing has been preset for trading. There will be a "Change Trade" button at the bottom-right of the communications popup to do so.

Either star systems or technology may be traded. It is also possible to trade cash for either. The computer will balance a trade with cash when the value (or perceived value in the case of technologies) of one side is different from the value of the other side.

For star systems, the player with the lower valued star system will have to pay 'penalty' times the difference between the two stars. The penalty is \$25 if the players are at war or rivals. Its only \$10 if the players are allies and \$20 otherwise. The penalty is doubled if only one star system is involved.

For technology trades the penalties are the same as with star systems but the differences are between the computer's perceived values of the technologies. Technologies from higher ages are valued higher. Powerful weapons tend to be highly valued.

You or the other player can ask for a counter offer which always consists of increasing or lessening the penalty by half (whatever's more advantageous). If there was no penalty then an extra \$100 is asked for.

Choosing items to threaten for

The Communications popup will have a "Change Threat" button at the bottom-right of the communications popup that allows you to choose what you want to threaten the other player for.

The first button on the "Change Threat" popup allows you to choose an item from the other player to threaten for. Note that you will not be presented with a 'Threaten for' choice on the Communications popup if this button is colored red.

You may ask the other player for:

- \$1000
- Technology
- Star System
- Wisdom Artifact

Technology is either chosen by your advisors or manually by you. If manually, then a popup listing the other player's technologies appears if you select the "... Technology" button. All technologies that the other player has to offer are not grayed out. The more advanced a technology is, the less likely the other player will agree to part with it.

A star system is either chosen by your advisors or manually by you. If manually, then you must select one of your opponent's resource systems from the Star Map and select the "... System" button to make it your choice.

Sweetening Agreements

You may want to select an item to sweeten the current request being offered from the player hailing you. There will be a "Change Deal Sweetener" button at the bottom-right of the communications popup to do so.

The first button on the "Change Deal Sweetener" popup allows you to choose an item from the other player to seal a deal. Note that you will not be presented with a Sweeten Agreement choice on the Communications popup if this button is colored red.

You may ask the other player for:

- \$1000
- Technology
- Star System
- Wisdom Artifact

Technology is either chosen by your advisors or manually by you. If manually, then a popup listing the other player's technologies appears if you select the "... Technology" button. All technologies that the other player has to offer are not grayed out. The more advanced a technology is, the less likely the other player will agree to part with it.

A star system is either chosen by your advisors or manually by you. If manually, then you must select one of your opponent's resource systems from the Star Map and select the "... System" button to make it your choice.

For example, you are warring with a weaker opponent. That opponent hails you and asks for an end of hostilities. You decide that you would also like to end the war but would like to get something for agreeing. Therefore, you call up the "Change Deal Sweetener" popup and cycle through the top button to see what you can get. You then go back to the Communications popup and ask them to give you the item you selected. If they agree then the war ends and you get the item requested, otherwise, they refuse and the war continues.

Deal away/for Items

The bottom-right of the Communications popup will often have a button allowing you to choose items that will appear in the dialogs between you and the other player (when trading, for example).

All these buttons call up popups which have a few things in common. Either you or your advisors can pick things to deal away/for. The description below applies to the Trade popup as all others are just subsets.

The select star system buttons gives you a choice of letting your advisors choose a star system to both deal away and deal for. Your advisors will only choose disputed stars.

For choosing a "deal away" star, they will pick one of your stars that is worth the least to you.

For choosing a "deal for" star, they will pick one of the other player's stars that's worth the most to them.

If you wish to override your advisors' choices then toggle this button for manual selection. Go to the Star Map and choose one of your resource systems (e.g. must not have a world on it) and select the previously grayed out "Deal away system" button. If the button remained gray then you have not chosen a valid star to give away (like maybe it doesn't belong to you?). Do the same for the "Deal for" but choose one of the other player's stars.

The select technology button gives you the choice of letting your advisors choose technologies to both deal away and deal for. They will always deal away a technology that they consider of less worth than what they try to deal for. They will protect your best 8 technologies from trading unless it's with your ally, in which case they'll protect your best 4 technologies.

An exception occurs if you have the Federation technology and your ally doesn't. Your advisors will try to deal it away if you trust your ally by at least 85%. This is to encourage your ally to form a federation with you, which as you play the game, you'll come to realize is a very good thing.

The last exception occurs when either you or your ally has passed a Federation Law, allowing union with the other. To keep your ally happy and push both your trusts to the 100% level, your advisors will forgo protecting your top technologies when trading with your ally.

All this is moot if you select the manual option of this button. The "Deal away/for technology" buttons will no longer be grayed out. You can then select each one to pick the technologies you wish to trade.

The four "deal away/deal for" buttons have already been explained above but I will quickly summarize. If you let your advisors select, then these buttons will remain gray and reflect their choices. If you choose to manually select which stars systems to deal, then the first two buttons are selectable only if you've selected appropriate star systems from the Star Map. You must then select the appropriate button for the selected star to become part of a deal. The same goes for manually selecting which technologies to deal except the last two buttons become available for selection. Selecting a button brings up either a list of your technologies or the other players. Any entry that isn't grayed out may be selected and can become part of a deal; the last two buttons will reflect your choices.

Pending Requests

Hailing another unit does not happen in real time. Most of the time when you select a "Hail" button, it will just hold your request for later. If the game is paused for another reason then the Hail button will go gray to indicate that it's received your request.

With the game running you should get an auto-pause within the next 1/2 second or less. During this pause, you will be able to use the Communications popup to talk with the other unit.

Assuming you've hailed the other unit, you can continue hailing them without having to wait by reselecting the Hail button at the end of the dialog.

Note that you will get auto-pauses when other players are trying to hail you. You can ignore their requests by selecting the button at the flashing Checkmark button twice (once to call up the Communications popup and again to continue the game) or go to the Communications popup and respond.

Technologies

Technologies are divided into 4 Ages. You are only able to research technologies equal to or earlier than your current age. But it's also possible to get them through ancient alien artifacts, espionage, trading, gifts, captures and federations.

Components are designed to fit within the component slots of your units (Worlds and Starships for the most part). Note that Components are often referred to as Items when on worlds. Components can take up from 0 to 2 slots. The vast majority takes up one slot. Components that don't take up any slots are called devices. A unit can only have one device of a specific kind at any one time. A few artifacts give your units devices that get used up with just a few uses.

You'll spend a lot of time deciding what to put in your starships and worlds. Components get destroyed, used up and made obsolete by newer technologies. You may freely scrap components and replace them at anytime, although starships have to be over one of their worlds. This means your units can be outfitted with different components to meet any challenges you may come across. You will never have to scrap one "class of starship" for another. Starships use the Docking Requests Configuration popup to decide what should be placed aboard it.

Many components require energy to work, with most of these requiring a full charge. Without energy these devices go offline and are unable to function. Make sure you always have enough generators to recharge your components.

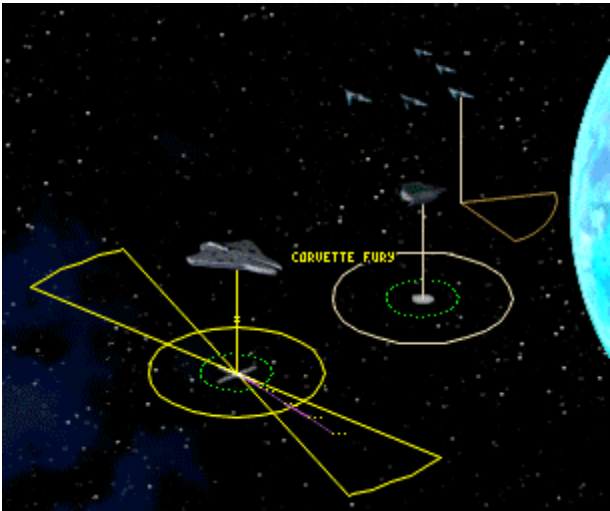
Armor



Armor is used to stop weapons from damaging your starships and cities. Armor protects both the fore and aft sides of a starship and all the cities of a world. After shields, armor takes the full brunt of an attack. If the armor is completely vaporized (0% integrity) then all weapon attacks damage the components and personnel of the unit.

Armor shows an orange, shimmering glow around the unit being struck. This represents the armor material being vaporized. If you see the orange glow disappear then the armor was destroyed in the attack and some of the damage got through.

Armor rings are drawn on the imaginary ground plane of the unit that has it. Armor gives 360-degree coverage for both cities and starships. Contrast this with a shields ability to provide only fore or aft (180 degree) coverage for starships. An Armor ring is shown in 4 colors depending on its integrity:



- Green: 76-100%
- Yellow: 51-75%
- Orange: 26-50%
- Red: 0-25%

	Ceramic Armor	Adv Ceramic Armor	Active Armor	Adv Active Armor	Power Armor	Adv Power Armor	Bio Armor	Adv Bio Armor
Age	Atomic	Atomic	Fusion	Fusion	Anti-matter	Anti-matter	Singularity	Singularity
Damaged Absorbed (GW)	60	90	120	180	240	360	480	720
Repairable	No	No	No	No	Limited	Limited	Yes	Yes

Ceramic Armor: Capable of stopping up to 60 GW.
Simplest armor available. Ceramic layers break or are vaporized off.
Unrepairable.

Age: Atomic

Slots used: 2

Requires: Nothing

Leads to: Adv Ceramic Armor, Active Armor

Makes obsolete: Nothing

Adv Ceramic Armor: Capable of stopping up to 90 GW.

An advanced version of Ceramic Armor.

Unrepairable.

Age: Atomic

Slots used: 2

Requires: Ceramic Armor, Advanced Research Artifact

Leads to: Nothing

Makes obsolete: Ceramic Armor

Active Armor: Capable of stopping up to 120 GW.

Uses explosives to exert force against impacts.

Unrepairable.

Age: Fusion

Slots used: 2

Requires: Ceramic Armor

Leads to: Adv Active Armor, Power Armor

Makes obsolete: Ceramic Armor, Adv Ceramic Armor

Adv Active Armor: Capable of stopping up to 180 GW.

An advanced version of Active Armor.

Unrepairable.

Age: Fusion

Slots used: 2

Requires: Active Armor, Advanced Research Artifact

Leads to: Nothing

Makes obsolete: Active Armor, Adv Ceramic Armor

Power Armor: Capable of stopping up to 240 GW.

Weak field able to trap and recover 10% of the damaged armor material.

Capable of limited self-repair.

Age: Anti-matter

Slots used: 2

Requires: Active Armor

Leads to: Adv Power Armor, Bio Armor

Makes obsolete: Active Armor, Adv Active Armor

Adv Power Armor: Capable of stopping up to 360 GW.

An advanced version of Power Armor.

Capable of limited self-repair.

Age: Anti-matter

Slots used: 2

Requires: Power Armor, Advanced Research Artifact

Leads to: Nothing

Makes obsolete: Power Armor, Adv Active Armor

Bio Armor: Capable of stopping up to 480 GW.

Able to grow back 0.1% of damaged armor material per turn.

Capable of complete self-repair.

Age: Singularity

Slots used: 2

Requires: Power Armor, Terraforming

Leads to: Adv Bio Armor

Makes obsolete: Power Armor, Adv Power Armor

Adv Bio Armor: Capable of stopping up to 720 GW.

An advanced version of Bio Armor.

Capable of complete self-repair.

Age: Singularity

Slots used: 2

Requires: Bio Armor, Advanced Research Artifact

Leads to: Nothing

Makes obsolete: Bio Armor, Adv Power Armor

Computers

Computers have several functions.

- First, they allow a world to participate in research.
- Second, they allow communication between units.
- Third, they increase the ranges of a lot of the weapons.
- Forth they are used to discover new stars. The sum of their Sensor Levels determines their scan range in Parsecs.
- Fifth, world-based computers can detect attacking fleets at Sensor Level ranges.
- And last, when playing anything but the Beginner Player Skill, they aid in internal scans of other units. Starship and world units have sensor levels, which are the sum of all their computer's sensor levels. When playing at the Intermediate Player Skill, your units can only do internal scans of other units when their sensor levels at least match that of the unit they're scanning. For the Advanced Player Skill, your units must have better sensor levels than the units they're scanning.

All computers use 1 slot. Note that the Subspace and Dimensional Computers nullify the effects of targets equipped with IR and Radar Stealths.

	Electronic Computer	Optical Computer	Bio Computer	Subspace Computer	Dimensional Computer
Age	Atomic	Atomic	Fusion	Anti-matter	Singularity
Weapon Range Enhancement	2%	4%	6%	8%	10%
Sensor Level *	2	4	6	8	10
Requires	Nothing	Electronic Computers	Optical Computers, Cloning	Bio Computers	Subspace Computers
Leads to	Optical Computers	Wormhole Tap, Bio Computers, Nuclear Standoffs	Subspace Computers, Terraforming	Dimensional Computers, Jump Gate, Trans-warp Drive	Jump Drive
Makes Obsolete	Nothing	Electronic Computer	Optical Computers	Bio Computers, Enhanced IR Sensors, Enhanced Radar Sensors	Subspace Computers

* Also the scan/detection range in Parsecs.

Drives

Drives are used to propel starships, freighters and fighters around. Most drives are classified as cruise drives. They accelerate to a maximum cruise speed (10 times their speed factor) and decelerate to zero when stopping. This is only used when moving relatively long distances, as the drive must be fully charged to cruise.

The alternative to Cruise drives are Jump drives which don't cruise long distance but open artificial wormholes between two point in normal space. Both types of drives move at their speed factors when going a short distance (Go to, Thrust, combat) and don't require a charge. The more cruise drives a starship has, the faster it can cruise. For non-cruise speeds, especially combats, the best speed factor is used.

Drives include Rocket, Electromagnetic, Graviton, Warp, Trans-warp, Jump and Fold. Also included here are technologies that help a starship move around: Wormhole Taps and Jump Gates. Here are the details:

	Rocket Drive	Electromagnetic Drive	Graviton Drive	Warp Drive	Trans-warp Drive	Jump Drive	Fold Drive
Age	Atomic	Atomic	Fusion	Fusion	Anti-matter	Singularity	Artifact
Energy Needed (GW)	20	40	80	160	320	640	0
Speed Factor	1	2	3	4	5	3	1
Parsecs/year *	1.5	3	4.5	6	7.5	N/A	N/A
Cruise Drive	Yes	Yes	Yes	Yes	Yes	No	No

* Just an approximation.

Rocket Drive: Least advanced drive. Achieves motion by expelling matter. Requires 20 GW charge for cruising. Speed factor: 1

Age: Atomic

Slots used: 1

Requires: Nothing

Leads to: Electromagnetic Drive

Makes obsolete: Nothing

Electromagnetic Drive: Generates an electromagnetic wave to achieve motion. Requires 40 GW charge for cruising. Speed factor: 2

Age: Atomic

Slots used: 1

Requires: Rocket Drive

Leads to: Wormhole Tap, Graviton Drive

Makes obsolete: Rocket Drive

Graviton Drive: Generates a graviton wave to achieve motion. Requires 60 GW charge for cruising. Speed factor: 3

Age: Fusion

Slots used: 1

Requires: Electromagnetic Drive

Leads to: Warp Drive

Makes obsolete: Electromagnetic Drive

Warp Drive: Generates a warp field which pushes a ship into subspace (compressed normal space). Then uses a standard graviton wave to achieve motion. Requires 80 GW charge for cruising. Speed factor: 4

Age: Fusion

Slots used: 1

Requires: Graviton Drive

Leads to: Trans-warp Drive

Makes obsolete: Graviton Drive

Trans-warp Drive: Improvement over Warp drive, able to go deeper into subspace. The deeper into subspace a ship can go, the more compressed normal space becomes. Requires 160 GW charge for cruising. Speed factor: 5

Age: Anti-matter

Slots used: 1

Requires: Warp Drive, Subspace Computers

Leads to: Interstellar Standoffs

Makes obsolete: Warp Drive

Jump Drive: Creates artificial wormholes which allow near instantaneous travel between two points in normal space. Unable to cruise, non-cruise speeds match the Graviton Drive.

Age: Singularity

Slots used: 1

Requires: Jump Gate, Holospheres, Dimensional Computers

Leads to: Nothing

Makes obsolete: Nothing

Wormhole Tap: Able to detect and open natural occurring wormholes. Wormholes connect two fixed points in normal space thus allowing near instantaneous travel between these points.

Age: Atomic

Slots used: 0

Requires: Optical Computers, Electromagnetic Drive

Leads to: Jump Gate

Makes obsolete: Nothing

Jump Gate: Creates artificial wormholes which allow near instantaneous travel between two points in normal space. Can only be build just off of a world.

Age: Anti-matter

Slots used: 0

Requires: Wormhole Tap, Subspace Computers

Leads to: Jump Drive

Makes obsolete: Nothing

- Technologies [p92]
- Research [p41]

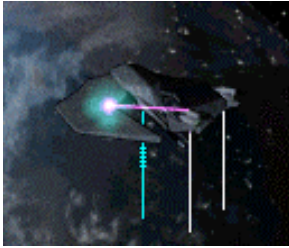
Generators

Generators generate energy for use by other components. If there is any left over energy then it will be stored by the generator, up to its given capacity.

All generators use 1 slot.

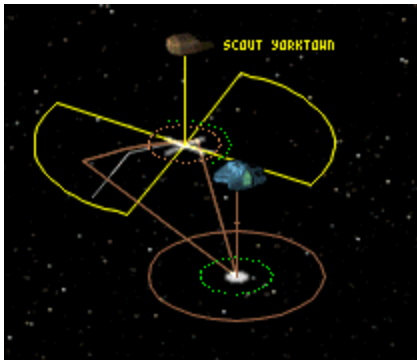
	Nuclear Generator	Fusion Generator	Anti-matter Generator	Singularity Generator
Age	Atomic	Fusion	Anti-matter	Singularity
Storage Capacity (GW)	10	20	40	80
Charge Rate (GW/turn)	1	2	4	8
Requires	Nothing	Nuclear Generators	Fusion Generators	Anti-matter Generators
Leads to	Fusion Generators	Anti-matter Generators	Singularity Generators	Nothing
Makes Obsolete	Nothing	Nuclear Generators	Fusion Generators	Anti-matter Generators

Shields



Energy Shields are used to stop weapons from damaging your starships and cities. Starships can have fore and an aft shields. A world can build a shield for each of its cities, starting with Alpha city. Shields store energy that is then dissipated by weapon attacks. If the energy falls to 0 then all weapon attacks get through the shields and pass on to damage either armor or the components and personnel of

the unit.



Some shields can stop some types of energy better than others. See the Weapons section for details on the different energy types.

Shields show a light blue, shimmering sphere around the area being struck. This represents the weapon energy being dissipated. If the blue light disappears then the shield energy was completely discharged in the attack and some of the damage got through.

Shielded starships are represented by drawing half-rings on the imaginary ground plane. Shielded cities show full rings. This is because starships require a fore and aft shield for complete coverage. Exceptions are the 2 artifact-based shields. A rotating dot is displayed to indicate the dynamic nature of shields and to differentiate it from armor.

A shield ring (or half-ring) is shown in 4 colors depending on how much charge it has:

- Red: 0-24% charge
- Orange: 25-49% charge
- Yellow: 50-74% charge
- Green: 75-100% charge

	Laser Screen	Particle Screen	Plasma Screen	Disruptor Screen	Single-phase Deflector	Multi-phase Deflector	Absorption Shield
Age	Atomic	Atomic	Atomic	Atomic	Fusion	Anti-matter	Singularity
Energy Use (GW)	30	30	30	30	60	120	240
Damage Absorbed (GW)	EM: 30, Others: 15	Kinetic: 30, Others: 15	Plasma: 30, Others: 15	Wave: 30, Others: 15	First type: 60, Others: 30	120	240

Laser Screen: EM energy is dissipated by hitting and vaporizing tiny metal beads which are suspended in an electromagnetic field over the hull/city. Magnetic field holds in material so it can reform to a solid. Takes 30 GW to charge. Offers 30 GW protection against EM and concussion weapons, 15 GW against all other types of weapons.

Age: Atomic

Slots used: 1

Requires: Nothing

Leads to: Single-phase Deflectors

Makes obsolete: Nothing

Particle Screen: Generators are able to quickly dissipate particles over entire hull/city. Takes 30 GW to charge. Offers 30 GW protection against kinetic and concussion weapons, 15 GW against all other types of weapons.

Age: Atomic

Slots used: 1

Requires: Nothing

Leads to: Single-phase Deflectors

Makes obsolete: Nothing

Plasma Screen: Generators are able to quickly dissipate plasma away from hull/city. Takes 30 GW to charge. Offers 30 GW protection against plasma and concussion weapons, 15 GW against all other types of weapons.

Age: Atomic

Slots used: 1

Requires: Nothing

Leads to: Single-phase Deflectors

Makes obsolete: Nothing

Disruptor Screen: Generators are able to quickly dissipate wave energy away from hull/city. Takes 30 GW to charge. Offers 30 GW protection against wave and concussion weapons, 15 GW against all other types of weapons.

Age: Atomic

Slots used: 1

Requires: Nothing

Leads to: Single-phase Deflectors

Makes obsolete: Nothing

Single-phase Deflector: Deflects all types of weapon energy away from hull/city by matching phase to the first weapon type used on it that turn. Takes 60 GW to charge. Offers 60 GW protection against first type of weapon, 30 GW for other types that turn.

Age: Fusion

Slots used: 1

Requires: Laser Screens, Particle Screens, Plasma Screens, Disruptor Screens

Leads to: Multi-phase Deflector

Makes obsolete: Laser Screens, Particle Screens, Plasma Screens, Disruptor Screens

Multi-phase Deflector: Deflects all types of weapon energy away from hull/city by matching phase to the weapon type used on it. Takes 120 GW to charge. Offers 120 GW protection against all types of weapons.

Age: Anti-matter

Slots used: 1

Requires: Single-phase Deflectors

Leads to: Absorption Shield

Makes obsolete: Single-phase Deflectors

Absorption Shield: Able to absorb 10% of energy from attacking weapon and use it to recharge. Takes 240 GW to charge. Offers 240 GW protection against all types of weapons.

Age: Singularity

Slots used: 1

Requires: Multi-phase Deflectors, Teleporters

Leads to: Nothing

Makes obsolete: Multi-phase Deflector

Special Sensors

These components counter specific stealth technology aboard target units. They also add a bit to a unit's overall sensor level.

Enhanced IR Sensors: Enhanced InfaRed (IR) Sensors counteract targets with IR Stealth. Adds 2% to all weapon ranges and has a sensor level of 2.

Age: Fusion

Slots used: 1

Requires: IR Stealth
Leads to: EM Cloak Detector
Makes obsolete: Nothing

Enhanced Radar Sensors: Enhanced Radar Sensors counteract targets with Radar Stealth. Adds 2% to all weapon ranges and has a sensor level of 2.

Age: Fusion

Slots used: 1

Requires: Radar Stealth

Leads to: EM Cloak Detector

Makes obsolete: Nothing

EM Cloak Detector: Able to detect and target units with active Electromagnetic Cloaks. Adds 2% to all weapon ranges and has a sensor level of 2.

Age: Anti-matter

Slots used: 1

Requires: Enhanced IR Sensors, Enhanced Radar Sensors

Leads to: Ultra Cloak Detector

Makes obsolete: Nothing

Ultra Cloak Detector: Able to detect and target units with active Electromagnetic or Transdimensional Cloaks. Adds 2% to all weapon ranges and has a sensor level of 2.

Age: Singularity

Slots used: 1

Requires: EM Cloak Detector

Leads to: Nothing

Makes obsolete: EM Cloak Detector

Stealth

These components make starships harder to hit by either decreasing the range of an attacker's weapons or by not allowing attackers to lock on.

IR Stealth: InfaRed (IR) Stealth confuses enemy sensors. Counter with Enhanced IR Sensors or Subspace Computers. Only applicable to starships. Reduces enemy weapon ranges as follows:

20% for beam, bolt, gun, missile and torpedo weapons. No effect on other weapons. May be combined with Radar Stealth to give a 40% reduction in weapon ranges.

Age: Fusion

Slots used: 1

Requires: Nothing

Leads to: Enhanced IR Sensors, Electromagnetic Cloak

Makes obsolete: Nothing

Radar Stealth: Radar Stealth confuses enemy sensors. Counter with Enhanced Radar Sensors or Subspace Computers. Only applicable to starships. Reduces enemy weapon ranges as follows:

20% for beam, bolt, gun, missile and torpedo weapons. No effect on other weapons. May be combined with IR Stealth to give a 40% reduction in weapon ranges.

Age: Fusion

Slots used: 1

Requires: Nothing

Leads to: Enhanced Radar Sensors, Electromagnetic Cloak

Makes obsolete: Nothing

Electromagnetic Cloak: Hides starship from enemies while active. Requires 100 GW charge to activate, remains active for 5 turns. Counter with Cloak Detector.

Age: Anti-matter

Slots used: 1

Requires: IR Stealth, Radar Stealth

Leads to: Transdimensional Cloak

Makes obsolete: Nothing

Transdimensional Cloak: Hides starship from enemies while active. Requires 200 GW charge to activate, remains active for 10 turns. Counter with Ultra Cloak Detector.

Age: Singularity

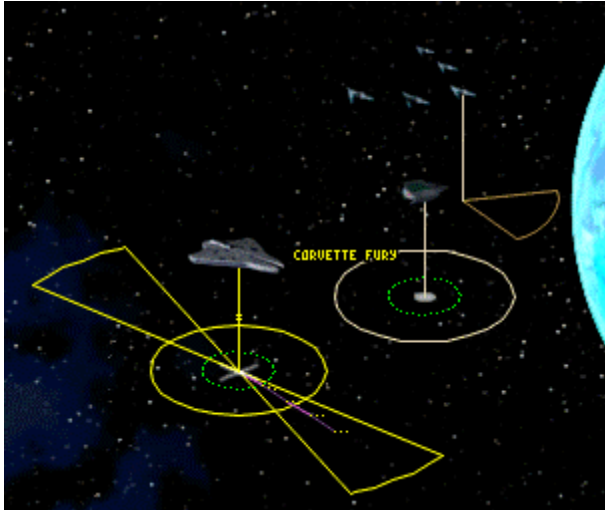
Slots used: 1

Requires: Electromagnetic Cloak

Leads to: Nothing

Makes obsolete: Electromagnetic Cloak

Weapons



Weapons are represented on the solar view screen by drawing weapon targeting arcs, circles, sectors and lines on the imaginary ground plane radiating out from the unit carrying them.

Starship weapons may be placed facing either the front or back. Starships have a terrible turn rate and must use combat maneuvers to try to maneuver their weapons into firing positions.

Worlds center their weapons over the closest city to the target. They are capable of instantly rotating their weapons to face a target.

Fighters have a very good turn rate and can rotate their weapons in any direction within a couple of turns. Note that both starships and fighters can rotate their facings independently of the direction they're moving in.



Weapon Characteristics

Here are the characteristics you'll find listed for most weapons.

Shots: the maximum number of shots the weapon can fire before being depleted. Some weapons never get depleted and show 'Infinite' in this field.

Hit odds: the odds of hitting a target as a percentage. If a range is given (e.g. 75-100%) then the weapon's hit odds vary with distance from the target. In this case, the weapon has a 75% chance at its farthest range and a 100% chance at point blank range.

Pt-def hit odds: the odds of hitting a weapon during an attack using point-defense. Some weapons can be stopped before they reach their target if the target has weapons capable of point-defense. Note that this is a reflexive action from the target's weapons. You can't control it manually. If a weapon is capable of point-defense, then its odds of hitting the attacking weapon is displayed in this field. Note that the odds are always well below 50%. The computer may overload weapons during point-defenses against fighters, mines and standoffs as the risks usually outweigh the costs.

Damage: how much damage the weapon can do in GWs (GigaWatts) when fully charged. If a range is given then the weapon damage can vary randomly between the two values. If the energy use is less than the minimum range then the damage matches the energy use (beam weapons can fire when not fully charged).

Energy Use: shows how much energy in GigaWatts is required before the weapon can be used. If no energy is needed then 'None' is displayed. If the energy doesn't need to be fully charged then a range is given.

Pt-def stoppable: displays Yes or No. If Yes, the weapon can be stopped by point-defense. If No, then point-defense won't work on this weapon.

Type: lists the type of energy used to damage a target. This may be EM (Electromagnetic), Kinetic, Plasma, Wave or a combination of all 4 (Concussion effects).

Range: gives an idea of the relative range of the weapon. Ranges can be Very short, Short, Medium, Long, Very long or Interstellar. Torpedoes and Missiles have a minimum distance so will show a range, e.g., Medium-Long.

Explosive: displays Yes or No. If Yes, the weapon carries munitions and can cause an internal munitions explosion if damaged. Each GW of damage equals a 1% chance of an explosion. If No then no internal explosions are possible.

Blast area: displays Yes or No. If Yes then the weapon has a blast effect that can damage other units within its radius besides the target. If No, then there is no blast effect. Blast areas caused by concussion effects will damage units within the same plane as the primary target. For example, if you fire a torpedo at a city (ground plane) then it will not do any damage to any starships above the city, as they lie above the ground plane.

Arc: indicates the width of the weapon targeting arc. This may be Narrow, Medium, Wide or 360 (if the weapon has no arc). Weapons tend to be "long and narrow" or "short and wide".

Non-targets: lists any units that the weapon can't target.

Range modifiers: lists how various external factors affects weapon range. When a starship is over a planet, then that planet's major environment may affect the weapons range, either by increasing it (+5%) or decreasing it (-5%) either way. The major environments are Atmosphere, Radiation and Gravity. Targets with stealth (either IR and/or Radar) will negatively affect most weapons. For each stealth your target has which the unit firing the weapon can't counter, you will get a 20% decrease in weapon range. Therefore, it's possible for your weapon to have a maximum reduction of 40% due to a target having both types of stealth. Note that if a weapon lists anything in this field, then the type of target will also affect it. Basically smaller targets are harder to hit than larger ones. Shortening the weapon range when attacking smaller targets reflects this. This only applies

to starships, fighters, standoffs and mines, and only involves from 2 to 4% changes between the units.

Weapon Families

To make things interesting, weapons are divided into families. Players are encouraged to specialize in only a few families. The family of the first weapon you research becomes your primary weapons family. All weapons from this family will have no research penalties assigned to them, while all weapons outside this family will take at least 50% longer to research. A subsequent choice outside these two families would give a 100% penalty for the 3rd family members. Here is the research penalty based on family order (the order you discovered the weapons in).

- 1st Family: 0%
- 2nd Family: 50%
- 3rd Family: 100%
- 4th Family: 150%
- 5th Family: 200%
- 6th Family: 250%
- 7th Family: 300%
- 8th Family: 350%

As you can see, if you were to try to do research from all the families, technologies in the 8th family would take over 4 times longer than researching a similar technology in the 1st family. Its possible to do, but why would you want to. Instead, why not trade weapons with another player. Even better, form a union with an advanced player; you'll get all their technologies. Of course, you might also receive a weapon or two as gifts along the way.

Importance of Defensive Weapons

Defensive weapons are the ones with "Defensive" in their names. They always have a very short range, 360 degree fire areas and a relatively low damage value.

Their worth is in their ability to hit small targets and in point-defense, as this table illustrates.

	Defensive weapons	Fighters	Remaining Non-defensive weapons
Point-defense odds	40%	0%	16-25%
Odds of hitting Fighters	50% of normal odds	100% of normal odds	33% of normal odds
Odds of hitting Standoffs or Mines	33% of normal odds	0%	16% of normal odds

Weapon Overloading

Weapons that need energy can be overloaded, allowing them to fire again within the same turn. If you overload a weapon the text within its Weapons popup button will be displayed in red. If you fire the weapon, it will take 20% damage and have a 80% chance of going offline for the rest of the turn. These are acceptable risks during certain circumstances. Use the Tap Energy popup (under the Focus button or press the 'E' key) to overload weapons.

Weapon Family: Beams

All weapons in this family use Electro-magnetic (EM) energy to do damage. Consists of the Defensive Laser Beams, Lightning Beam, Advanced Lightning Beam, Laser Beam, Advanced Laser Beam, Phasor Beam, Advanced Phasor Beam, Conversion Beam and Advanced Conversion Beam.

Except for the defensive, all have long and narrow weapon targeting arcs and are relatively low in the damage department. All are capable of point-defense. All but the defensive weapon is capable of firing when only partially charged and can hold back some energy if not all is needed to kill the target. Like all non-blast-area weapons, they only do 1/2 damage to city items and population with the exception of armor and shields, where they do full damage.

	Defensive Laser Beams	Lightning Beam	Adv Lightning Beam	Laser Beam	Adv Laser Beam	Phasor Beam	Adv Phasor Beam	Conversion Beam	Adv Conversion Beam
Age	Atomic	Atomic	Atomic	Fusion	Fusion	Anti-matter	Anti-matter	Singularity	Singularity
Type	EM	EM	EM	EM	EM	EM	EM	EM	EM
Damage (GW)	2	6-12	9-18	12-24	18-36	24-48	36-72	48-96	72-144
Energy Use (GW)	2	1-12	1-18	1-24	1-36	1-48	1-72	1-96	1-144
Shots	Infinite	Infinite	Infinite	Infinite	Infinite	Infinite	Infinite	Infinite	Infinite
Hit odds	100%	75-100%	75-100%	75-100%	75-100%	75-100%	75-100%	75-100%	75-100%
Pt-def hit odds	40%	16%	16%	16%	16%	16%	16%	16%	16%
Range	Very short	Long	Long	Long	Long	Long	Long	Long	Long
Arc	360 degrees	Narrow	Narrow	Narrow	Narrow	Narrow	Narrow	Narrow	Narrow
Pt-def stoppable	No	No	No	No	No	No	No	No	No
Explosive	No	No	No	No	No	No	No	No	No
Blast area	No	No	No	No	No	No	No	No	No
Non-targets	None	None	None	None	None	None	None	None	None
Range modifiers	-20% vs stealth, +5% in radiation, -5% in atmosphere	-20% vs stealth, +5% in radiation, -5% in atmosphere	-20% vs stealth, +5% in radiation, -5% in atmosphere	-20% vs stealth, +5% in radiation, -5% in atmosphere	-20% vs stealth, +5% in radiation, -5% in atmosphere	-20% vs stealth, +5% in radiation, -5% in atmosphere	-20% vs stealth, +5% in radiation, -5% in atmosphere	-20% vs stealth, +5% in radiation, -5% in atmosphere	-20% vs stealth, +5% in radiation, -5% in atmosphere
Slots used	1	1	1	1	1	1	1	1	1
Footnotes								1	1
Requires	Nothing	Defensive Laser Beams	Lightning Beam, Advanced Research Artifact	Lightning Beam	Laser Beam, Advanced Research Artifact	Laser Beam	Phasor Beam, Advanced Research Artifact	Phasor Beam, Teleporters	Conversion Beam, Advanced Research Artifact
Leads to	Lightning Beam	Adv Lightning Beam, Laser Beam	Nothing	Adv Laser Beam, Phasor Beam	Nothing	Adv Phasor Beam, Conversion Beam	Nothing	Adv Conversion Beam	Nothing
Makes Obsolete	Nothing	Nothing	Lightning Beam	Lightning Beam, Adv Lightning Beam	Laser Beam, Adv Lightning Beam	Laser Beam, Adv Laser Beam	Phasor Beam, Adv Laser Beam	Phasor Beam, Adv Phasor Beam	Conversion Beam, Adv Phasor Beam
	Defensive Laser Beams	Lightning Beam	Adv Lightning Beam	Laser Beam	Adv Laser Beam	Phasor Beam	Adv Phasor Beam	Conversion Beam	Adv Conversion Beam

Footnotes:

1. Able to recoup 10% of charge used when hitting target.

Weapon Family: Bolts

Most weapons of this family use Plasma energy to do damage. It consists of the Defensive Plasma Bolts, Hellfire Bolt, Adv Hellfire Bolt, Plasma Bolt, Adv Plasma Bolt, Phasor Bolt (EM), Adv Phasor Bolt (EM), Tachyon Bolt (EM) and Adv Tachyon Bolt (EM). Except for the defensive weapon, all have short ranges and wide arcs and can dish out a lot of damage. Only the defensive weapon is capable of point-defense. All require a full charge before firing.

Like all non-blast-area weapons, they only do 1/2 damage to city items and population with the exception of armor and shields, where they do full damage.

Compare with: Beams, Fighters, Guns, Missiles, Standoffs, Torpedoes or Waves.

(table on next page)

	Defensive Plasma Bolts	Hellfire Bolt	Adv Hellfire Bolt	Plasma Bolt	Adv Plasma Bolt	Phasor Bolt	Adv Phasor Bolt	Tachyon Bolt	Adv Tachyon Bolt
Age	Atomic	Atomic	Atomic	Fusion	Fusion	Anti-matter	Anti-matter	Singularity	Singularity
Type	Plasma	Plasma	Plasma	Plasma	Plasma	EM	EM	EM	EM
Damage (GW)	2-3	14-16	21-24	28-32	42-48	56-64	84-96	112-128	168-192
Energy Use (GW)	3	20	30	40	60	80	120	160	240
Shots	30	20	20	20	20	Infinite	Infinite	Infinite	Infinite
Hit odds	100%	75-100%	75-100%	75-100%	75-100%	75-100%	75-100%	75-100%	75-100%
Pt-def hit odds	40%	0%	0%	0%	0%	0%	0%	0%	0%
Range	Very short	Short	Short	Short	Short	Short	Short	Short	Short
Arc	360 degrees	Wide	Wide	Wide	Wide	Wide	Wide	Wide	Wide
Pt-def stoppable	No	No	No	No	No	No	No	No	No
Explosive	No	No	No	No	No	No	No	No	No
Blast area	No	No	No	No	No	No	No	No	No
Non-targets	None	None	None	None	None	None	None	None	None
Range modifiers	-20% vs stealth, +5% in radiation, -5% in gravity	-20% vs stealth, +5% in radiation, -5% in gravity	-20% vs stealth, +5% in radiation, -5% in gravity	-20% vs stealth, +5% in radiation, -5% in gravity	-20% vs stealth, +5% in radiation, -5% in gravity	-20% vs stealth, +5% in radiation, -5% in atmosphere	-20% vs stealth, +5% in radiation, -5% in atmosphere	-20% vs stealth, +5% in radiation, -5% in atmosphere	-20% vs stealth, +5% in radiation, -5% in atmosphere
Slots used	1	1	1	1	1	1	1	1	1
Requires	Nothing	Defensive Plasma Bolts	Hellfire Bolt, Advanced Research Artifact	Hellfire Bolt	Plasma Bolt, Advanced Research Artifact	Plasma Bolt	Phasor Bolt, Advanced Research Artifact	Phasor Bolt	Tachyon Bolt, Advanced Research Artifact
Leads to	Hellfire Bolt	Adv Hellfire Bolt, Plasma Bolt	Nothing	Adv Plasma Bolt, Phasor Bolt	Nothing	Adv Phasor Bolt, Tachyon Bolt	Nothing	Adv Tachyon Bolt	Nothing
Makes Obsolete	Nothing	Nothing	Hellfire Bolt	Hellfire Bolt, Adv Hellfire Bolt	Plasma Bolt, Adv Hellfire Bolt	Plasma Bolt, Adv Plasma Bolt	Phasor Bolt, Adv Plasma Bolt	Phasor Bolt, Adv Phasor Bolt	Tachyon Bolt, Adv Phasor Bolt
	Defensive Plasma Bolts	Hellfire Bolt	Adv Hellfire Bolt	Plasma Bolt	Adv Plasma Bolt	Phasor Bolt	Adv Phasor Bolt	Tachyon Bolt	Adv Tachyon Bolt

Weapon Family: Fighters

The Concussion effects of the rockets that fighters fire cause all damage. Consists of Nuclear Fighters, Adv Nuclear Fighters, Fusion Fighters, Adv Fusion Fighters, Anti-matter Fighters, Adv Anti-matter Fighters, Singularity Fighters and Adv Singularity Fighters. All are launched from their mother (world/starship) and have an extremely long range. All can do a large amount of damage but it tends to vary a lot (some fighters in the squad may miss during a strafing run). None are capable of point-defense and all can have their rockets stopped by point-defense. They cannot target standoffs or mines but are very good at fighting other fighters. They only require energy when launching. They must return to their mother after every 7 attacks to reload and recharge. Damage to a fighter squadron comes at the expense of the pilots. When all 10 pilots are killed the fighter squadron is destroyed. Fighter squads can replenish their pilots from the mother's population.

Like all non-blast-area weapons, they only do 1/2 damage to city items and population with the exception of armor and shields, where they do full damage.

Compare with: Beams, Bolts, Guns, Missiles, Standoffs, Torpedoes or Waves.

(table on next page)

	Nuclear Fighters	Adv Nuclear Fighters	Fusion Fighters	Adv Fusion Fighters	Anti-matter Fighters	Adv Anti-matter Fighters	Singularity Fighters	Adv Singularity Fighters
Age	Atomic	Atomic	Fusion	Fusion	Anti-matter	Anti-matter	Singularity	Singularity
Type	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion
Damage (GW)	2-20	3-30	4-40	6-60	8-80	12-120	16-160	24-240
Energy Use (GW)	40	60	80	120	160	240	320	480
Shots	7/launch	7/launch	7/launch	7/launch	7/launch	7/launch	7/launch	7/launch
Hit odds	75-100%	75-100%	75-100%	75-100%	75-100%	75-100%	75-100%	75-100%
Pt-def hit odds	0%	0%	0%	0%	0%	0%	0%	0%
Range	Very long	Very long	Very long	Very long	Very long	Very long	Very long	Very long
Arc	360 degrees	360 degrees	360 degrees	360 degrees	360 degrees	360 degrees	360 degrees	360 degrees
Pt-def stoppable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Explosive	No	No	No	No	No	No	No	No
Blast area	No	No	No	No	No	No	No	No
Non-targets	Standoffs and Mines	Standoffs and Mines	Standoffs and Mines	Standoffs and Mines	Standoffs and Mines	Standoffs and Mines	Standoffs and Mines	Standoffs and Mines
Range modifiers	+5% in atmosphere, -5% in radiation	+5% in atmosphere, -5% in radiation	+5% in atmosphere, -5% in radiation	+5% in atmosphere, -5% in radiation	+5% in atmosphere, -5% in radiation	+5% in atmosphere, -5% in radiation	+5% in atmosphere, -5% in radiation	+5% in atmosphere, -5% in radiation
Slots used	2	2	2	2	2	2	2	2
Requires	Nothing	Nuclear Fighters, Advanced Research Artifact	Nothing	Fusion Fighters, Advanced Research Artifact	Nothing	Anti-matter Fighters, Advanced Research Artifact	Nothing	Singularity Fighters, Advanced Research Artifact
Leads to	Fusion Fighters, Adv Nuclear Fighters	Nothing	Anti-matter Fighters, Adv Fusion Fighters	Nothing	Singularity Fighters, Adv Anti-matter Fighters	Nothing	Adv Singularity Fighters	Nothing
Makes Obsolete	Nothing	Nuclear Fighters	Nuclear Fighters, Adv Nuclear Fighters	Fusion Fighters, Adv Nuclear Fighters	Fusion Fighters, Adv Fusion Fighters	Anti-matter Fighters, Adv Fusion Fighters	Anti-matter Fighters, Adv Anti-matter Fighters	Singularity Fighters, Adv Anti-matter Fighters
	Nuclear Fighters	Adv Nuclear Fighters	Fusion Fighters	Adv Fusion Fighters	Anti-matter Fighters	Adv Anti-matter Fighters	Singularity Fighters	Adv Singularity Fighters

Weapon Family: Guns

Most weapons in this family use Kinetic energy to do damage. Consists of the Defensive Flak Guns, Proton Shotgun, Adv Proton Shotgun, Particle Gun, Adv Particle Gun, Phasor Cannon (EM), Adv Phasor Cannon (EM), Mass Cannon and Adv Mass Cannon. Except for the defensive weapon, all have long and narrow weapon targeting arcs and are middle of the road in dishing out damage. All but the Mass Cannon are capable of point-defense. All require a full charged before firing but will not use more than 2 GW during point-defense.

Like all non-blast-area weapons, they only do 1/2 damage to city items and population with the exception of armor and shields, where they do full damage.

Compare with: Beams, Bolts, Fighters, Missiles, Standoffs, Torpedoes or Waves.

(table on next page)

	Defensive Flak Guns	Proton Shotgun	Adv Proton Shotgun	Particle Gun	Adv Particle Gun	Phasor Cannon	Adv Phasor Cannon	Mass Cannon	Adv Mass Cannon
Age	Atomic	Atomic	Atomic	Fusion	Fusion	Anti-matter	Anti-matter	Singularity	Singularity
Type	Kinetic	Kinetic	Kinetic	Kinetic	Kinetic	EM	EM	Kinetic	Kinetic
Damage (GW)	2	10-14	15-21	20-28	30-42	40-56	60-84	100-130	150-195
Energy Use (GW)	2	14	21	28	42	56	84	140	210
Shots	30	20	20	Infinite	Infinite	Infinite	Infinite	20	20
Hit odds	100%	75-100%	75-100%	75-100%	75-100%	75-100%	75-100%	75-100%	75-100%
Pt-def hit odds	40%	20%	20%	16%	16%	16%	16%	0%	0%
Range	Very short	Long	Long	Long	Long	Long	Long	Long	Long
Arc	360 degrees	Narrow	Narrow	Narrow	Narrow	Narrow	Narrow	Narrow	Narrow
Pt-def stoppable	No	No	No	No	No	No	No	No	No
Explosive	No	No	No	No	No	No	No	No	No
Blast area	No	No	No	No	No	No	No	No	No
Non-targets	None	None	None	None	None	None	None	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines
Range modifiers	-20% vs stealth, +5% in gravity, -5% in atmosphere	-20% vs stealth, +5% in gravity, -5% in atmosphere	-20% vs stealth, +5% in gravity, -5% in atmosphere	-20% vs stealth, +5% in gravity, -5% in atmosphere	-20% vs stealth, +5% in gravity, -5% in atmosphere	-20% vs stealth, +5% in radiation, -5% in atmosphere	-20% vs stealth, +5% in radiation, -5% in atmosphere	-25% vs mobiles, -20% vs stealth, +5% in gravity, -5% in atmosphere	-25% vs mobiles, -20% vs stealth, +5% in gravity, -5% in atmosphere
Slots used	1	1	1	1	1	1	1	1	1
Requires	Nothing	Defensive Flak Guns	Proton Shotgun, Advanced Research Artifact	Proton Shotgun	Particle Gun, Advanced Research Artifact	Particle Gun	Phasor Cannon, Advanced Research Artifact	Phasor Cannon	Mass Cannon, Advanced Research Artifact
Leads to	Proton Shotgun	Adv Proton Shotgun, Particle Gun	Nothing	Adv Particle Gun, Phasor Cannon	Nothing	Adv Phasor Cannon, Mass Cannon	Nothing	Adv Mass Cannon	Nothing
Makes Obsolete	Nothing	Nothing	Proton Shotgun	Proton Shotgun, Adv Proton Shotgun	Particle Gun, Adv Proton Shotgun	Particle Gun, Adv Particle Gun	Phasor Cannon, Adv Particle Gun	Phasor Cannon, Adv Phasor Cannon	Mass Cannon, Adv Phasor Cannon
	Defensive Flak Guns	Proton Shotgun	Adv Proton Shotgun	Particle Gun	Adv Particle Gun	Phasor Cannon	Adv Phasor Cannon	Mass Cannon	Adv Mass Cannon

Weapon Family: Missiles

Concussion effects cause all damage for this weapon family. Consists of Defensive Missiles, Nuclear Missiles, Adv Nuclear Missiles, Fusion Missiles, Adv Fusion Missiles, Anti-matter Missiles, Adv Anti-matter Missiles, Singularity Missiles and Adv Singularity Missiles. All but the defensive weapon have a very short to medium weapon sector (an arc with a minimum firing range) and do a lot of damage. Only the defensive weapon is capable of point-defense, the others are capable of being destroyed by point-defense. Only the defensive weapon is capable of targeting fighters, standoffs and mines. None require an energy charge to fire, as they are all self-propelled. All have a small chance of causing an internal munitions explosion if damaged.

Like all non-blast-area weapons, they only do 1/2 damage to city items and population with the exception of armor and shields, where they do full damage.

Compare with: Beams, Bolts, Fighters, Guns, Standoffs, Torpedoes or Waves.

(table on next page)

	Defensive Missiles	Nuclear Missiles	Adv Nuclear Missiles	Fusion Missiles	Adv Fusion Missiles	Anti-matter Missiles	Adv Anti-matter Missiles	Singularity Missiles	Adv Singularity Missiles
Age	Atomic	Atomic	Atomic	Fusion	Fusion	Anti-matter	Anti-matter	Singularity	Singularity
Type	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion
Damage (GW)	1-4	13-15	20-23	26-30	39-45	52-60	78-90	104-120	156-180
Energy Use (GW)	None	None	None	None	None	None	None	None	None
Shots	20	15	15	15	15	15	15	15	15
Hit odds	100%	90%	90%	90%	90%	90%	90%	90%	90%
Pt-def hit odds	40%	0%	0%	0%	0%	0%	0%	0%	0%
Range	Very short	Very Short-Medium	Very Short-Medium	Very Short-Medium	Very Short-Medium	Very Short-Medium	Very Short-Medium	Very Short-Medium	Very Short-Medium
Arc	360 degrees	Wide	Wide	Wide	Wide	Wide	Wide	Wide	Wide
Pt-def stoppable	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Explosive	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Blast area	No	No	No	No	No	No	No	No	No
Non-targets	None	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines
Range modifiers	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation
Slots used	1	2	2	2	2	2	2	2	2
Requires	Nothing	Defensive Missiles	Nuclear Missiles, Advanced Research Artifact	Nuclear Missiles	Fusion Missiles, Advanced Research Artifact	Fusion Missiles	Anti-matter Missiles, Advanced Research Artifact	Anti-matter Missiles	Singularity Missiles, Advanced Research Artifact
Leads to	Nuclear Missiles	Adv Nuclear Missiles, Fusion Missiles	Nothing	Adv Fusion Missiles, Anti-matter Missiles	Nothing	Adv Anti-matter Missiles, Singularity Missiles	Nothing	Adv Singularity Missiles	Nothing
Makes Obsolete	Nothing	Pack Rockets	Nuclear Missiles	Nuclear Missiles, Adv Nuclear Missiles	Fusion Missiles, Adv Nuclear Missiles	Fusion Missiles, Adv Fusion Missiles	Anti-matter Missiles, Adv Fusion Missiles	Anti-matter Missiles, Adv Anti-matter Missiles	Singularity Missiles, Adv Anti-matter Missiles
	Defensive Missiles	Nuclear Missiles	Adv Nuclear Missiles	Fusion Missiles	Adv Fusion Missiles	Anti-matter Missiles	Adv Anti-matter Missiles	Singularity Missiles	Adv Singularity Missiles

Weapon Family: Standoffs

Concussion effects cause all damage with a blast zone damaging all units around the target except for your own standoffs. Consists of Defensive Standoffs, Nuclear Standoffs, Adv Nuclear Standoffs, Fusion Standoffs, Adv Fusion Standoffs, Anti-matter Standoffs, Adv Anti-matter Standoffs, Singularity Standoffs, Adv Singularity Standoffs and Interstellar Standoffs. All but the defensive weapons are launched at the target and have an extremely long range. All do a very large amount of damage. Only the defensive weapon is capable of point-defense, the others are capable of being destroyed by point-defense. Only the defensive weapon is capable of targeting fighters, standoffs and mines. The Interstellar Standoffs can only target enemy cities. None require an energy charge to fire, as they are all self-propelled. All have a small chance of causing an internal munitions explosion if damaged.

Except for the Defensive Standoffs, none suffer the 1/2 damage penalty of non-blast-area weapons when attacking cities.

Compare with: Beams, Bolts, Fighters, Guns, Missiles, Torpedoes or Waves.

(table on next page)

	Defensive Standoffs	Nuclear Standoffs	Adv Nuclear Standoffs	Fusion Standoffs	Adv Fusion Standoffs	Anti-matter Standoffs	Adv Anti-matter Standoffs	Singularity Standoffs	Adv Singularity Standoffs	Interstellar Standoffs
Age	Atomic	Atomic	Atomic	Fusion	Fusion	Anti-matter	Anti-matter	Singularity	Singularity	Singularity
Type	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion
Damage (GW)	5	15-30	23-45	30-60	45-90	60-120	90-180	120-240	180-360	240-480
Energy Use (GW)	None	None	None	None	None	None	None	None	None	None
Shots	20	5	5	5	5	5	5	5	5	1
Hit odds	100%	0-100%	0-100%	0-100%	0-100%	0-100%	0-100%	0-100%	0-100%	0-100%
Pt-def hit odds	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Range	Very short	Very long	Very long	Very long	Very long	Very long	Very long	Very long	Very long	Interstellar
Arc	360 degrees	360 degrees	360 degrees	360 degrees	360 degrees	360 degrees	360 degrees	360 degrees	360 degrees	360 degrees
Pt-def stoppable	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Explosive	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Blast area	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Non-targets	None	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	All but Cities
Range modifiers	-20% vs stealth, +5% in atmosphere, -5% in radiation	None	None	None	None	None	None	None	None	None
Slots used	1	2	2	2	2	2	2	2	2	1
Requires	Nothing	Defensive Standoffs, Optical Computer	Nuclear Standoffs, Advanced Research Artifact	Nuclear Standoffs	Fusion Standoffs, Advanced Research Artifact	Fusion Standoffs	Anti-matter Standoffs, Advanced Research Artifact	Anti-matter Standoffs	Singularity Standoffs, Advanced Research Artifact	Singularity Standoffs, Trans-warp Drive
Leads to	Nuclear Standoffs	Adv Nuclear Standoffs, Fusion Standoffs	Nothing	Adv Fusion Standoffs, Anti-matter Standoffs	Nothing	Adv Anti-matter Standoffs, Singularity Standoffs	Nothing	Adv Singularity Standoffs, Interstellar Standoffs	Nothing	Nothing
Makes Obsolete	Nothing	Pack Rockets	Nuclear Standoffs	Nuclear Standoffs, Adv Nuclear Standoffs	Fusion Standoffs, Adv Nuclear Standoffs	Fusion Standoffs, Adv Fusion Standoffs	Anti-matter Standoffs, Adv Fusion Standoffs	Anti-matter Standoffs, Adv Anti-matter Standoffs	Singularity Standoffs, Adv Anti-matter Standoffs	Nothing
	Defensive Standoffs	Nuclear Standoffs	Adv Nuclear Standoffs	Fusion Standoffs	Adv Fusion Standoffs	Anti-matter Standoffs	Adv Anti-matter Standoffs	Singularity Standoffs	Adv Singularity Standoffs	Interstellar Standoffs

Weapon Family: Torpedoes

Concussion effects cause all damage with a blast zone damaging any units around the target. Consists of Defensive Torpedoes, Nuclear Torpedoes, Adv Nuclear Torpedoes, Fusion Torpedoes, Adv Fusion Torpedoes, Anti-matter Torpedoes, Adv Anti-matter Torpedoes, Singularity Torpedoes and Adv Singularity Torpedoes. All but the defensive weapon have a long to very long weapon sector (an arc with a minimum firing range). All can do a moderate amount of damage. Only the defensive weapon is capable of point-defense, the others are capable of being destroyed by point-defense. Only the defensive weapon is capable of targeting fighters, standoffs and mines. None require an energy charge to fire, as they are all self-propelled. All have a small chance of causing an internal munitions explosion if damaged.

Except for the Defensive Torpedoes, none suffer the 1/2 damage penalty of non-blast-area weapons when attacking cities.

Compare with: Beams, Bolts, Fighters, Guns, Missiles, Standoffs or Waves.

(table on next page)

	Defensive Torpedoes	Nuclear Torpedoes	Adv Nuclear Torpedoes	Fusion Torpedoes	Adv Fusion Torpedoes	Anti-matter Torpedoes	Adv Anti-matter Torpedoes	Singularity Torpedoes	Adv Singularity Torpedoes
Age	Atomic	Atomic	Atomic	Fusion	Fusion	Anti-matter	Anti-matter	Singularity	Singularity
Type	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion	Concussion
Damage (GW)	2-3	6-12	9-18	12-24	18-36	24-48	36-72	48-96	72-144
Energy Use (GW)	None	None	None	None	None	None	None	None	None
Shots	20	20	20	20	20	20	20	20	20
Hit odds	100%	80%	80%	80%	80%	80%	80%	80%	80%
Pt-def hit odds	40%	0%	0%	0%	0%	0%	0%	0%	0%
Range	Very short	Medium-Long	Medium-Long	Medium-Long	Medium-Long	Medium-Long	Medium-Long	Medium-Long	Medium-Long
Arc	360 degrees	Narrow	Narrow	Narrow	Narrow	Narrow	Narrow	Narrow	Narrow
Pt-def stoppable	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Explosive	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Blast area	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Non-targets	None	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines	Fighters, Standoffs, Mines
Range modifiers	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation	-20% vs stealth, +5% in atmosphere, -5% in radiation
Slots used	1	2	2	2	2	2	2	2	2
Requires	Nothing	Defensive Torpedoes	Nuclear Torpedoes, Advanced Research Artifact	Nuclear Torpedoes	Fusion Torpedoes, Advanced Research Artifact	Fusion Torpedoes	Anti-matter Torpedoes, Advanced Research Artifact	Anti-matter Torpedoes	Singularity Torpedoes, Advanced Research Artifact
Leads to	Nuclear Torpedoes	Adv Nuclear Torpedoes, Fusion Torpedoes	Nothing	Adv Fusion Torpedoes, Anti-matter Torpedoes	Nothing	Adv Anti-matter Torpedoes, Singularity Torpedoes	Nothing	Adv Singularity Torpedoes	Nothing
Makes Obsolete	Nothing	Pack Rockets	Nuclear Torpedoes	Nuclear Torpedoes, Adv Nuclear Torpedoes	Fusion Torpedoes, Adv Nuclear Torpedoes	Fusion Torpedoes, Adv Fusion Torpedoes	Anti-matter Torpedoes, Adv Fusion Torpedoes	Anti-matter Torpedoes, Adv Anti-matter Torpedoes	Singularity Torpedoes, Adv Anti-matter Torpedoes
	Defensive Torpedoes	Nuclear Torpedoes	Adv Nuclear Torpedoes	Fusion Torpedoes	Adv Fusion Torpedoes	Anti-matter Torpedoes	Adv Anti-matter Torpedoes	Singularity Torpedoes	Adv Singularity Torpedoes

Weapon Family: Waves

All weapons in this family use Wave energy to do damage. Consists of the Defensive Wave, Radiation Wave, Adv Radiation Wave, Disruptor Wave, Adv Disruptor Wave, Energy Dissipation Wave, Adv Energy Dissipation Wave, Repulsor Wave and Adv Repulsor Wave. All have a short-range circle instead of a weapon targeting arc. All can do relatively little damage to all enemy targets within range. All are capable of point-defense and can do a good job against fighters, standoffs and mines. All require a full charged before firing but will not use more than 2 GW during point-defense.

Note that none suffer the 1/2 damage penalty of non-blast-area weapons when attacking cities.

Compare with: Beams, Bolts, Fighters, Guns, Missiles, Standoffs or Torpedoes.

(table on next page)

Footnotes (for table on next page):

Randomly drains one component of energy for all in-range targets (excluding friendly units).

Randomly drains one component of energy for all in-range targets and sets them adrift away from attacker (excluding friendly units).

	Defensive Wave	Radiation Wave	Adv Radiation Wave	Disruptor Wave	Adv Disruptor Wave	Energy Dissipation Wave	Energy Dissipation Wave	Repulsor Wave	Adv Repulsor Wave
Age	Atomic	Atomic	Atomic	Fusion	Fusion	Anti-matter	Anti-matter	Singularity	Singularity
Type	Wave	Wave	Wave	Wave	Wave	Wave	Wave	Wave	Wave
Damage (GW)	1-2	5-10	8-15	10-20	15-30	20-40	30-60	40-80	60-120
Energy Use (GW)	2	10	15	20	30	48	72	96	144
Shots	Infinite	Infinite	Infinite	Infinite	Infinite	Infinite	Infinite	Infinite	Infinite
Hit odds	100%	100%	100%	100%	100%	100%	100%	100%	100%
Pt-def hit odds	40%	25%	25%	25%	25%	25%	25%	25%	25%
Range	Very short	Short	Short	Short	Short	Short	Short	Short	Short
Arc	360 degrees	360 degrees	360 degrees	360 degrees	360 degrees	360 degrees	360 degrees	360 degrees	360 degrees
Pt-def stoppable	No	No	No	No	No	No	No	No	No
Explosive	No	No	No	No	No	No	No	No	No
Blast area	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Non-targets	None	None	None	None	None	None	None	None	None
Range modifiers	+5% in atmosphere, -5% in gravity	+5% in atmosphere, -5% in gravity	+5% in atmosphere, -5% in gravity	+5% in atmosphere, -5% in gravity	+5% in atmosphere, -5% in gravity	+5% in atmosphere, -5% in gravity	+5% in atmosphere, -5% in gravity	+5% in atmosphere, -5% in gravity	+5% in atmosphere, -5% in gravity
Slots used	1	1	1	1	1	1	1	1	1
Footnotes						1	1	2	2
Requires	Nothing	Defensive Wave	Radiation Wave, Advanced Research Artifact	Radiation Wave	Disruptor Wave, Advanced Research Artifact	Disruptor Wave	Energy Dissipation Wave, Advanced Research Artifact	Energy Dissipation Wave, Tractor Beam	Repulsor Wave, Advanced Research Artifact
Leads to	Radiation Wave	Adv Radiation Wave, Disruptor Wave	Nothing	Adv Disruptor Wave, Energy Dissipation Wave	Nothing	Adv Energy Dissipation Wave, Repulsor Wave	Nothing	Adv Repulsor Wave	Nothing
Makes Obsolete	Nothing	Nothing	Radiation Wave	Radiation Wave, Adv Radiation Wave	Disruptor Wave, Adv Radiation Wave	Disruptor Wave, Adv Disruptor Wave	Energy Dissipation Wave, Adv Disruptor Wave	Energy Dissipation Wave, Adv Energy Dissipation Wave	Repulsor Wave, Adv Energy Dissipation Wave
	Defensive Wave	Radiation Wave	Adv Radiation Wave	Disruptor Wave	Adv Disruptor Wave	Energy Dissipation Wave	Energy Dissipation Wave	Repulsor Wave	Adv Repulsor Wave

Weapons that fall Outside the Families

The weapons not part of the families previously described tend to be one-of-a-kind or not general enough. They are the Ram, Pack Rockets, Assault Pods and Mines.

Ram: Reinforces the spine of a ship, allowing it to ram another ship without doing significant damage to itself. Based on its size (Scout ... Cruiser), it will take 3-5 GW damage. The rammed ship damage is based on where it was rammed and the size of the ramming ship. Rammed in the side: 24-40 GW damage. Rammed from behind: 12-20 GW damage. Rammed in front: 6-10 GW damage.

Age: Atomic

Slots used: 0

Requires: Nothing

Leads to: Assault Pod

Makes obsolete: Nothing

Pack Rockets: 1/2 damage against cities except for armor and shields

Age: Atomic

Slots used: 2

Type: Concussion

Damage (GW): 4-6

Energy Use (GW): None

Shots: 10

Hit odds: 85%

Pt-def hit odds: 0%

Range: Short

Arc: Wide

Pt-def stoppable: Yes

Explosive: Yes

Blast area: Yes

Non-targets: Fighters, Standoffs and Mines

Range modifiers: +5% in atmosphere, -5% in radiation

Requires: Nothing

Leads to: Nothing

Makes obsolete: Nothing

Assault Pod: Holds up to 10 personnel (Security Personnel are best). Able to launch at unarmored and unshielded starships/cities. Starships are taken over by killing all the crew. Cities are destroyed by killing its population. The assault on the last city will determine if the world is destroyed or captured based on if there are any surviving assault crew. Teleporting Assault Pods are immune to point-defense weapons.

Age: Atomic

Slots used: 1 with Teleporters, 2 without

Requires: Colony Pod, Ram

Leads to: Teleporters, Protected Cities

Makes obsolete: Nothing

Nuclear Mines: May create mine fields of up to 8 mines per world or 4 mines per resource system planet. For Resource systems, each time mines are built, they are distributed to all the planets. You must manually upgrade mines when better ones come along. Mines will move towards targets only if targets are in combat over planet and one of your (or an ally's) Units is threatened.

Age: Atomic

Slots used: 0

Damage (GW): 20-40

Blast area: Yes

Type: Concussion

Pt-def stoppable: Yes

Requires: Nothing

Leads to: Fusion Mines

Makes obsolete: Nothing

Fusion Mines: A more powerful version of the Nuclear Mines. May upgrade a mine field when a resource system has at least one planet with less than 4 mines on it, or if any of the mines are outdated (Nuclear). The same thing applies to worlds except the maximum is 8 mines.

Age: Fusion

Slots used: 0

Damage (GW): 40-80

Blast area: Yes

Type: Concussion

Pt-def stoppable: Yes

Requires: Nuclear Mines

Leads to: Anti-matter Mines

Makes obsolete: Nuclear Mines

Anti-matter Mines: A more powerful version of the Fusion Mines. May upgrade a minefield when a resource system has at least one planet with less than 4 mines on it, or if any of the mines are outdated. The same thing applies to worlds except the maximum is 8 mines.

Age: Anti-matter

Slots used: 0

Damage (GW): 80-160

Blast area: Yes

Type: Concussion

Pt-def stoppable: Yes

Requires: Fusion Mines

Leads to: Singularity Mines

Makes obsolete: Fusion Mines

Singularity Mines: A more powerful version of the Anti-matter Mines. May upgrade a minefield when a resource system has at least one planet with less than 4 mines on it, or if any of the mines are outdated. The same thing applies to worlds except the maximum is 8 mines.

Age: Singularity

Slots used: 0

Damage (GW): 160-320

Blast area: Yes

Type: Concussion

Pt-def stoppable: Yes

Requires: Anti-matter Mines

Leads to: Nothing

Makes obsolete: Anti-matter Mines

World Improvements

Some technologies are designed to aid a world in some way. They are of no use to any other unit. Here is the list of technologies that do that, followed by their details:

Laboratory: Increases a world's research capabilities by 50% the population's research value. Accumulative but limited to one per city. Note that more scientists increase a population's research value. Upkeep of \$2/year. Only applicable to Worlds.

Age: Atomic

Slots used: 2

Requires: Nothing

Leads to: Nano Technology, Fertility Drugs, Research Centers

Makes obsolete: Nothing

Research Center: Exactly like a Laboratory except it only takes up 1 slot instead of 2. Accumulative but limited to one per city. Upkeep of \$2/year. Only applicable to Worlds.

Age: Fusion

Slots used: 1

Requires: Laboratories

Leads to: Replicators, Cloning, Tractor Beam

Makes obsolete: Laboratories

Surface Mining Facility: Adds \$5 per year to world. Accumulative but limited to one per city. Only applicable to Worlds.

Age: Atomic

Slots used: 2

Requires: Nothing

Leads to: Terraforming, Deep Mining Facilities

Makes obsolete: Nothing

Deep Mining Facility: Exactly like a Surface Mining Facility except it only takes up 1 slot instead of 2. Accumulative but limited to one per city. Only applicable to Worlds.

Age: Fusion

Slots used: 1

Requires: Surface Mining Facilities

Leads to: Underground Cities

Makes obsolete: Surface Mining Facilities

Fertility Drugs: Increases world birth rates by one per 'planet-type' years.

Age: Atomic

Slots used: 0

Requires: Laboratories

Leads to: Cloning

Makes obsolete: Nothing

Cloning: Increases world birth rates by two per 'planet-type' years.

Age: Fusion

Slots used: 0

Requires: Fertility Drugs, Research Centers

Leads to: Bio Computers, Cloning Factories

Makes obsolete: Fertility Drugs

Cloning Factories: Increases world birth rates by three per 'planet-type' years.

Age: Anti-matter

Slots used: 0

Requires: Cloning, Replicators

Leads to: Cloning Farms

Makes obsolete: Cloning

Cloning Farms: Increases world birth rates by four per 'planet-type' years.

Age: Singularity

Slots used: 0

Requires: Cloning Factories, Holospheres

Leads to: Underground Cities

Makes obsolete: Cloning Factories

Nano Technology: Decreases production costs by 15%.

Age: Atomic

Slots used: 0

Requires: Laboratories

Leads to: Nano Factories, Terraforming, Replicators

Makes obsolete: Nothing

Nano Factory: Decreases production and repair times by 20%. Accumulative but limited to one per city. Only applicable to Worlds.

Age: Atomic

Slots used: 2

Requires: Laboratories

Leads to: Replicator Facility

Makes obsolete: Nothing

Replicators: Decreases production costs by 15%.

Age: Fusion

Slots used: 0

Requires: Nano Technology, Research Centers

Leads to: Cloning Factories, Replicator Facilities, Protected Cities

Makes obsolete: Nothing

Replicator Facility: Decreases production and repair times by 20%.
Accumulative but limited to one per city. Only applicable to Worlds.

Age: Fusion

Slots used: 1

Requires: Nano Factories, Replicators

Leads to: Nothing

Makes obsolete: Nano Factories

Holospheres: Decreases starship production costs by 15%.

Age: Anti-matter

Slots used: 0

Requires: Colony Pod, Replicators

Leads to: Jump Drives, Cloning Farms, Domed Cities

Makes obsolete: Nothing

Terraforming: Allows worlds to be converted to Type-1 planets. One Terraforming component needed for each decremental change. Terraforming only occurs after component is build and if world needs it (Type-2 or greater).

Age: Anti-matter

Slots used: 1

Requires: Surface Mining Facilities, Nano Technology, Bio Computers

Leads to: Bio Armor

Makes obsolete: Nothing

Type-1 Spacedock: Allows starships to dock for upgrades. Its speed to produce starship components and to self-repair is based on 75% of the production value of the world below. It can take 200 GW of damage. The world's ability to research isn't affected when upgrading a docked starship. Only one can be built per world.

Age: Atomic

Slots used: 0

Requires: Nothing

Leads to: Type-2 Spacedock

Makes obsolete: Nothing

Type-2 Spacedock: Allows starships to dock for upgrades. Its speed to produce starship components and to self-repair is based on 100% of the production value of the world below. It can take 400 GW of damage. The world's ability to research isn't affected when upgrading a docked starship. Only one can be built per world.

Age: Fusion

Slots used: 0

Requires: Type-1 Spacedock

Leads to: Type-3 Spacedock

Makes obsolete: Type-1 Spacedock

Type-3 Spacedock: Allows starships to dock for upgrades. Its speed to produce starship components and to self-repair is based on 125% of the production value of the world below. It can take 800 GW of damage. The world's ability to research isn't affected when upgrading a docked starship. Only one can be built per world.

Age: Anti-matter

Slots used: 0

Requires: Type-2 Spacedock

Leads to: Type-4 Spacedock

Makes obsolete: Type-2 Spacedock

Type-4 Spacedock: Allows starships to dock for upgrades. Its speed to produce starship components and to self-repair is based on 150% of the production value of the world below. It can take 1600 GW of damage. The world's ability to research isn't affected when upgrading a docked starship. Only one can be built per world.

Age: Singularity

Slots used: 0

Requires: Type-3 Spacedock

Leads to: Nothing

Makes obsolete: Type-3 Spacedock

Normal Cities: Your basic city sprawl. No protection against orbital bombardments.

Age: Atomic

Slots used: 0

Requires: Nothing

Leads to: Protected Cities

Makes obsolete: Nothing

Protected Cities: Reinforced buildings and a more extensive underground network provide more protection for its citizens and their property. Cuts down orbital bombardment damage by 20% but takes 1 slot from a world (all cities of the world are changed). Shields and armor aren't protected. No effect against assault pod attacks.

Age: Fusion

Slots used: 1

Requires: Normal Cities, Assault Pod, Replicators

Leads to: Domed Cities

Makes obsolete: Nothing

Domed Cities: A protective dome built over each city offers more protection for its citizens and their property. Cuts down orbital bombardment damage by 40% but takes 2 slots from a world (all cities of the world are changed). Shields and armor aren't protected. No effect against assault pod attacks.

Age: Anti-matter

Slots used: 2

Requires: Protected Cities, Holospheres

Leads to: Underground Cities

Makes obsolete: Nothing

Underground Cities: Completely underground cities offer the most protection for its citizens and their property. Cuts down orbital bombardment damage by 80% but takes 3 slots from a world (all cities of the world are changed). Shields and armor aren't protected. No effect against assault pod attacks.

Age: Singularity

Slots used: 3

Requires: Domed Cities, Deep Mining Facilities, Cloning Farms

Leads to: Nothing

Makes obsolete: Nothing

Technologies not in the Research List

Some technological components come to you from artifacts or after certain criteria have been met. Here is a list of these components and how you get them. None of them use any component slots.

Fusion Age Laboratory: Allows you to reach the Fusion age, where you'll be able to research technologies of that age. Only available when in the Atomic age and you've discovered at least 15 Atomic Age technologies and have 2 Wisdom artifacts on your worlds.

Anti-matter Age Laboratory: Allows you to reach the Anti-matter age, where you'll be able to research technologies of that age. Only available when in the Fusion age and you've discovered at least 15 Fusion Age technologies and have 3 Wisdom artifacts on your worlds.

Singularity Age Laboratory: Allows you to reach the Singularity age, where you'll be able to research technologies of that age. Only available when in the Anti-matter age and you've discovered at least 15 Anti-matter Age technologies and have 4 Wisdom artifacts on your worlds.

Fold Drive: Allows your starship to fold space to get to another location. Basically works like a Jump Drive but requires no energy to use and can only be used twice before it is removed. Only available by using a Fold Drive Artifact.

Storm Dissipator: A one shot weapon that allows your starship to destroy all Storm Sentries on the planet you fire it at. Only available by using a Storm Dissipator Artifact.

Lightning Storm Dissipator: A one shot weapon that allows your starship to destroy all Lightning Storm Sentries on the planet you fire it at. Only available by using a Lightning Storm Dissipator Artifact.

Sunflower Exterminator: A one shot weapon which allows your starship to destroy all Sunflower Patch Sentries on the planet you fire it at. Only available by using a Sunflower Exterminator Artifact.

Killer Beam: A one shot weapon that allows your starship to destroy the starship you fire it at, providing the target doesn't have Invincible Shields. Only available by using a Killer Beam Artifact.

Planet Killer: A one shot weapon which allows your starship to destroy the world belonging to the city you fire it at, providing the world doesn't have Invincible Shields. Only available by using a Planet Killer Artifact. See the Global Options popup on how to disallow this artifact.

Ram Shields: Allows your starship to survive 5 Ram attacks without any damage. Only available by using a Ram Shield Artifact.

Invincible Shields: Allows your starship to survive any 5 attacks without any damage. The only way a starship can survive an attack by a Killer Beam or a world can survive an attack by a Planet Killer. Only available by using an Invincible Shields Artifact.

Miscellaneous Technologies

The following technologies don't fit into any of the other categories.

Federation: Allows you the possibility of uniting with players who share your philosophy. Once researched, you may select a candidate's unit and pass a Federation Law for that player from one of your worlds' build queues. The candidate player must have done the same for you, be your ally, and both must have 100% trust in the other before having the option of forming a Federation.

Age: Atomic

Slots used: 0

Requires: Informants

Leads to: Nothing

Makes obsolete: Nothing

Colony Pod: Holds up to 10 personnel, which are then used to populate a new colony. They must be carried by a starship to a planet you want to colonize or to the Outpost located on the planet. You may only colonize planets with systems free of artifacts and not owned by another player.

Age: Atomic

Slots used: 2 (1 with Teleporters)

Requires: Nothing

Leads to: Assault Pod, Holospheres

Makes obsolete: Nothing

Inertial Dampeners: Doubles the rate or rotation for starships (5-15 to 10-30 degrees per turn based on starship size).

Age: Anti-matter

Slots used: 0

Requires: Tractor Beam

Leads to: Nothing

Makes obsolete: Nothing

Self-destruct Mechanism: Starship will self-destruct 90% of the time if taken over by another race. If the other race has the Bomb Disposal Mechanism then this falls to 50%.

Age: Atomic

Slots used: 0

Requires: Nothing

Leads to: Bomb Disposal Mechanism

Makes obsolete: Nothing

Bomb Disposal Mechanism: Allows successful Assault Pod attacks to be able to defuse a self-destruct mechanism 50% of the time.

Age: Fusion

Slots used: 0

Requires: Self-destruct Mechanism

Leads to: Nothing

Makes obsolete: Nothing

Tractor Beam: Allows a disabled starship to be towed by another, but not during combat.

Age: Fusion

Slots used: 0

Requires: Research Centers

Leads to: Inertial Dampeners, Teleporters, Repulsor Wave

Makes obsolete: Nothing

Teleporters: Upgrades Colony and Assault Pods to Teleporting Colony and Assault Pods that only take up 1 slot instead of 2. Teleporting Assault Pods can't be stopped by point-defense.

Age: Anti-matter

Slots used: 0

Requires: Assault Pod, Tractor Beam

Leads to: Holospheres, Conversion Beam, Absorption Shields

Makes obsolete: Colony Pod, Assault Pod

Informants: Your most basic intelligence-gathering unit. Gathers information from other players. Important to spread along all the worlds of another player (100% coverage), otherwise, reduces the effectiveness. Requires \$2 per year in upkeep. Security personnel counter informants. May also be used to steal technology (espionage). See the Intelligence section for more information.

Age: Atomic

Slots used: 0

Requires: Nothing

Leads to: Spies, Federation

Makes obsolete: Nothing

Spies: A more capable version of Informants. May be used to steal money, technology, Wisdom Artifacts and sabotage components. Requires \$4 per year in upkeep. Security personnel counter spies. See the Intelligence section for more information.

Age: Atomic

Slots used: 0

Requires: Informants

Leads to: Nothing

Makes obsolete: Nothing

Scout Starships: Smallest starship available. Holds a crew of 20 and has 8 component slots. Requires \$10-\$20 per year in upkeep, depending on time spent in combat. Reduces attacker's weapon ranges more than any other starship (small target). No pips on icon's dropline. Must contain a generator, computer and drive.

Age: Atomic

Slots used: 0

Requires: Nothing

Leads to: Gunboat Starships

Makes obsolete: Nothing

Gunboat Starships: Small starship. Holds a crew of 25 and has 9 component slots. Requires \$14-\$28 per year in upkeep, depending on time spent in combat. Reduces attacker's weapon ranges less than scout starship (larger target). One pip on icon's dropline. Must contain a generator, computer and drive.

Age: Atomic

Slots used: 0

Requires: Scout Starships

Leads to: Corvette Starships

Makes obsolete: Nothing

Corvette Starships: Midsized starship. Holds a crew of 30 and has 10 component slots. Requires \$18-\$36 per year in upkeep, depending on time spent in combat. Reduces attacker's weapon ranges less than gunboat starship (larger target). Two pips on icon's dropline. Must contain a generator, computer and drive.

Age: Fusion

Slots used: 0

Requires: Gunboat Starships

Leads to: Frigate Starships

Makes obsolete: Nothing

Frigate Starships: Midsized starship. Holds a crew of 35 and has 11 component slots. Requires \$22-\$44 per year in upkeep, depending on time spent in combat. Reduces attacker's weapon ranges less than corvette starship (larger target). Three pips on icon's dropline. Must contain a generator, computer and drive.

Age: Fusion

Slots used: 0

Requires: Corvette Starships

Leads to: Destroyer Starships

Makes obsolete: Nothing

Destroyer Starships: Large starship. Holds a crew of 40 and has 12 component slots. Requires \$26-\$52 per year in upkeep, depending on time spent in combat. Reduces attacker's weapon ranges less than frigate starship (larger target). Four pips on icon's dropline. Must contain a generator, computer and drive.

Age: Anti-matter

Slots used: 0

Requires: Frigate Starships

Leads to: Cruiser Starships

Makes obsolete: Nothing

Cruiser Starships: Largest starship available. Holds a crew of 45 and has 13 component slots. Requires \$30-\$60 per year in upkeep, depending on time spent in combat. Reduces attacker's weapon ranges the least (smaller target than a city). Five pips on icon's dropline. Must contain a generator, computer and drive.

Age: Anti-matter

Slots used: 0

Requires: Destroyer Starships

Leads to: Nothing

Makes obsolete: Nothing

Type-1 Freighter: Small freighter able to carry up to \$10 of resources per trip.

Age: Atomic

Slots used: 0

Requires: Nothing

Leads to: Type-2 Freighter

Makes obsolete: Nothing

Type-2 Freighter: Small freighter able to carry up to \$20 of resources per trip.

Age: Atomic

Slots used: 0

Requires: Type-1 Freighter

Leads to: Type-3 Freighter

Makes obsolete: Type-1 Freighter

Type-3 Freighter: Small freighter able to carry up to \$30 of resources per trip.

Age: Atomic

Slots used: 0

Requires: Type-2 Freighter

Leads to: Type-4 Freighter

Makes obsolete: Type-2 Freighter

Type-4 Freighter: Medium freighter able to carry up to \$40 of resources per trip.

Age: Atomic

Slots used: 0

Requires: Type-3 Freighter

Leads to: Type-5 Freighter

Makes obsolete: Type-3 Freighter

Type-5 Freighter: Medium freighter able to carry up to \$50 of resources per trip.

Age: Atomic

Slots used: 0

Requires: Type-4 Freighter

Leads to: Type-6 Freighter

Makes obsolete: Type-4 Freighter

Type-6 Freighter: Medium freighter able to carry up to \$60 of resources per trip.

Age: Atomic

Slots used: 0

Requires: Type-5 Freighter

Leads to: Type-7 Freighter

Makes obsolete: Type-5 Freighter

Type-7 Freighter: Medium freighter able to carry up to \$70 of resources per trip.

Age: Atomic

Slots used: 0

Requires: Type-6 Freighter

Leads to: Type-8 Freighter

Makes obsolete: Type-6 Freighter

Type-8 Freighter: Medium freighter able to carry up to \$80 of resources per trip.

Age: Atomic

Slots used: 0

Requires: Type-7 Freighter

Leads to: Type-9 Freighter

Makes obsolete: Type-7 Freighter

Type-9 Freighter: Medium freighter able to carry up to \$90 of resources per trip.

Age: Atomic

Slots used: 0

Requires: Type-8 Freighter

Leads to: Type-10 Freighter

Makes obsolete: Type-8 Freighter

Type-10 Freighter: Medium freighter able to carry up to \$100 of resources per trip.

Age: Atomic

Slots used: 0

Requires: Type-9 Freighter

Leads to: Nothing

Makes obsolete: Type-9 Freighter

Cheat Codes

Precede each of the key sequences by the 'HOME' key. If successful, you will hear the cash register (or money) sound. For example, to add a Killer Beam artifact to the Focus Unit. Press the following key sequence:

'HOME' 'H' 'K' 'B' 'A'.

When the 'HOME' key is initially pressed it will take any letter you press as a possible cheat code. You can cancel the cheat code request by reselecting the 'HOME' key. You may have to select it a 3rd time to end the cheat code input mode.

The Target mentioned below is set by left-clicking over a unit on the solar view. A small, flashing, white disk will appear under/over the unit selected. Contrast this with right-clicking over one of your units to make it the Focus Unit.

HKBA	Add Killer Beam Artifact to Target Unit
CKBA	Add Killer Beam Artifact to Focus Unit
HPKA	Add Planet Killer Artifact to Target Unit
CPKA	Add Planet Killer Artifact to Focus Unit
HWA	Add Wisdom Artifact to Target Unit
CWA	Add Wisdom Artifact to Focus Unit
HMA	Add Money Artifact to Target Unit
CMA	Add Money Artifact to Focus Unit
HBGA	Add Best Generator Artifact to Target Unit
CBGA	Add Best Generator Artifact to Focus Unit
HBCA	Add Best Computer Artifact to Target Unit
CBCA	Add Best Computer Artifact to Focus Unit
HBDA	Add Best Drive Artifact to Target Unit
CBDA	Add Best Drive Artifact to Focus Unit
HIRA	Add Instant Recharge Artifact to Target Unit
CIRA	Add Instant Recharge Artifact to Focus Unit
HREA	Add Relic Artifact to Target Unit
CREA	Add Relic Artifact to Focus Unit
HSSA	Add Starship Artifact to Target Unit

CSSA	Add Starship Artifact to Focus Unit
HCRA	Add Component Repair Artifact to Target Unit
CCRA	Add Component Repair Artifact to Focus Unit
HFRA	Add Finish Research Artifact to Target Unit
CFRA	Add Finish Research Artifact to Focus Unit
HBSA	Add Best Shields Artifact to Target Unit
CBSA	Add Best Shields Artifact to Focus Unit
HBAA	Add Best Armor Artifact to Target Unit
CBAA	Add Best Armor Artifact to Focus Unit
HBFA	Add Best Fighters Artifact to Target Unit
CBFA	Add Best Fighters Artifact to Focus Unit
HMPA	Add Maximum Population Artifact to Target Unit
CMPA	Add Maximum Population Artifact to Focus Unit
HFDA	Add Fold Drive Artifact to Target Unit
CFDA	Add Fold Drive Artifact to Focus Unit
HRSA	Add Ram Shields Artifact to Target Unit
CRSA	Add Ram Shields Artifact to Focus Unit
HICA	Add Instant Colony Artifact to Target Unit
CICA	Add Instant Colony Artifact to Focus Unit
HISA	Add Invincible Shields Artifact to Target Unit
CISA	Add Invincible Shields Artifact to Focus Unit
HARA	Add Advanced Research Artifact to Target Unit
CARA	Add Advanced Research Artifact to Focus Unit
HMCE	Add Maximum Combat Experience to Target Unit
CMCE	Add Maximum Combat Experience to Focus Unit
CUPS	Add Upsize Starship Artifact to Focus Unit

Glossary

Ages	Technologies are divided into 4 ages. You start in one of the ages and can only research technologies of that age. Research at least 15 technologies of that age and have the right number of Wisdom Artifacts and you'll be allowed to build a new Age Laboratory. Once built you will enter the next age.
Artifacts	Artifacts are objects that possess powers and can provide benefits to their owners. They are found on unexplored planets and will automatically be picked up by exploring starships.
Auto-pause	When the computer automatically pauses the game to allow you to acknowledge a message or choose an action.
Colony	A world is considered a colony for the first 50 years of its existence. It has extra yearly upkeep costs.
Focus Unit	One of your units that has been designated for monitoring or to receive commands from you. Its name is in the top-left of the screen. Right click on one of your units on the solar view or select one from the Units popup to focus on it.
Disputed Star	Only applicable to Resource Systems. When more than one player considers a star to be in their space (if one of their worlds is closer to it than any of the owner's worlds). It displays a cyan outline around the star on the Star Map.
Freighter Route	A route between a world and another star system. Shown as a straight line on the Star Map. The other star system is harvested by the freighter and is known as a Resource System. The freighter supplies its world with these harvested resources as often as it can complete a circuit (no less than once per year, usually once every few years).
GW	GigaWatts, used as a power rating. Example: used to rate how much damage weapons can give out.
Mother	What the Unit carrying fighters is referred to with respect to the fighters. You can have Mother worlds and Mother starships.
Parsec	A unit of interstellar measurement (roughly one light-year in this game). No star is less than one Parsec from another.
Resource System	See Freighter Route.
Star in Turmoil	A successful Raid against a Resource System leaves that system unable to be owned for a random number of years.

Target	Someone's Unit or a specified position to which commands from the Focus Unit are directed. Used in Focus Unit commands (as in Focus Unit hails Target Unit) or by worlds when building certain items (as in building a freighter for the Target star system). Click a star on the Star Map or anything on the solar view to make it the target.
Unit	An entity such as a World, Starship, Fighter, Sentry, Freighter or Outpost.
Wisdom Artifacts	Wisdom artifacts are special artifacts that proved wisdom or knowledge benefits to the owner and are also necessary for advancement into another age. Once transferred to your worlds, they improve its research capabilities by 50%. They also increase your chances of a breakthrough in your current research topic. Need at least 2, 3 and 4 to move through the subsequent ages.

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OFFICIAL WEB SITE

Matrix Games – Starships Unlimited II
<http://www.matrixgames.com/games/starshipsunlimited2>



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