STARS!

The Premiere Space Strategy Game

PLAYER'S GUIDE

http://www.webmap.com/stars!
rec.games.computer.stars

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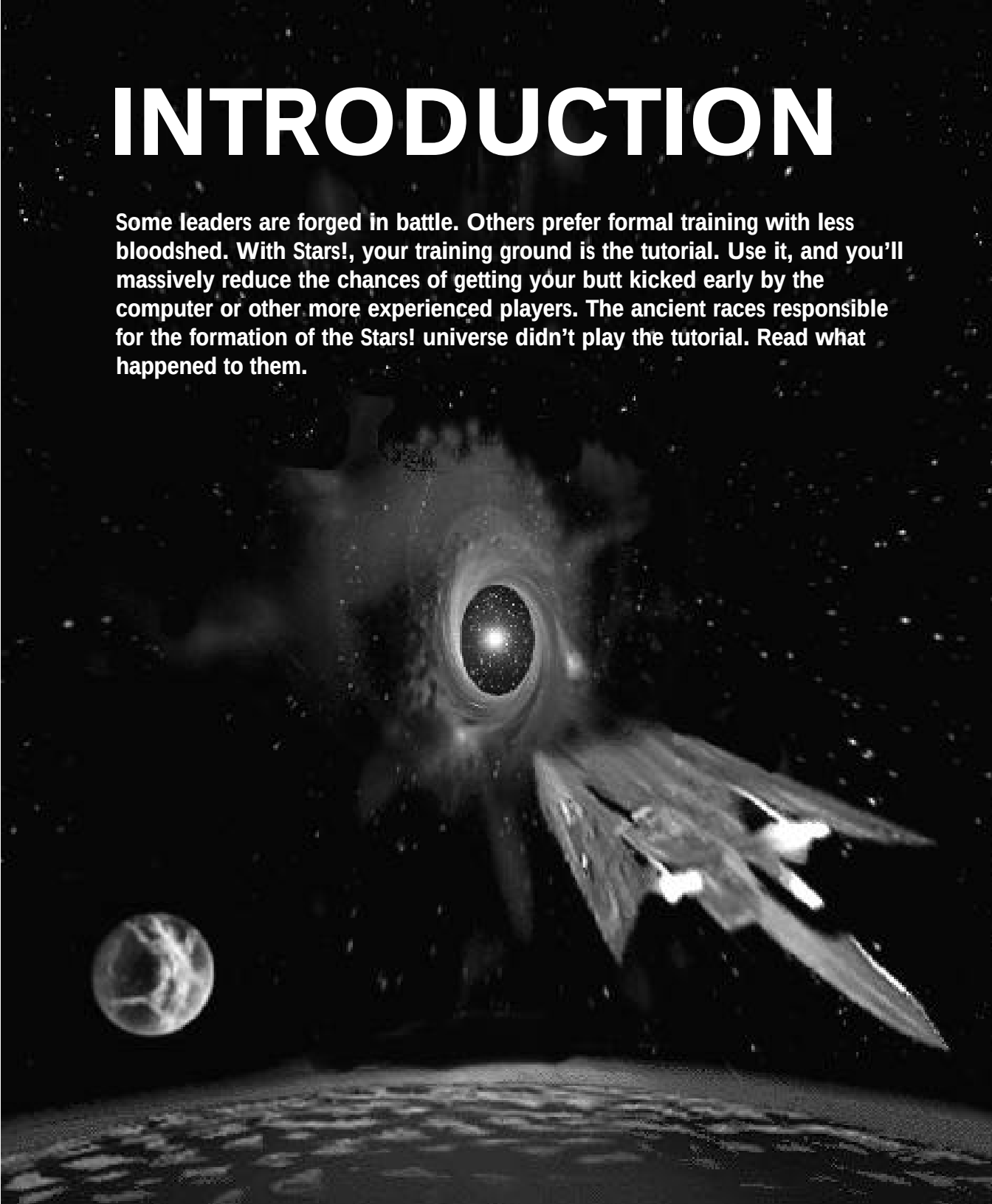
INTRODUCTION

Some leaders are forged in battle. Others prefer formal training with less bloodshed. With Stars!, your training ground is the tutorial. Use it, and you'll massively reduce the chances of getting your butt kicked early by the computer or other more experienced players. The ancient races responsible for the formation of the Stars! universe didn't play the tutorial. Read what happened to them.



1 WELCOME TO THE STARS! UNIVERSE

IT'S A RELATIVELY SMALL UNIVERSE, AFTER ALL

Somewhere out on the edge of the Universe, two great races (the Sznip, a race of crustaceans, and the Fermis, a race of nuclear plasmatoids) have destroyed themselves and the chance for all remaining sentient races to evolve and expand into (nearly) infinite space. Once upon a time there was a theory that said the Universe was made up of interconnected bubbles of space/time. The Sznip and the Fermi War proved it. The detonation that destroyed both these super races also caused these bubbles of real space to pop (actually a simultaneous replacement of real space with null). All the bubbles that is, but one. This bubble of space/time, your bubble, is all that remains. And it's small (too small) and full (too full) of sentient species, each on the verge of colonizing other planets and traveling between the stars. Each race is hungry to control the little bit that's left.

There's bound to be trouble.

WHAT YOU'RE DOING HERE

Fortunately, the destructive element found in the terrible weapons of the Sznips and Fermis does not exist in the Universal Remnant. So there is a limit to the trouble you and your opponents can cause. During your first year, you'll be ready to build your first simple space ships. Eventually you'll build interstellar cruisers and planet bombers, freighters the size of small moons, and weapons that will make your opponents tremble or shrug, depending on their confidence level. You'll colonize world after world as quickly as only your race can. You may get lucky, and find artifacts left by those ancient races that catalyze your research efforts, or encounter transdimensional beings offering you knowledge that only they possess, and at low, low prices. By the time the space dust settles, 100, 200, perhaps 500 or more years will have passed, and either you or one of your undeserving opponents will be calling the shots. Or, shot up, war-scarred, and with too few resources to continue, you'll call a halt, shake hands and all settle down for a foot stomping game of Fizbin.

It's the 2400th year of the Planetary Era. Your world is resource rich and bustling with technological development. Your political leaders are giddy and, with much fanfare, have just declared this as the first year of the Galactic Era. Your people are looking for a real leader.

YOU ARE THE MASTER STRATEGIST

Use the Stars! control panels to command your capitol worlds and fleets, to seek out strange new worlds and new civilizations, to boldly help your neighbors understand their role in the doctrine of Manifest Destiny.

Stars! may seem complicated at first glance. Lots of tiles and windows, lots of text, lots of colors. These things require a little explaining. Only a very little.

But not here. You won't need to pay more than cursory attention to most of the information on the screen, most of the time. It's there when you need it. You can even temporarily collapse some pieces if you find them distracting.

To orient yourself, before you go nose to beak with the other spacially challenged races, PLAY THE TUTORIAL GAME. Just click on **New Game** in the opening screen, then click on **Tutorial** in the New Game dialog.

To get help during play, LEFT-CLICK the mouse when you see this cursor:  Also consider clicking on Help buttons in the dialogs and choosing the Help commands in the main menu.

Now get going. The universe is waiting, along with up to 15 other star-hungry races.

Multi-player games

You can challenge other beings on a single computer or across a local area network, or by transferring turn files using ftp, modems, email, computer bulletin boards, or any other file transfer mechanism you can think of. There's room for up to 16 of you in the Stars! universe, with any mix of human and computer opponents.

WHAT YOU'LL FIND IN THIS PLAYER'S GUIDE

Use this guide to help you set up any type of single or multi-player game, to familiarize yourself with the playing screen, and to learn both the high points and the details of creating and running the universe. For quick reference, everything in this paper guide is duplicated in the Stars! online help.

WE'D LIKE TO HEAR FROM YOU

Stars! was designed by strategy game fanatics for strategy gamers of *all* levels. Many features in the game have appeared at the request of the Stars! players community. So talk to us. Tell us what you think and what you want (keeping in mind that Stars! is turn-based, not live action).

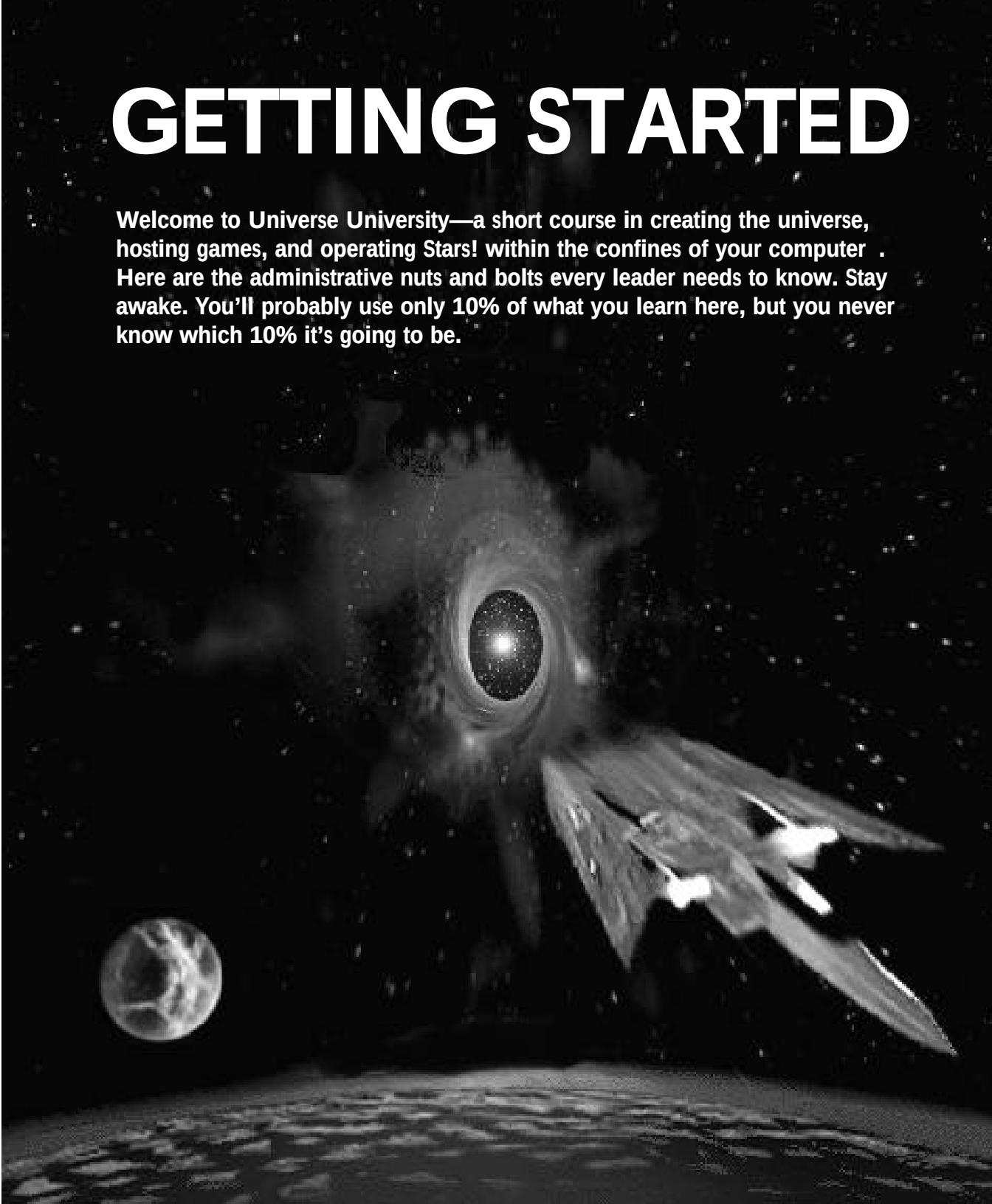
To contact us with your ideas and reactions, send e-mail to stars@webmap.com.

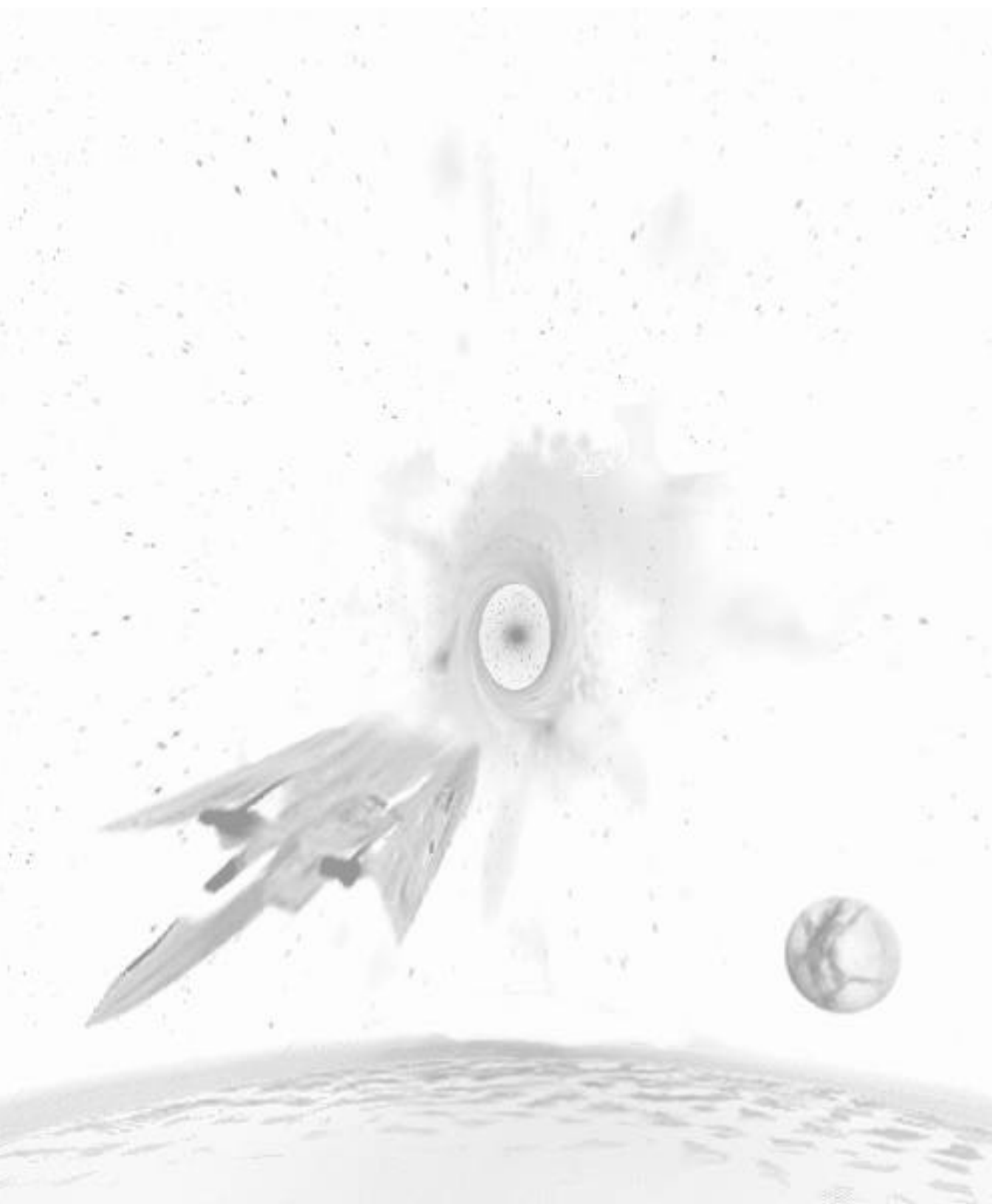
To learn more about the Stars! universe outside your computer, visit our official Web site, Waypoint Zero, at www.webmap.com/stars!, and our publisher's handsome Web site at www.empire.co.uk.

To trade information and converse with other Stars! players, visit the Stars! Usenet news group, rec.games.computer.stars.

GETTING STARTED

Welcome to Universe University—a short course in creating the universe, hosting games, and operating Stars! within the confines of your computer . Here are the administrative nuts and bolts every leader needs to know. Stay awake. You'll probably use only 10% of what you learn here, but you never know which 10% it's going to be.





2 SINGLE PLAYER SETUP

PLAYING THE TUTORIAL

Stars! contains an intelligent, online tutorial that, in the course of one short (and very real) game, introduces you to a variety of basic strategies and familiarizes you with all the player tools. If you've never played Stars! before, we highly recommend that you play the tutorial first.

The current instruction is always highlighted.

- Just click on **New Game** in the opening screen, then on **Begin Tutorial** in the New Game dialog. You can quit the tutorial at any time, saving your place to begin again later.

❋ To start the tutorial where you left off, or to start over, click on **New Game** and **Begin Tutorial**, or use the **Help** (**Tutorial**) menu item.

STARTING A SINGLE PLAYER GAME

Like we said, if you've never played Stars! or a game like Stars! before, we recommend that you *play the tutorial* before you strike out on your own.

To start a new single player game:

1. Click on **New Game** on the opening screen or on **File** (**New**) from the Stars! main menu.
2. In the New Game dialog, select the universe size, difficulty level and race to play. To learn about or modify the attributes of your race, click on **Customize Race**. The Custom Race wizard appears.

   You can learn about defining a race in chapter 20, Designing Custom Races.
3. When you're done selecting game settings, **OK** the New Game dialog. You'll be prompted to enter a file name under which to save the game.
4. Enter any name up to eight characters long (don't worry about typing an extension). Stars! creates a set of files containing data for that game and for each human and computer player in the game. You can save the game wherever you wish. By default, game files are saved in the Stars! install directory.

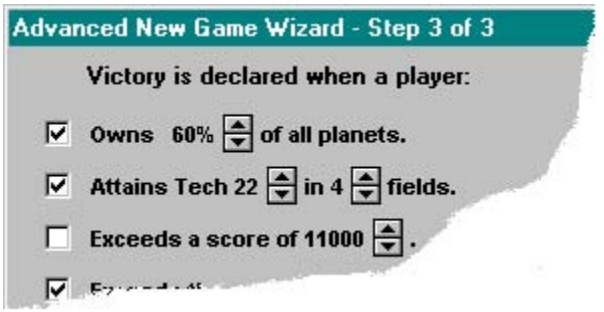
   You can click on **Advanced Game** in the New Game dialog to specify the number of AI (computer) players and the conditions for victory.

   The game begins, with your home world displayed on the screen and in the Command pane, Scanner pane and Selection Summary pane. For the first turn, the Messages pane contains tips that help you get started.
5. Use this turn to investigate your home planet, start basic production and research, and send your scouts out to learn about the nearby worlds.
6. Once you finish the turn, select the **Turn** (**Generate**) menu item or press the F9 key. Your next turn generates immediately.
7. To quit, select **File** (**Exit**) or **File** (**Close**). If you've made changes since the start of the turn, Stars! prompts you to save. If you don't save, you'll start the same turn over the next time you open the game.

   IMPORTANT: The first time you play Stars!, exit using the **File** (**Exit**) command. This writes the stars.ini file to the Windows directory, saving game options and helping to prevent that pesky serial number dialog from appearing again.
8. When you wish to continue the game where you left off, click on **Continue Game** on the opening screen. You can also click on **Open Game**, selecting *gamename*.m1 from the playing directory.

SETTING AND VIEWING WINNING CONDITIONS

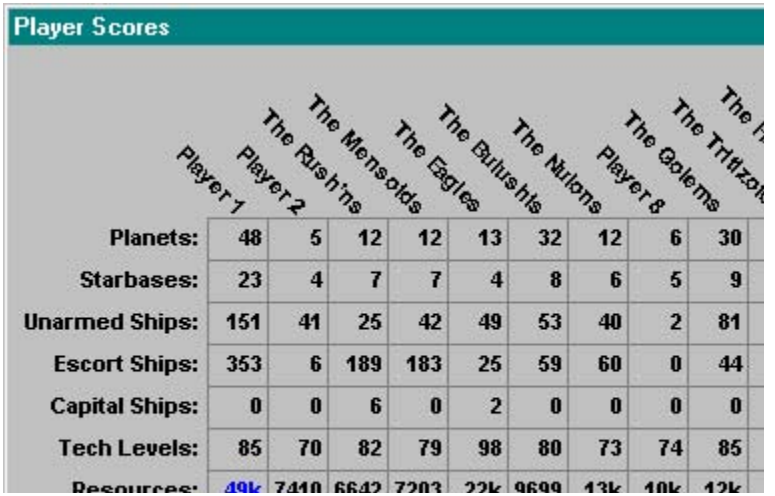
You can specify one or more winning conditions in step 3 of the Advanced New Game wizard. You can also accept the default conditions provided by Stars!. To view the winning conditions once the game has begun, choose the **View** (**Race**) menu item, then turn to page 3 of the View Game Parameters dialog that appears.



Because you can control the variety and combination of winning conditions, more than one player can be declared the winner. All players are notified in a message when someone wins. You can continue to play past this point, or end the game.

Track the score using **Reports** (**Score**) menu item (or by pressing F10). The Score sheet shows your score and current ranking, and a history of scores since the game began.

If Public Player Scores is selected in the game setup, all player's scores and rankings appear in the Score sheet.



3 MULTI-PLAYER SETUP

SETTING UP A SINGLE COMPUTER, MULTI-PLAYER (HOT SEAT) GAME

In a multi-player game, designate one person as the host. This person is in charge of generating turns and generally administering the game. A player can also act as host.

What the Host Needs to Do (Hot Seat Play)

Before you begin setup, have your players design their races and give you the race files for loading into the game. Alternately, you can customize a race for any player who wishes it.

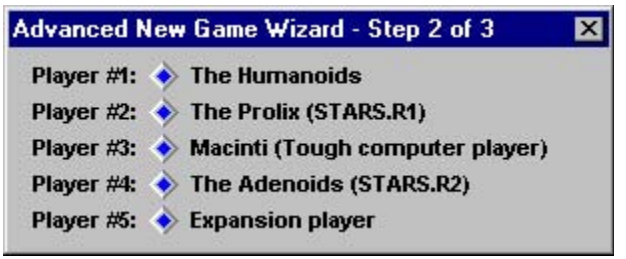
Learn about creating a race in chapter 20, Designing Custom Races.

To set up a multi-player hot seat game:

1. Click on **New Game** on the opening screen or on **File** (**New**) from the Stars! main menu. The New Game dialog appears.
2. Click on **Advanced Options**, then specify options such as the universe size, difficulty level, relative starting positions, accelerated play for BBS games, number and type of players (Human or AI), and the victory conditions. Be sure to load any custom race files provided by the players. Create player positions for latecomers if you think it's necessary.

Learn about Winning Conditions, p 3-9

3. The order of players listed in Step 2 of the Advanced New Game dialog becomes part of the turn file name for each player.

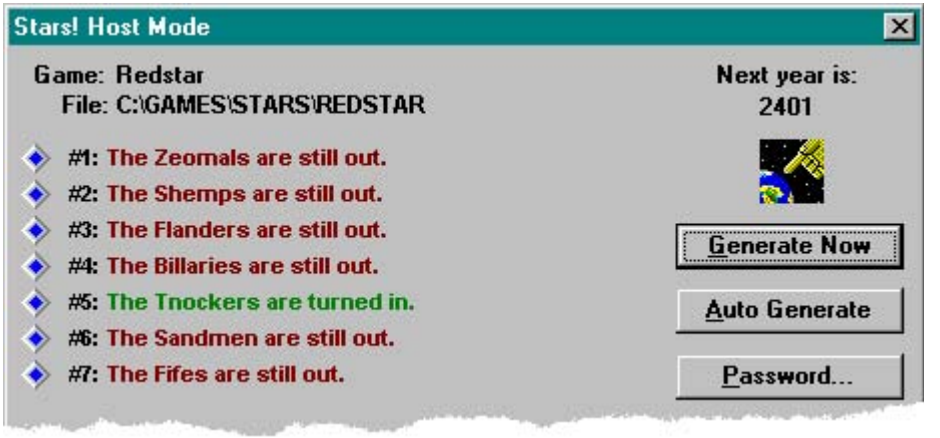


Player #1's file is gamename.m1 (for example, redstar.m1).

4. Tell each player their number. They'll need it to open the correct file at the start of their turn.

5. You'll be prompted for a game name. Enter any name up to eight characters long (don't worry about typing an extension). Stars! creates a set of files containing data for that game and each player in the game. You can save the game wherever you wish. By default, Stars! will save the game files in the Stars! install directory.

6. The Stars! Host Mode dialog appears. Create a password, if you want to prevent other players from opening the game file. Click on **Auto Generate** to start the game.



7. Help the players understand what they need to do using the instructions in What Each Player Needs to Do. If you're playing as well as hosting, you'll probably find it easier to start a second instance of Stars!, playing from one and using the other to handle host duties.

❋ To quit the game, click on **Close** in the Host dialog.

❋ To restart the host, start Stars!, click on **Open Game**, and choose the *gamename*.hst file.

What Each Player Needs to Do (Hot Seat Play)

If you've never played Stars! or a game like Stars! before, we recommend that you *play the tutorial* before you strike out on your own. That said:

❋ (Optional) Before the host creates a game, use Stars! Custom Race wizard to create a customized race, then give the race file to the host. Open the Custom Race wizard using the **File** (**Custom Race wizard**) menu item.

Learn about creating a race in chapter 20, Designing Custom Races.

Once the host creates the game, do the following:

1. Start Stars! and click on **Open Game** from the opening screen. Open your player file, *gamename*.m*N*. The Host needs to provide you with the *gamename*.

Your game begins, with your home world displayed on the screen and in the Command, Scanner and Selection Summary panes. For the first turn, the Message pane contains tips that help you get started. Investigate your home planet, start basic production and research, and send your scouts out to learn about the nearby worlds.

2. Place your game files in the same directory each turn. The directory location is your choice—we recommend creating a play directory within the Stars! directory to keep things simple.

3. Once you finish the turn, select the menu command **Turn** (**Wait for New**). Stars! will minimize, waiting for a new turn. When the new turn is ready, it will beep once and flash, while displaying Turn Available.

Screen Layout

To change the basic layout of the Stars! screen use the **View** (**Window Layout**) menu item. You can also rearrange and open and close tiles, and resize individual panes by clicking on their edges and dragging. For details, read the start of chapter 5, The Stars! Screen.

If you wish, you can exit the game before or after you finish the turn. You can save your changes or start the turn again if you don't like the way things are going. Read Exiting the Game on page 4-4 for more information.

If you plan to be absent for two or more turns, follow the instructions in Being Absent from Play on page 3-10.

SETTING UP NETWORK-BASED MULTI-PLAYER GAMES

In a multi-player game, designate one person as the host. This person is in charge of generating turns and generally administering the game. A player can also act as host.

What the Host Needs to Do (Network Play)

You will need to set up the game in a shared directory (sharepoint) accessible to all players. This sharepoint is the place that will contain all the game files, and where the players will go to open their games. The sharepoint can exist on a local area network, or via a modem connection (if you are using Windows 95 Dial-up Networking capabilities—just connect to the server machine or to another Win95 machine with the Plus Pack installed). You can also create network connections using PC-NFS or any other software that allows you to attach directories on the remote server as if they were local.

Before you begin setup, have your players design their races and give you the race files for loading into the game. Alternately, you can customize a race for any player who wishes it.

Learn about creating a race in chapter 20, Designing Custom Races.

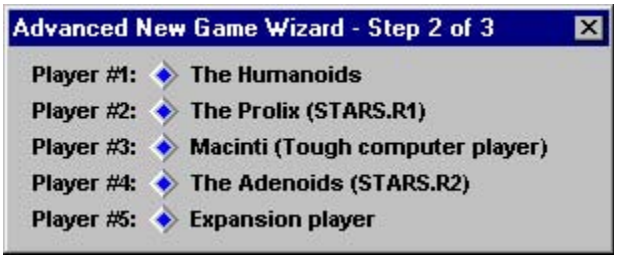
To set up a network game:

1. Create the sharepoint that will contain all the game files. We recommend keeping it simple—no more than one play directory per game, for all players in the game. You can create this directory within the directory containing the stars!.exe program, or anywhere else you wish.

2. Click on **New Game** on the opening screen or on **File** (**New**) from the Stars! main menu. The New Game dialog appears.

3. Click on **Advanced Options**, then specify options such as the universe size, difficulty level, relative starting positions, accelerated play for BBS games, number and type of players (real or AI), and the winning conditions. Be sure to load any custom race files provided by the players. Create player positions for latecomers if you wish.

Learn about Winning Conditions, p 3-9



Player #1's file is gamename.m1 (for example, redstar.m1).

The order of players listed in Step 2 of the Advanced New Game dialog becomes part of the turn filename for each player.

4. Tell each player their number. They'll need it to open the correct turn file.

5. You'll be prompted for a game name. Enter any name up to eight characters long (don't worry about typing an extension). Stars! creates a set of files containing data for that game and each player in the game. Save the game in the shared directory.

6. Select **Auto Generate** in the Host dialog. The dialog will minimize, waiting for all players to submit their turns. Stars! automatically submits any turn into the shared directory. Once that's done, Stars! automatically generates a new turn, then returns to wait mode.

7. If you want to force a new turn to be generated, double-click on the Stars! host icon, then select **Generate Now** from the Host dialog. To cause Stars! to auto-generate turns again, select **Auto Generate** again. The dialog will minimize and wait for players as before. Stars! will continue to follow any existing orders for players who didn't submit their turns on time. All messages and data for the missed turns, such as planets discovered or battles fought, will be present when they load the new turn.

8. Help the players understand what they need to do using the following instructions in What Each Player Needs to Do (Network Play). If you're playing as well as hosting, you'll probably find it easier to start a second instance of Stars!, playing from one and using the other to handle host duties.

- To quit the game, click on **Close** in the Host dialog.
- To restart the host, start Stars!, click on **Open Game**, and choose the *gamename*.hst file.

What Each Player Needs to Do (Network Play)

If you've never played Stars! or a game like Stars! before, we recommend that you *play the tutorial* before you strike out on your own. That said:

- (Optional) Before the host creates a game, use Stars! Custom Race wizard to create a customized race, then give the race file to the host. Open the Custom Race wizard using the **File** (**Custom Race wizard**) menu item.

Learn about creating a race in chapter 20, Designing Custom Races.

Once the host creates the game, do the following on the machine where you'll play:

1. Start Stars! and click on **Open Game** from the opening screen. Open your player file, *gamename*.m*N*. This file should be located in the shared play directory (sharepoint) set up by the host. The host is also responsible for supplying you with the *gamename*.

   Your game begins, with your home world displayed on the screen and in the Command, Scanner and Selection Summary panes. For the first turn, the Message pane contains tips that help you get started. Investigate your home planet, start basic production and research, and send your scouts out to learn about the nearby worlds.

2. Once you finish the turn, select the menu command **Turn** (**Wait for New**). Stars! will minimize, waiting for a new turn.

   When the new turn is ready, the Stars! icon will beep once and flash, while displaying Turn Available. If you wish, you can exit the game before or after you finish the turn. You can save your changes or start the turn again if you don't like the way things are going. Read Exiting The Game on page 4-4 for more information.

If you plan to be absent for two or more turns, follow the instructions in Being Absent from Play on page 3-10.

SETTING UP MODEM, FTP, AND PLAY BY E-MAIL GAMES

All multi-player games need one person to act as the host. This person is in charge of generating turns and generally administering the game. A player can also host a game.

What the Host Needs to Do (Modem/FTP/E-mail Play)

Stars is turn-based, not real-time. This means modems can be used to transfer turn files once they are generated. You can do this through a BBS, e-mail, upload/download from an FTP site, or using any other method you wish to transfer files from the host to player systems. There aren't any special transfer protocols for modem users—you're just uploading or downloading files.

Tip: Notice the Accelerated BBS Play option in the Advanced Game setup. You may wish to check this option during setup to jump-start the game.

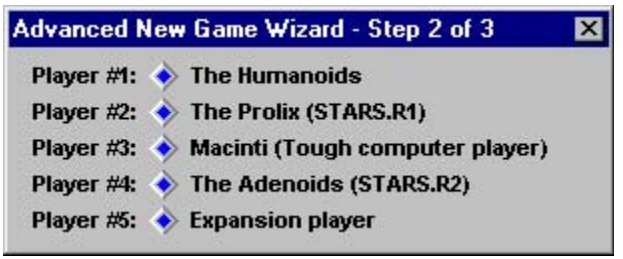
Before you begin setup, have your players design their races and give you the race files for loading into the game. Alternately, you can customize a race for any player who wishes it.

Learn about creating a race in chapter 20, Designing Custom Races.

To set up a modem or email-based game:

1. Click on **New Game** on the opening screen or on **File** (**New**) from the Stars! main menu. The New Game dialog appears.
2. Click on **Advanced Options**, then specify options such as the universe size, difficulty level, relative starting positions, accelerated play for BBS games, the number and type of players (real or AI), and the winning conditions. Create player positions for latecomers if you wish.

Learn about Winning Conditions, p 3-9



Player #1's file is gamename.m1 (for example, redstar.m1).

The order of players listed in step 2 of the New Game dialog becomes part of the turn filename for each player.

3. Save the game using any name up to eight characters long. Stars! creates a set of files containing data for that game and each player in the game. You can save the game wherever you wish. By default, Stars! will save the game files in the Stars! install directory.

4. The Stars! Host dialog appears. Click on **Close** to stop the game until all players have submitted their turns. If you'd like to leave Stars! running, click on **Auto Generate.**

5. Before the first turn each player needs to download the universe file, *gamename*.xy, and their player file, *gamename*.m*N* (where *N* is the player number), for the newly created game. Alternately, you can upload or e-mail*gamename.*xy and *gamename*.m*N* to each player. These files will be located in the same directory in which you saved the game.

6. Help the players understand what they need to do using the instructions in the following section on What Each Player Needs to Do (Modem/FTP/E-mail Play). If you're playing as well as hosting, you'll probably find it easier to start a second instance of Stars!, playing from one and using the other to handle host duties.

After each player has sent you their turn (in the form of the log file, *gamename*.x*N*) do the following:

1. Place each player's submitted log file in the directory where you set up the game.

2. Start Stars! (if it's not already running), click on **Open Game**, and open the host file, *gamename*.hst.

3. If the Stars! host is set to auto-generate mode, it will automatically generate the new turn as soon as you move the player log files into the game directory. If you're generating turns manually, then select **Generate Now** from the Host dialog. Stars! will continue to follow any existing orders for players who didn't submit their turns on time. All messages and data for the missed turns, such as planets discovered or battles fought, will be present when they load the new turn.

4. Once the turn is generated, notify the players that the new turn is available. You can e-mail or upload each newly updated *gamename*.m*N* file or allow each player to download it themselves.

What Each Player Needs to Do (Modem/FTP/E-mail Play)

(Optional) Before the host creates a game, use Stars! Custom Race wizard to create a customized race, then give the race file to the host.

Once the host creates the game, do the following on the machine where you'll play:

1. Obtain the *gamename*.xy and *gamename*.m*N* files from your host, where *gamename* is the name entered by the host in the File Save dialog and *N* is your player number; for example, nonstop.m1.

   Place these files in a playing directory you've created on your own system. Use the same directory for each turn. You can create a unique play directory for each game, or put all games into one directory. Whatever your strategy, we recommend that you keep it simple.

2. Start Stars! and click on **Open Game** from the opening screen. Open your player file, *gamename*.m*N*.

   Your game begins, with your home world displayed on the screen and in the Command, Scanner and Selection Summary panes. For the first turn, the Message pane contains tips that help you get started. Investigate your home planet, start basic production and research, and send your scouts out to learn about the nearby worlds.

3. Select **File** (**Save and Submit**), then **File** (**Exit**). Or, if you're trading turns quickly or leave your computer on for long periods of time, you can also use **Turn** (**Wait for New**)—a much simpler scenario.

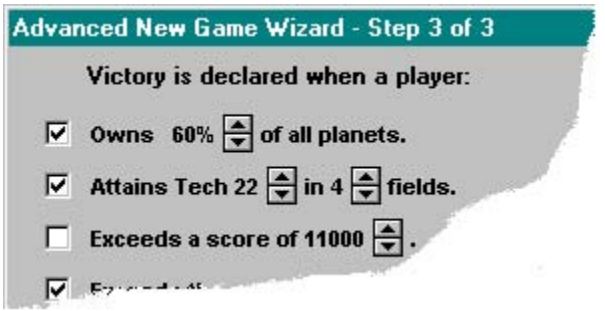
   If you wish, you can exit the game before or after you finish the turn. You can save your changes or start the turn again if you don't like the way things are going. Read Exiting the Game on page 4-4 for more information.

4. Upload or e-mail only your log file, *gamename*.x*N* file to the host system.

If you plan to be absent for more than a few turns, follow the instructions in Being Absent from Play on page 3-10.

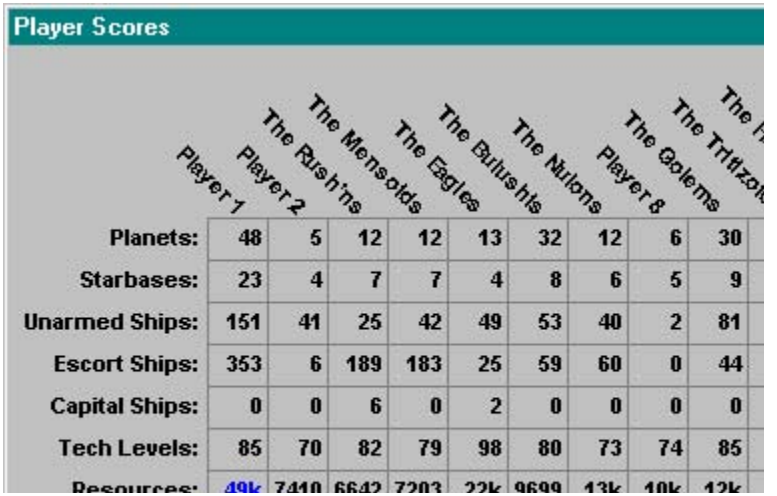
SETTING AND VIEWING WINNING CONDITIONS

You can specify one or more winning conditions in step 3 of the Advanced New Game wizard. You can also accept the default conditions provided by Stars!. To view the winning conditions once the game has begun, choose the **View** (**Race**) menu item, then turn to page 3 of the View Game Parameters dialog that appears.



Because you can control the variety and combination of winning conditions, more than one player can be declared the winner. All players are notified in a message when someone wins. You can continue to play past this point, or end the game.

Track the score using **Reports** (**Score**) menu item (or by pressing F10). The Score sheet shows your score and current ranking, and a history of scores since the game began.



ADDING EXPANSION PLAYERS

If you think there'll be other players joining later in the game, add an Expansion Player for each missing person. Stars! will assign a housekeeper AI to run things for those players until they actually join the action. This AI will keep planets and fleets active, making sure the production queues are busy, etc. It does not develop any strategy.

When the player joins, right click in the Host dialog on the diamond next to their name and change the type to Human Controlled. Then, give the latecomer a break by asking the other players to leave them alone for N years.

BEING ABSENT FROM PLAY

When you miss a turn, Stars! will continue to follow your existing orders. All messages and data for the missed turns, such as planets discovered or battles fought, will be present the next time you load a turn.

Alternately, if you plan on missing more than a few turns, you can ask the host to substitute a housekeeper AI to keep your planets and fleets active. This AI does not develop any strategy for you.

Hot-seat and network players:

- Just tell the host you're going inactive and ask them to substitute the AI in your place.

Modem, e-mail or BBS players only:

1. Give your host a copy of your history file, *gamename*.h*N*. This will allow the host to update the universe for you while you're gone.
2. Be sure that your host returns the history file and new turn file to you before you open your game. You won't be able to open your turn until this time.

What the host needs to do:

1. Open the Host dialog, if it's not open yet. Use **File** (**Open**), selecting *gamename*.hst.
2. Right-click on the blue diamond next to the name of the player who's absent. Choose **Human (Currently inactive**).
3. When the player returns, right-click on the diamond and select **Human Controlled**. You'll have to do this before the player can open their player file, *gamename*.m*N*.
4. If you're running the game over a modem, e-mailor BBS, return the updated history file, *gamename*.h*N*, and player file, *gamename*.m*N*, to the player.

FINDING MULTI-PLAYER GAMES ON THE INTERNET

If you want to join a multi-player game, or start your own, but can't find other players, visit the Stars! Web site, Waypoint Zero, at **www.webmap.com/stars!**. Read the web pages on Player Resources for a list of host sites (growing weekly) and other host and player information.

PASSWORDS

Create or change a password for the current game using the **Commands** (**Change Password**) menu item.

You can create a default game password using the following option in the [Misc] section of **stars.ini** file:

DefaultPassword=<password>

<password> is the password you wish to use. If you are sure that your opponents will not have access to your stars.ini file you can set this to your password. Whenever you open a game file that is protected by this password you will not be prompted to enter it. If DefaultPassword is not present in stars.ini, type it in under the [Misc] heading.

The stars.ini file is written into your Windows directory the first time you save a Stars! game. It doesn't exist before that time.

Don't Forget Your Password

If you forget or lose your password, there is nothing you can do to open the password-protected game. We hope you're not reading this because you've forgotten. Don't worry, empires come, empires go.

Inactive Players and Passwords

There is no valid password for inactive players. When the player becomes active again, they get their old password back.

USING A TIMER APPLICATION?

If you use a timer application to launch Stars! on the host system, take a look at the variety of command line options on page 4-5. These options will do such things as start Windows and Stars!, generate the new turn and exit both programs.

CREATING A UNIVERSE FROM THE COMMAND LINE

For experienced hosts only
Use the following command to create a new game/universe without using Stars! setup dialogs:

stars!.exe -a game.def

game.def has the following format:

Game Name
Universe Size (0-4) Density (0-3) Starting Distance (0-3)
Maximum Minerals (0/1) Slow Tech (0/1) BBS Play (0/1) .... (other boxes)
Number of Players, only humans allowed (1-16)
Pathnames to race files
VC # of planets (0/1) Percent of planets (20-100)
VC Tech (0/1) Level (8-26) Fields (2-6)
VC Score (0/1) Score (1000-20000)
VC Exceeds nearest (0/1) (Percent (20-300)
VC Production (0/1) Capacity (10-500)
VC Capital Ships (0/1) Number (10-300)
VC Turns (0/1) Years (30-900)
VC Must Meet (0-7) Minimum Years (30-500)
New universe file name

The following is a sample game.def file:

```
Tour of Duty
3 2 2
0 0 0 0 1 1 1
4
c:\stars\play\game.r1
c:\stars\play\game.r2
c:\stars\play\game.r3
c:\stars\play\game.r4
1 60
1 26 4
0
1 150
0
1 100
0
2 150
c:\stars\play\game.xy
```

4 THINGS EVERY STARS! PLAYER SHOULD KNOW

TUNING STARS! TO YOUR DISPLAY RESOLUTION

The higher your screen resolution, the better Stars! will look. However, it will run on any color VGA display.

1024 by 768 (or better)

For maximum playing pleasure.

- Use this menu command: **View** (**Window Layout > Large**).
- If you use large fonts, you may need to specify **View** (**Window Layout > Medium**).

800 by 600

This is the **minimum recommended** resolution.

1. Choose the menu item, **View** (**Window Layout > Medium**). If you're using large fonts, you may find that the small window layout works better for you.
2. Resize each of the windows to optimize the information you need to see at a glance.
3. If the screen still seems too cramped try hiding the Toolbar using the menu item, **View** (**Toolbar**). Most of the Toolbar functions are available using shortcut keystrokes.

640 by 480 (VGA)

This is the **minimum required** resolution.

1. Use this menu command: **View** (**Window Layout > Small**).
2. Resize each of the windows to optimize the information you need to see at a glance.
3. Collapse tiles in the Command pane, expanding them when needed.
4. If the screen still seems too cramped try hiding the Toolbar using the menu item **View** (**Toolbar**). Most of the Toolbar functions are available using shortcut keystrokes.

REPLAYING A PREVIOUS TURN

Stars! allows you to save previous turns in case you need to resubmit a turn to the host or replay the current turn. You can specify saving up to 999 turns using the Backups option in the stars.ini file. If you don't specify the number of turns to backup, Stars! backs up only the previous turn. Once you save and submit, Stars! saves the current turn as the most recent backup copy.

To start a turn using data from a previous turn (for example, the last turn played):

1. Copy all files for the current game from the backup directory into the playing directory. For example, if you originally saved the game under the name of Nonstop, copy all files with Nonstop as the prefix. To ensure that you are choosing the correct files, check the date/time stamp on the backup directory.
2. Choose **Open Game** or **File** (**Open**). Select the player log file player turn file (for example, nonstop.m1), and click **OK**. You should be back where you started, although the universe will reflect the current positions of other players.

SAVING YOUR GAME—WHAT IT MEANS

Default Save Behavior

By default, saving a game saves only the current state of the current turn. The previous turn's data is saved in a directory called Backup, under the directory in which you're saving the game. Stars! creates the Backup directory

automatically. Each time you generate a turn, the old data in the Backup directory is overwritten with the previous turn's data.

Saving the Current State of Your Game

Use the **File** (**Save**) menu item to save the current state of your game. This is useful if you need to exit the game before you finish your turn. When you restart Stars! just click on **Continue Game** to resume where you left off.

If you close the game before saving you will see this alert, you'll be asked if you wish to save before exiting.

Saving More than One Previous Turn

If you'd like to save more than one previous turn for review or any other purpose, do the following:

1. Open the **stars.ini** file for editing. It's a plain text file located in your Windows directory.
2. Under the [MISC] section, set the **Backups** option to a number of turns, between 1 and 999. If the Backups option isn't present, go ahead and type it in; for example:

   Backups=50

Backup directories will be named Backup1 to BackupN. Old game files will be stored in the backup directory according to the turn number. For example when Backups=4 then the first turn would be backed up to the directory backup1, the second to backup2, the third to backup3, the fourth to backup4, the fifth to backup1 and so on.

The stars.ini file is written into your Windows directory the first time you save a Stars! game. It doesn't exist before that time.

Save and Submit

Multi-player Games Only

Use the **File** (**Save and Submit**) command to save the current state of your game and submit your turn. In multi-player games, this marks your turn as finished so the host can auto-generate; **Save** does not.

If you close the game before saving you'll be asked if you wish to save and submit your turn before exiting.

EXITING THE GAME

Select **File** (**Exit**) or **File** (**Close**). If you've made changes since the beginning of the turn, Stars! will prompt you to save or, if you're in a multi-player game, to save and submit your turn.

Exiting Stars! the First Time

IMPORTANT: The first time you play Stars!, exit using the **File** (**Exit**) menu item. This writes the stars.ini file to the Windows directory, saving game options and helping to prevent that pesky serial number dialog from appearing again.

Exiting Stars! to Erase Changes

If you want to erase the changes you've made that turn, before you submit, do the following:

1. Choose **File** (**Close**), without saving.
2. Select **Open Game** from the opening screen, then choose your player log file from the Open File dialog. You'll be back at the start of the turn you just left.

Save vs. Save and Submit

Multi-player Games Only

Use the **File** (**Save and Submit**) command to save the current state of your game and submit your turn. In multi-player games, this marks your turn as finished so the host can auto-generate; **Save** does not.

If you close the game before saving you'll be asked if you wish to save and submit your turn before exiting.

OPTIONS FOR LAUNCHING STARS!

Stars! can be launched from a DOS or Windows command line, using the Stars! command only or with a variety of options. When using an option, you must also supply either a player or host file name as an argument. You can also supply only the player or host file name without any other options.

With or without options, supplying the file name causes Stars! to start without displaying the splash screen (startup bitmap).

-s – start with battle sound effects turned off

-m – start with game music turned off

-t – try, then exit. If you specify a player file, this opens the newly generated turn. If the turn hasn't been generated yet, then Stars! exits. If you specify a host file, this checks to see if all players have submitted their changes for the turn. If they have, Stars! generates the new turn and exits. Otherwise, it just exits.

-w –wait. If you specify a host file, this auto-generates the new turn as soon as all players have submitted their changes. If you specify a player file, this waits for the new turn to be generated. This option does not cause Stars! to exit.

-g –generate and exit. Specify a host file only. This forces the turn to generate regardless of whether all players have submitted changes, then exits. You can't load a player file when you use this option.

-p *password* –supplies the password on the command line. You can use this with a host file or a password-protected player file.

-x –Exit Windows when Stars! exits. This is a good match with the **-b** option if you wish to create a script that automatically starts Windows, generates the new turn, then exits Windows.

The **-x** flag is for 16-bit Windows only (3.1 or 3.11). Behavior of the **-x** option on OS/2, Windows NT, or Windows 95 is undefined and probably not what you want.

-b *gamelist_file* –Generate turns for each game listed in the supplied file name.

-a game.def – Create a new game/universe based on the contents of game.def. This allows you to create new games from the command line. See Creating a Universe from the Command Line on page 3-13 for more information.

-h – Causes Stars! to alway ask you for a password when you open a turn file. This helps keep the wimps who can't play without cheating out of your turn files. This is especially useful for hot seat play.

Examples

stars! ***Filename***	Load a player or host file, starting the game without loading the splash screen.
stars! -w ***gamename*****.hst**	Load the host file and enter Auto Generate mode.
stars! -w ***gamename*****.m*****N***	Load the specified player file and wait for the host to generate a new turn.
stars! -t ***gamename*****.m*****N***	Load the specified player file; quit if the host has not yet generated a new turn.
stars! -g ***gamename*****.hst**	Load the host file, force a new turn and quit.
stars! -w -g ***gamename*****.hst**	Load the host file, wait for all players to submit turns, generate and quit.
stars! -t -g ***gamename*****.hst**	Load the host file, generate a new turn only if all players have submitted turns, then quit. If it generates the turn the return value is 1; if the turn is not generated the value is 0.
stars! -t -b ***gamelist_file***	Conditionally generate turns for a list of games.
stars! -x -b ***gamelist_file***	Generate turns for each game listed in the supplied file name, then exit Windows. Useful for BBS play

For example if your BBS is OS/2, NT or Windows-based you can launch Stars! with the **-b *gamelist_file*** parameter to batch generate turns for multiple games. Stars! will automatically exit when the last turn has been generated. The file listing the games must contain one game name per line including the full path:

```
c:\games\stars!\play\frenzy.hst
c:\games\stars!\play\game.hst
c:\user\jeff\stars!\killer.hst
```

You can name this games list file anything you want. If you are running a DOS-based BBS but have Windows installed on the machine, you can launch Windows and Stars! from a nightly maintenance script similar to this:

win c:\games\stars!\stars!.exe -x -b c:\games\stars!\gamelist.txt

This will launch Windows and Stars!, generate a turn for each game listed in gamelist.txt, then exit Stars! and Windows. This method is optimal for Windows 3.1.

If you have Windows for Workgroups installed (Windows 3.11) you may want ato use the **win /n** option:

win /n c:\games\stars!\stars!.exe -x -b c:\games\stars!\gamelist.txt

This will prevent Windows from loading any of its network drivers and suppress its login prompt. If you only need to generate a turn for a single game you can still use the **-g *gamename.*hst** parameter with or without **-x** (use -x with Windows 3.1 or 3.11only).

COPY PROTECTION

Save Your Serial Number

The first time you run Stars!, you will be asked to enter your unique serial number. The number is printed on 2 labels enclosed in the pack.
It is very important that you keep the serial number where you can find it later.

Stars! may ask for the number again if :

- You re-install Stars!
- You change your computer's configuration.
- You install a Stars! upgrade.

One Computer - One Serial Number

Each computer running Stars! must use a unique serial number. Given this, the copy protection activates ONLY in the following situations:

- **When you cancel the serial number dialog**.
- **When players using the same serial number submit turns created on two different computers** . This includes submitting turns from networked computers sharing a serial number. If you want to submit turns from different machines on a network, each of those machines must have a copy of Stars! installed with a unique serial number.
- **One person submits turns for two or more player positions from different computers that share the same Stars! serial number** .

In every case, Stars! will give you a chance to enter a unique serial number and continue play normally.

How the Copy Protection Works

Stars! is played by submitting player log files to the host (either a human or the game itself). Each log file is tagged with the serial number for the copy of Stars! used to generate the file, and a fingerprint of the computer on which the game was installed. If the Stars! host receives two or more log files with different computer fingerprints and the same serial number it assumes that all the players associated with those log files are guilty of software piracy, and activates the copy protection for those players (honest players are unaffected). The copy protection makes the game unplayable for the guilty parties, until each player enters a unique serial number. As soon as each player submits turns with a unique serial number, the copy protection deactivates.

The Host Doesn't Need a Serial Number

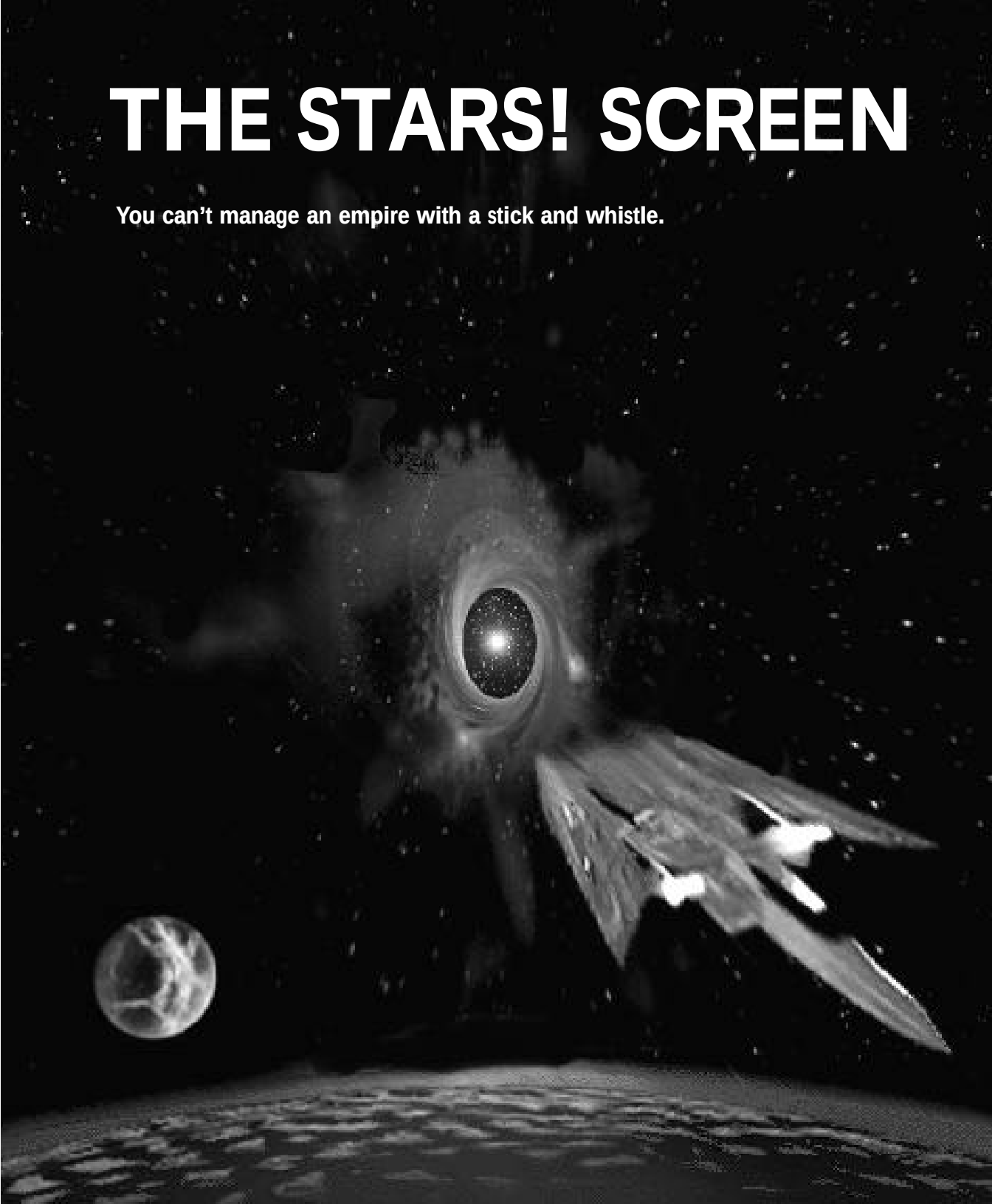
A host can use the same serial number as *one* other player without affecting the host or the player. This allows you to host and play from the same copy of Stars!

Computers Running More than One Version of Windows

If you are running some combination of Windows 95, NT or 3.x on a single computer you will be asked for a serial number the first time you run Stars! under each version of Windows. After that, you should only be bothered for the number if you change your system configuration or delete the stars.ini file from the Windows directory. Each version of Windows will have its own directory containing Windows system software. By default, this directory is named Windows. You may have named it something different on your system.

THE STARS! SCREEN

You can't manage an empire with a stick and whistle.



5 THE STARS!-SCREEN

The Stars! playing screen is divided into four panes:

Command This is where you give detailed orders to your fleets and planets. Collapsible tiles display data and controls for the planet or fleet under your command.	**Scanner** This is your view of the universe. Use the scanner toolbar to select filters and overlays. Manipulate fleet routes and track opponents who ignore your 'no trespassing' signs.
Messages This is where you receive yearly reports from far-flung fleets and planets and messages from other players. Build alliances or deceive enemies with your crafty replies.	**Selection Summary** This area shows details about the object selected in the Scanner pane.

Changing the Layout

From the main menu, select **View** (**Window Layout**). Select **Small Screen**, **Medium Screen** or **Large Screen**. Choose the screen layout that works best with your video resolution.

Shrinking and Growing Panes

Change the size of each of the four panes by simply clicking on and dragging the pane borders.

COMMAND PANE

The Command pane is where you give orders to a planet or fleet that you own. Select one of your planets to command and controls for giving orders to that planet appear on tiles. Select one of your fleets to command and controls for giving orders to that fleet appear.

Moving and Collapsing Tiles

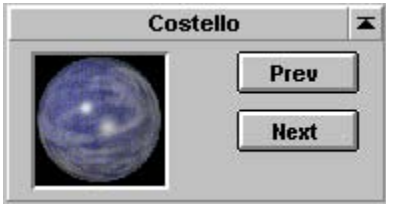
You can individually move and collapse the command pane tiles.

To move a tile, click on the title bar and drag to a new location.

Click here to collapse a

Tiles Seen When Commanding a Planet

Planet tile



This tile displays the planet currently under your command.

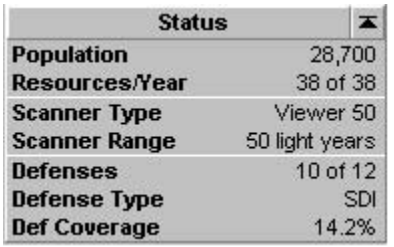
Click on **Prev** and **Next** to scroll through your planets in the order they are listed in the Planet Summary Report. Hold down on the SHIFT key while clicking on Prev or Next to scroll between planets that have a starbase.

Minerals on Hand tile

Left-click on items in the tile for more information.

The upper half of this tile lists the amount of each mineral available for immediate use. The lower half tells you how many mines and factories are in operation out of the total number the population can operate.

Status tile



Left-click on items in the tile for more information.

This tile displays planetary population, scanner and defense statistics.

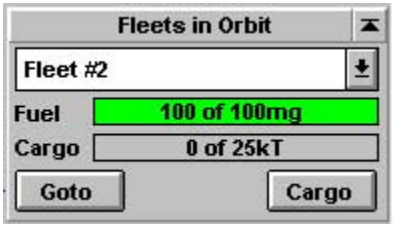
Resources/Year – The tile displays the number of resources, or units of work, available for use by the planet out of the total number of resources generated by the planet annually. The difference, if any, is the number allocated to research.

Defenses — Number of defenses deployed out of the maximum your population can operate.

Defense Type — Current defense technologyy

Defense Coverage – Estimated percentage of bombs, troops and mineral packet bombardments that can be stopped with current defenses.

Fleets in Orbit tile



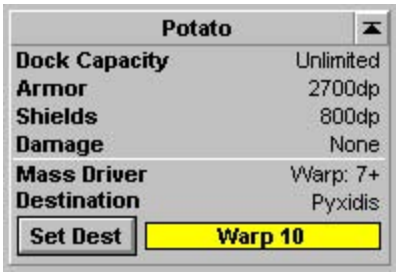
Small screen layout: click on the Cargo button to display the cargo list.

The fleet dropdown lists all fleets and other objects in orbit. Fleets you own are listed in black. Fleets belonging to other players are listed in red.

Click on **Cargo** to transfer cargo between your fleets and the planet.

Click on **Goto** to bring the specified fleet under command.

Starbase tile



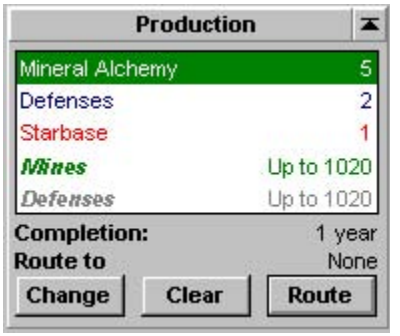
Left-click on items in the tile for more information.

This tile describes the local starbase, if any, and its mass driver.

To target the mass driver, click on **Set Dest** and then click on the destination in the scanner.

Left-click and drag in the gauge to set the packet speed. The warp specified is the maximum safe speed. The gauge color is purple as long as the speed is safe, changes to yellow when the speed is over the limit, and then to red when the maximum decay rate is reached.

Production tile



This tile displays the planet's production queue. Colors in the queue show completion status:

Green: all will be completed this turn
Blue: at least one will be completed this turn
Black: at least one more turn before even one is finished
Red: mineral concentration is so low that the time to completion exceeds 100 years
Gray: will be skipped this year

Auto build items display in italics.

Click on **Change** to alter production orders.

Click on **Clear** to remove everything from your production queue.

Click on **Route,** then click on a planet in the scanner to send all newly built ships to that planet. Alternately, CTRL-click in the Scanner on the destination planet.

Tiles Seen When Commanding a Fleet

Fleet tile

This tile shows the fleet currently under your command. A fleet may contain several types of ships. The picture displays the most significant type of ship in the fleet. A small plus (+) sign represents each additional ship type (up to four).

Click on **Prev** and **Next** to scroll through your fleets in the order they are listed in the Fleet Summary Report.

Click on **Rename** to rename the fleet.

Location tile

This tile displays the location of the fleet under command.

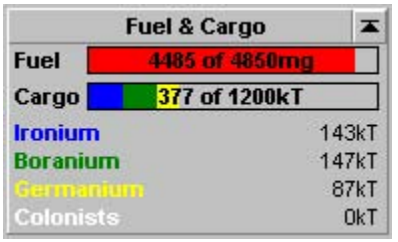
Selecting **Goto** switches to commanding the planet you're orbiting. You can't do this if you don't own the planet.

Click **Xfer** to transfer cargo between the fleet and planet.

For fleets in deep space, cargo transfer is replaced by cargo jettison.

Click on **Jettison** to dump some or all of your cargo.

Fuel and Cargo tile



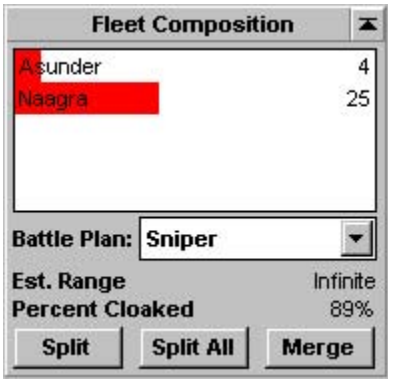
Small screen layout: click in the Cargo gauge to see the cargo list.

Fuel — The Fuel gauge shows the current and maximum fuel level of the fleet under command.

Cargo — The Cargo gauge shows the amounts of cargo loaded and the total capacity of the fleet.

Left-click in the cargo gauge to transfer or jettison cargo, or pick up available salvage.

Fleet Composition tile



Left-click on a ship name to see design details and specs.

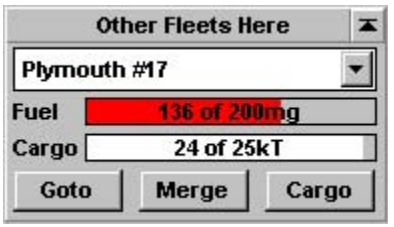
This list shows the name and number of each type of ship in the fleet. The extent of damage, if any, is shown by the red bar over the name. Left-click on the name to see more details.

To change the battle plan for the fleet under command, choose a new plan from the dropdown list. To view, create or edit a battle plan, select **Battle Plans…** from the dropdown list.

Click on **Split** to divide the fleet in two. Click on **Split All** to break up the fleet into separate fleets of a single ship type.

Click **Merge** to merge the fleet with other fleets in the same location.

Other Fleets Here tile



Small screen layout: click on the Cargo button to display fuel and cargo amounts.

This tile lists all other fleets and mineral packets in the same location as the fleet under command.

Click and drag in the Fuel gauge to transfer fuel between the fleet under command and the fleet specified in the tile.

To bring another fleet here under command, choose one from the dropdown list, then click **Goto**.

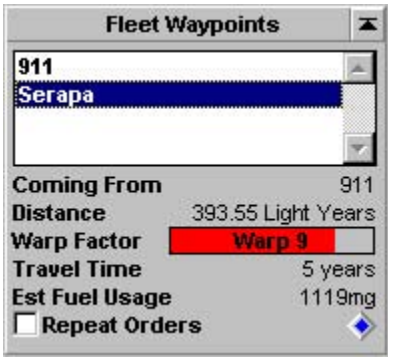
Click on **Merge** to transfer ships between the fleet under command and the fleet shown in the tile.

Click on **Cargo** to transfer cargo between the fleet under command and the fleet or object specified in the tile.

Fleet Waypoints tile

The Fleet Waypoints tile lists all the waypoints assigned the fleet under command. The first waypoint listed is the current location. If the fleet are in transit between waypoints, the location is given as coordinates in deep space.

Right-click on the blue diamond to display a list of items at the same location as the selected waypoint. Select an alternate item to change the exact waypoint target.



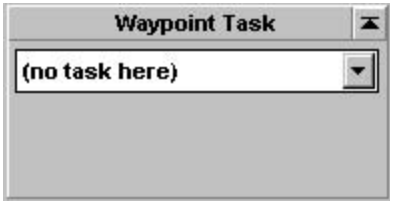
Warp Factor: By default, Stars! chooses the ideal speed for reaching the next waypoint with the fuel available. To manually set the speed select the waypoint from the list, then left-click and drag in the Warp gauge.

To use a stargate, drag the bar all the way to the right. If you're not at a stargate, the travel time will display Never.

Fuel Usage: This tells you exactly how much fuel the fleet will use to reach the waypoint at its current speed. The number turns red if you can't reach the waypoint given the current speed and fuel supply.

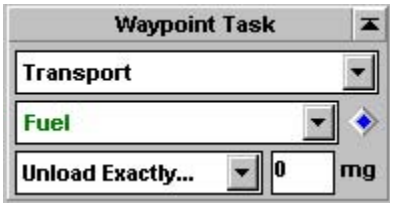
Repeat Orders: Repeats the total set of orders you assigned using the Waypoints Task tile. Assigning repeat orders works best when the first waypoint in the list is repeated as the last.

Waypoint Task tile



This tile shows the task the fleet must perform at that waypoint selected in the Fleet Waypoints tile. Click on the dropdown to assign a task.

Transport tasks



Use this task to load or unload minerals, fuel or colonists.

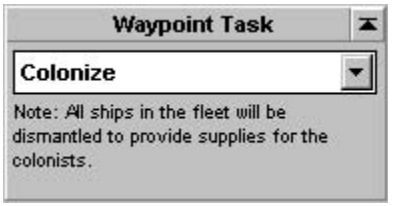
The middle dropdown lists methods of loading and unloading. When you assign a load/unload action, the cargo name turns from black to green. Some load/unload actions allow you to specify exact amounts.

Zip Orders: To quickly load fuel, minerals and colonists, right-click on the blue diamond and choose a pre-defined order from the list. If a Zip Order doesn't quite meet your needs, you can create your own or modify the existing order.

Load / Unload Actions:

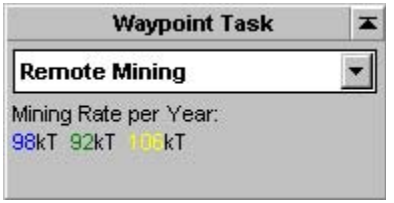
(no action)	No transport task for the specified cargo.
Load All Available	Load as much of the specified cargo as the fleet can hold.
Unload All	Unload all the specified cargo at the waypoint.
Load Exactly...	Load the amount specified only if there is room in the hold.
Unload Exactly...	Unload the amount specified only if the fleet is carrying that amount.
Fill up to %...	Loads up to the specified portion of the cargo hold subject to amount available at waypoint and room left in hold.
Wait for %...	Remain at the waypoint until exactly X % of the hold is filled.
Load Optimal	(fuel only) Load or unload fuel until the fleet carries only the exact amount needed to reach the next waypoint. You can use this task to send a fleet loaded with fuel to rescue a stranded fleet. The rescue fleet will transfer only the amount of fuel it can spare without stranding itself.
Load Dunnage	(minerals and colonists only) This command waits until all other loads and unloads are complete, then loads as many colonists or amount of a mineral as will fit in the remaining space. For example, setting Load All Germanium, Load Dunnage Ironium, will load all the Germanium that is available, then as much Ironium as possible. If more than one dunnage cargo is specified, they are loaded in the order of Ironium, Boranium, Germanium, and Colonists.
Set Amount to...	Load or unload the cargo until the **amount on board** is the amount specified. If less than the specified cargo is available, the fleet will not move on.
Set Waypoint to...	Load or unload the cargo until the **amount at the waypoint** is the amount specified. This order is always carried out to the best of the fleet's ability that turn but does not prevent the fleet from moving on.

Colonize



Use this task to transport colonists to an unpopulated planet. The fleet must contain a ship with a colonization module, and must be loaded with colonists. Once the colony is established you can use freighters to transport additional colonists.

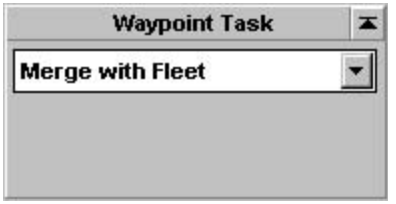
Remote Mining



Use this task to mine an uninhabited planet. The fleet must have robot miners. The quantity of each mineral the fleet can mine annually is shown by tonnage and color.

Blue: Ironiumm
Green: Boraniumm
Yellow: Germanium

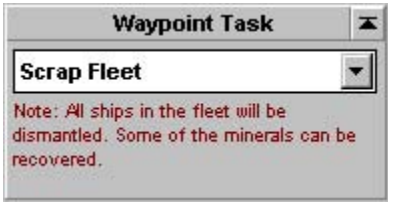
Merge with Fleet



Use this task to merge the fleet under command with a fleet at the waypoint. The fleet given this task will be assimilated into the target fleet and assume its orders.

To pick from multiple fleets at the waypoint, right-click on the blue diamond in the Fleet Waypoints tile. Otherwise, Stars! will pick the most dormant fleet with similar ships.

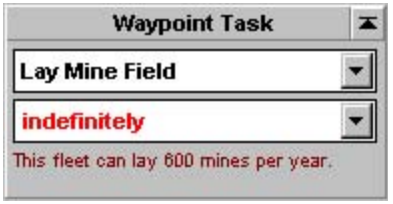
Scrap Fleet



Use this task to salvage a portion of the minerals in the hulls of outdated or unrecoverable ships. Players can also trade technological knowledge by scrapping ships at each other's planets.

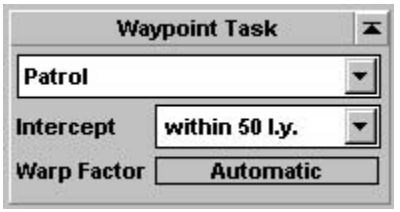
The minerals are deposited on the planet where the fleet is scrapped. The percentage of minerals recovered varies depending on the situation.

Lay Mine Fields



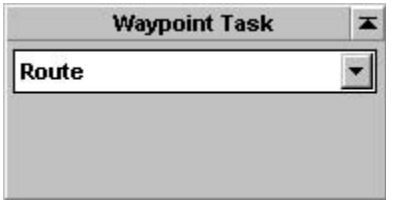
Use this task to lay mines at the waypoint. Fleets given this task must have mine layers. The tile notes how many mines the fleet will lay for each year it performs the task.

Patrol



Use this task to intercept incoming enemy fleets. Set the detection range to specify how far away the patrol ship will look for interlopers. Manually select an intercept speed, or use the default of Automatic intercept in the shortest possible time using the least amount of fuel.

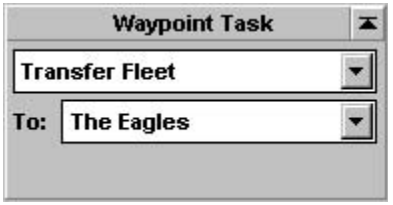
Route



Use the Route task to automatically send fleets from one planet to another. If the waypoint planet has a routing destination, the fleet assigned this task will automatically set that destination as its next waypoint.

Route destinations are set using the Production tile.

Transfer Fleet

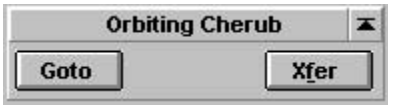


Use this task to place one of your fleets under the command of another player, and to give that player knowledge of the design of all ships in that fleet.

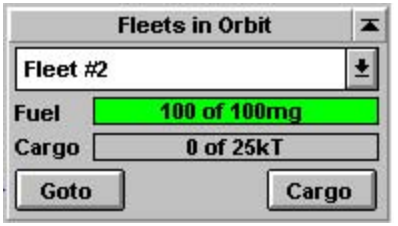
This task will fail if the receiving player does not have enough free ship design slots.

Bringing a Fleet or Planet into the Command pane

Stars! provides more than one way to command a planet or fleet. Use the method that suits your needs.



To command the planet you are orbiting, click on **Goto** in the Location tile. (The planet must already belong to you.)



From the Command pane, you can select one of your fleets in the same location using the Fleets in Orbit tile. Just choose a fleet from the dropdown list and click on **Goto**.

You can also use the Scanner pane to bring either a planet or fleet into the Command pane. If the object you wish to command is the only thing at that location, just double-click on it in the Scanner.

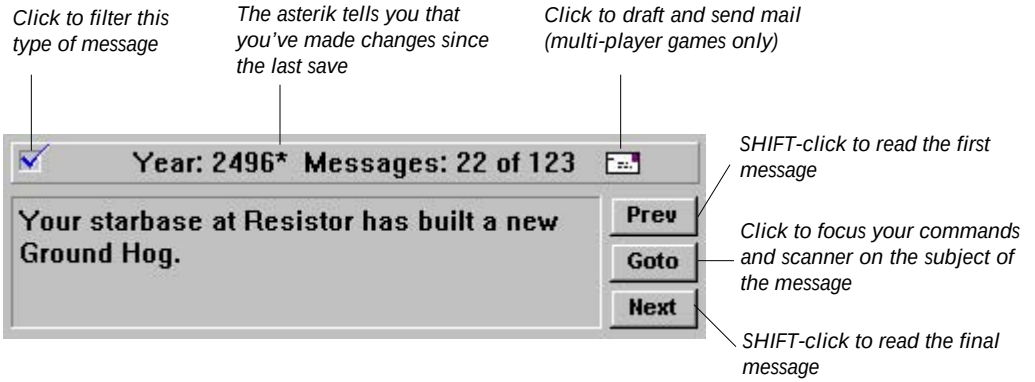
When more than one object is in the same location, do one of the following:

- Right-click on the location, then click on the name of the object from the pop-up list.
- Left-click on the location till the object you wish to command appears in the Command pane.

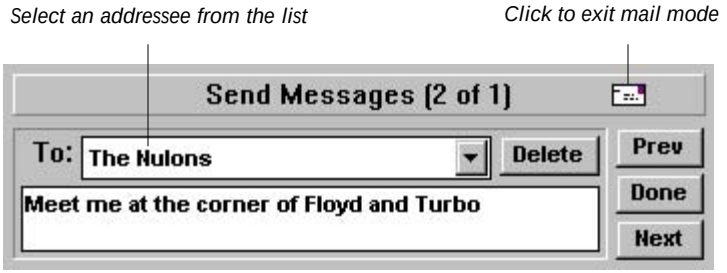
When clicking on a location to cycle through your planet and fleets, other player's fleets are skipped. Even though you'd like to, you can't display these fleets in the Command pane. Other player's fleets, if present, are listed in the pop-up: selecting one will display what you know about that fleet in the Selection Summary pane.

MESSAGES PANE

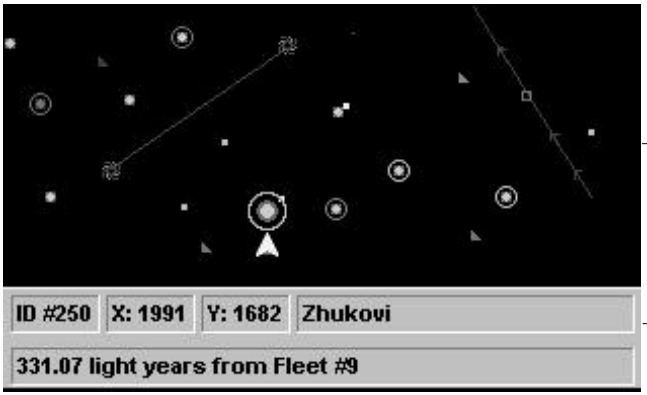
Each year you receive reports about conditions in the universe and the progress of your empire. As your empire expands, you'll find that some types of messages become routine and distracting, and can be filtered.



Filtered Messages



Mail Form



SCANNER PANE

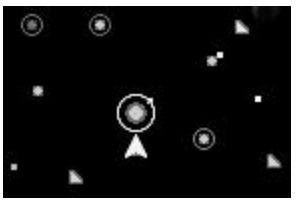
The Scanner pane is your window on the universe. All players see the same map but not the same details.

Command	Keyboard/Mouse Action
Set Waypoints	SHIFT+ left-click on the waypoint
Route Fleets	CTRL + left-click on the destination planet
List Objects at Waypoint	Right-click on the waypoint
Measure Distance	Hold down SHIFT, then right-click and drag
Show your current location	Press V

Choosing Your View of the Universe

There are six exclusive scanner views, which you can use with one or more overlays. Use the toolbar above the scanner to select views and overlays. Display or hide the toolbar with the **View** (**Toolbar**) menu item.

Normal view



This default scanner view displays the essentials, such as planets, fleets positions, orbital devices, salvage sites, wormholes.

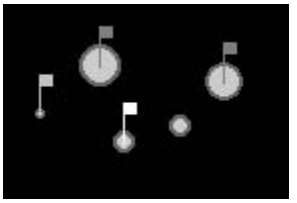
Surface Minerals

This view displays the quantity of minerals under the surface at each planet you own or have scanned. The mineral colors and scale matches the display in the Summary pane's mineral content graph. Rescaling that graph rescales the bars in this view.

Mineral Concentration

This view displays the concentration of minerals under the surface at each planet you own or have scanned. The mineral colors and scale matches the display in the Summary pane's mineral content graph. Rescaling that graph rescales the bars in this view.

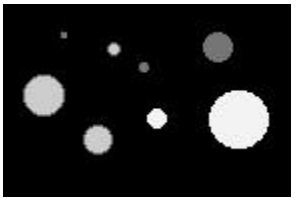
Planet Value



This view uses color and size to display which planets are best suited to your race. Blue flags mark your planets, yellow flags mark your friends' planets and red flags mark planets of neutrals and enemies. Planets without flags are uninhabited.

Green: habitable. The larger the circle, the more hospitable the planet.
Yellow: habitable after terraforming. Larger circles indicate faster minimal terraforming and better results.
Red: uninhabitable. The larger the circle, the harsher the planet.

Population



This view displays population levels. The wider the circle, the larger the population. Planets are sorted by color:

Green: your colonized planets
Yellow: friends
Red: enemies and neutrals
Uncolonized planets that you've visited are small and grey.

No Player Information

This view hides all traces of planet ownership. Just a thousand dim points of light.

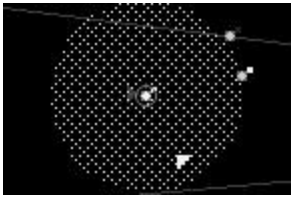
Add Waypoints Mode

You can add waypoints for the fleet under command using just the mouse. This mode is primarily for beginning players, or anyone who wants to eat and play at the same time.

Scanner Coverage overlay

This overlay displays the effectiveness of radar coverage at the percentage selected in the dropdown. Reducing the displayed coverage does not change the actual coverage—it only gives you an idea of what your coverage would be in relation to the cloaking ability of opponents' ships. For example, select 75% to show how close a fleet with 25% cloaking will need to be before you can detect it.

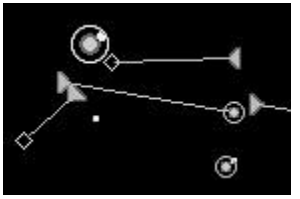
Mine Fields overlay



This overlay displays minefields as colored grids. Your minefields are blue, friends are yellow, and enemies and neutrals are red.

You can see both the center and radius of another player's minefield only if either the center of the mine field is in range of your penetrating scanner, or you have hit the minefield at least once and the center is in range of your normal scanners or you are currently in the minefield.

Fleet Paths overlay

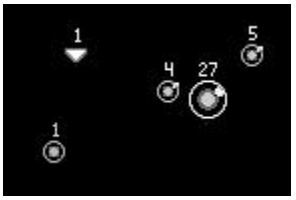


This overlay displays the assigned paths of all your fleets.

Planet Names overlay

This overlay displays planet names in the scanner. If the names are too crowded, increase the scanner zoom factor to place more distance between planets. If Player Colors is activated, planet names appear in the color assigned to that player. Your planet names always appear in white.

Ship Count overlay



This overlay displays the number of ships at a location. Active Ship Design and Enemy Ship Class filters will limit the count to ships specified in those filters. For example, if you have a filter that displays only enemy warships, the number above enemy fleets and planets will be the count of only warships.

If Player Colors are turned on, numbers appear in the color assigned to that player. Your fleet numbers always appear in white.

Idle Fleets filter

Idle fleets are fleets with no movement orders. This overlay displays only your idle fleets and any active enemy fleets. Only those planets with idle fleets in orbit will show orbit rings. Fleets that have run out of fuel are still considered active, and won't appear if you're using only this overlay.

Exception: Claim Adjuster fleets that are terraforming from orbit are not considered idle.

Ship Design filter

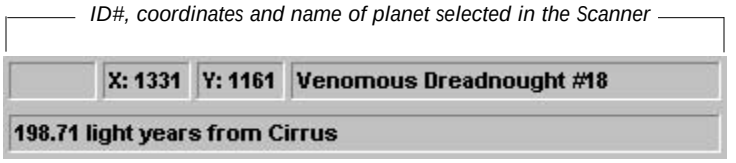
This overlay displays only those fleets that contain a specific ship design. Only those planets orbited by the selected ships will have orbit rings.

Enemy Ship Class filter

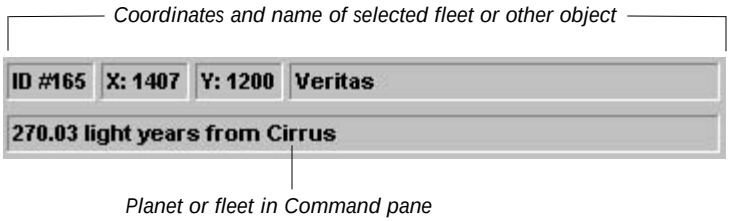
This overlay displays opponent fleets containing a specific selected ship class. Opponents'fleets appears as red triangles. Only opponents' planets orbited by the selected ships will have orbit rings.

Status Bar

Planets



Fleets, Mineral Packets and Wormholes



When you select a fleet orbiting a planet, only the planet's information is displayed in the status bar. If the scanner is too narrow to display all the status bar information, left-click in the upper bar to display a pop-up summary. To get information on the fleet, right-click on the planet and select the fleet from the pop-up list.

Zooming

To zoom in or out of the Scanner, you can either use the **View** (**Zoom**) menu item, click on the magnifying glass in the toolbar, or use the + and - keys on the numeric keypad.

Player Colors

Stars! assigns each player a color when a game is created. Use the **Reports** (**Score**) to open the Score sheet, then switch to the history graph to see which player has which color.

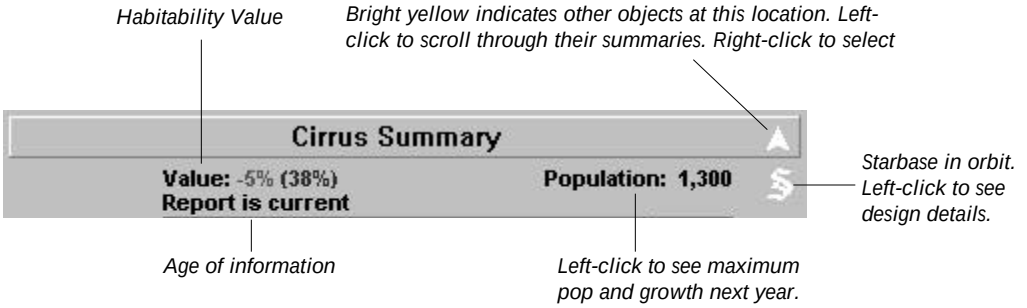
Select the **View** (**Player Colors**) menu item to activate player colors in the Scanner. When the Ship Count and Planet Names overlays are on, fleet numbers and planet names for other players appear in their color. Your planets remain white.

SELECTION SUMMARY PANE

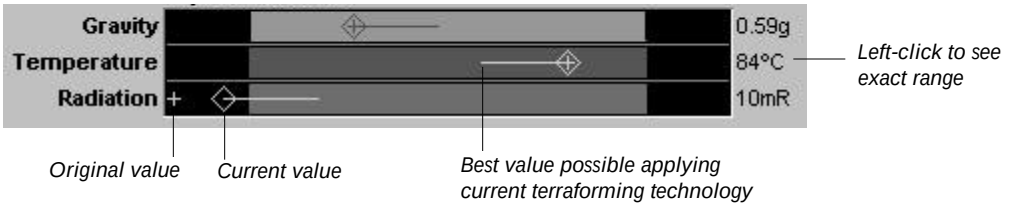
The selection summary pane displays what you know about an object you select in the scanner.

Planet Summary

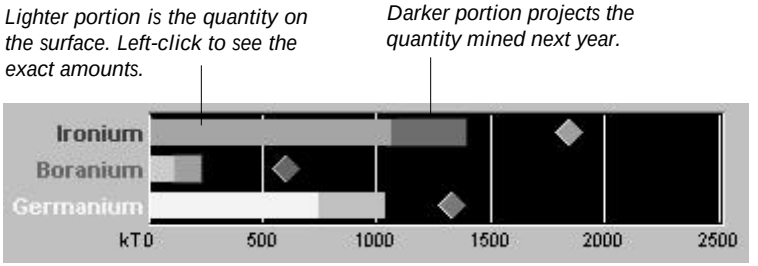
The planet summary displays information only for planets you've visited or scanned.



Environment Graph



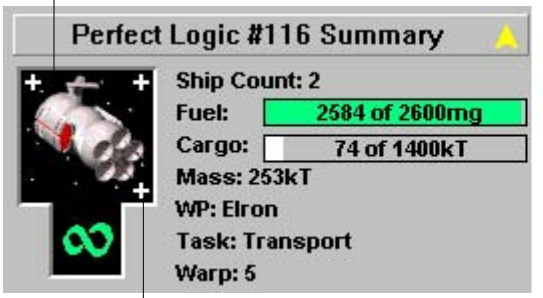
Mineral Content Graph



Fleet Summary

The more significant type of ship in the fleet. Left-click to see other ship types. Right-click to see hull designs.

If you scan opponents with a Robber Baron or Pick Pocket scanner, you also see fuel and cargo levels

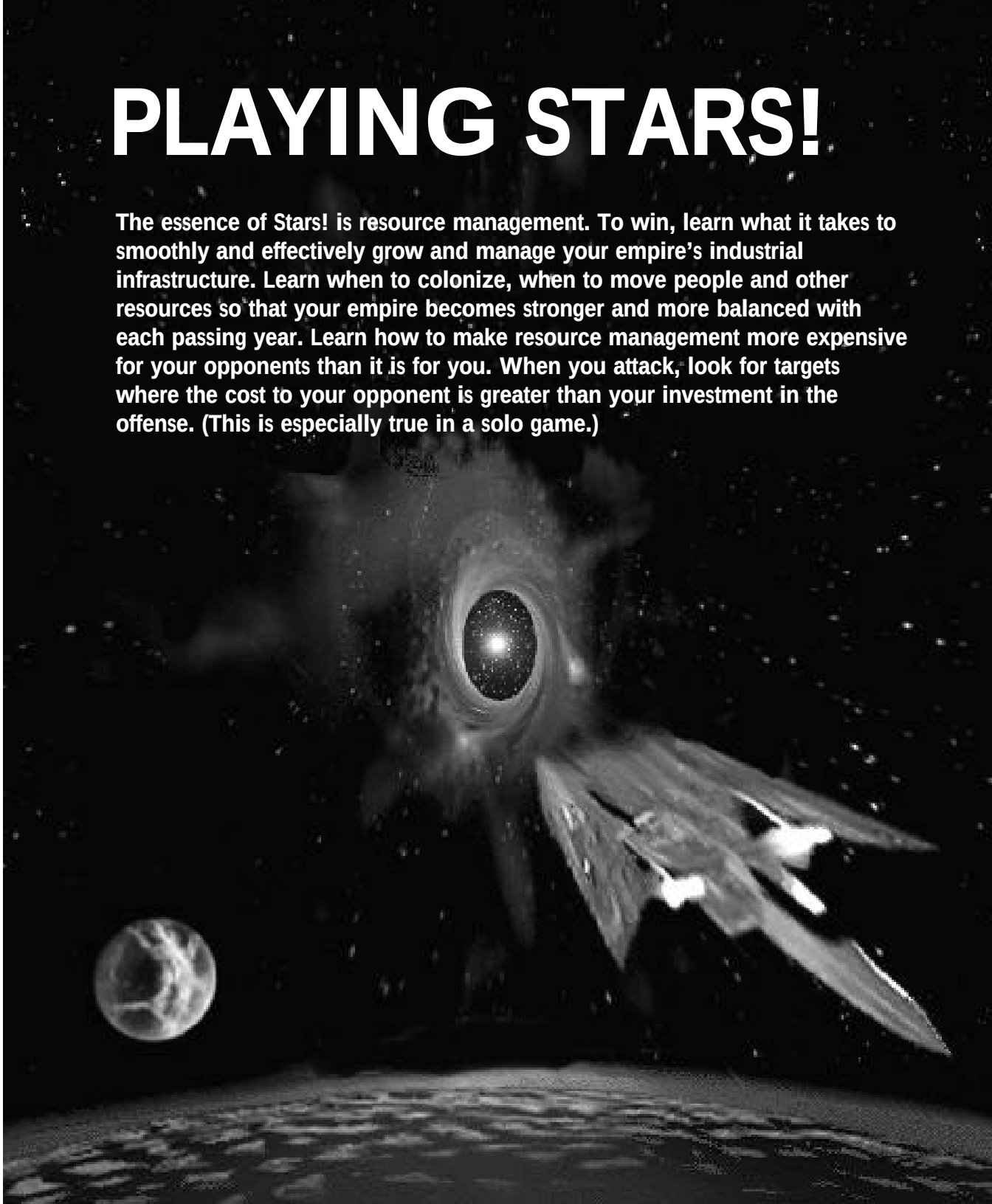


A plus sign represents a ship type not shown.

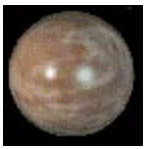
Left-click here to display the race name and player number.

PLAYING STARS!

The essence of Stars! is resource management. To win, learn what it takes to smoothly and effectively grow and manage your empire's industrial infrastructure. Learn when to colonize, when to move people and other resources so that your empire becomes stronger and more balanced with each passing year. Learn how to make resource management more expensive for your opponents than it is for you. When you attack, look for targets where the cost to your opponent is greater than your investment in the offense. (This is especially true in a solo game.)



6 PLANETS



Planets are the gold nuggets of the Stars! universe: everybody wants them, and hardly anyone wants to share. 'Green'worlds give your people a place to grow, learn and produce. The minerals in each planet provide the building blocks for all the technology you create, including planetary installations such as defenses and scanners, and starbases with stargates that act as navigational shortcuts and mass drivers that fling minerals between systems.

When you click on a planet in the Scanner, you're actually selecting a star system. The planet that appears on your screen is the most desirable planet in that system. (There may be lesser rocks in the system, too, but you won't want them.) If you colonize a planet, it becomes your capitol world in that system, the local center of government and industry. If the planet is dangerous to your people, you can mine it from orbit, and ship its valuable minerals to other parts of your empire. If the planet is inhabited by another player, you can try to take it away. If the owner is another human, you can also try to establish trade relations.

No matter how you play, you need to give your people room to grow. That growth rate will vary on any given planet, depending on the levels of gravity, temperature, and radiation. You can create a race that is immune to one or more of these environmental factors—a very expensive advantage. You can also make a planet's environment more hospitable by terraforming.

YOUR HOME WORLD AND OTHER INHABITED PLANETS

You start the game on your home world, a place with optimal environmental conditions where you have a small but thriving population, basic industry in the form of factories and mines, fundamental technology, and a short range, planet-based scanner. In orbit, you have a starbase capable of building ships and providing a small amount of planetary defense. Each player's home

world, whether it belongs to a computer-generated AI or a human, starts out with these same items. When you colonize another planet, you can build these and other items as your resources and knowledge of technology allow.

Resources are units of work created by people and factories. They represent the effort involved in performing a task or producing an item.

All planets contain minerals. All home worlds start with the same surface mineral content — adjusted to even out any advantages or disadvantages provided by racial attributes. If your home planet has a serious lack of a specific mineral on its surface then your opponents are initially faced with the same problem.

All the information about a planet you own and the controls you use to give orders to that planet are available in Command pane. The Selection Summary shows the gravity, temperature and radiation levels of a planet, as well as the rate at which your population will grow. Environmental conditions on your home world are optimal for your species.

To learn about the Command pane and other parts of the Stars! screen, look at chapter 2, The Stars! Screen.

Abandoning a Planet

When you abandon a planet, the starbase and all installations on that planet are destroyed automatically.

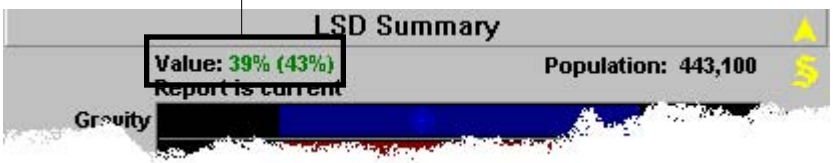
POPULATION

People, along with factories, create the resources you need to build your empire. The more people you have, the more resources you have, and the faster you'll get things done.

Your maximum population on a planet is based on the planet's Habitability Value. When you select a planet in the Scanner its value, along with other information, appears in the Selection Summary:

To see how many colonists it takes to produce one resource per year, use the **View** (**Race**) menu item then turn to page 5 of the View Race dialog.

The first number is the current value. The number in parentheses is the value after terraforming.



The higher the percentage, the more people the planet will support. A negative value tells you the percentage of population the planet will kill if you colonize under the current environmental conditions. For example, a planet

with the optimal value of 100% may fully support 1,000,000 people. A planet with a value of 50% can support only 500,000 people. A planet with a value of -9% will kill 0.9% of the colonists on that planet each year.

All planets with a positive value of less than 5% are treated as 5% planets in determining the maximum supportable population.

Annual Growth Rate

This rate is calculated by multiplying the habitability value by the Maximum Colonist Growth Rate Per Year found on page 4 of the View Race dialog. For races with the Hyper-Expansion trait the actual maximum colonists growth rate is twice that displayed.

Growth Rate

The habitability value also determines your population's annual growth rate. Left-click on the value to display the current growth rate, as well the total number of people the planet will support based on current environmental conditions. The growth rate is shown as "up to n%" because the rate slows as the population approaches the maximum. Population growth begins to plateau after the planet reaches 25% capacity.

Maximum Population

The maximum population on an optimal planet, for all races but two, is 1,000,000.

Hyper-Expansion races grow fast but are limited to one-half the typical maximum population: 500,000 on an optimal world. The ingenuity of Jack-of-All-Trades races grants them a maximum population that is 20% greater than normal: under optimal conditions a Jack-of-All-Trades world supports up to 1,200,000 people.

Races who possess the Only Basic Remote Mining trait also receive an additional 10% increase beyond their normal limit. For example, the maximum population for a Jack-of-All-Trades race with Only Basic Remote Mining is 1,320,000 (under optimal conditions).

Alternate Reality Races and Population

Since Alternate Reality races live on starbases, they use a different population model. Read more about them in chapter 22.

Overcrowding

The number of people between 100% and 300% population capacity work at 50% efficiency. Any population in excess of 300% capacity can perform no useful work whatsoever.

Deaths from overcrowding reach an annual maximum of 12% at 400% capacity.

Killer Planets

Planets with negative habitability values kill colonists. The annual death rate is calculated as:

Habitability Value / 10 of the colonists on the planet each year

For example, a planet with a habitability value of -10% inhabited by 2000 colonists will kill 1% or 20 colonists per year.

If you terraform the planet after colonizing, your people will begin to die until environmental conditions become favorable (the value becomes 0% or a positive number).

Claim Adjuster Races and Negative Planets
If your race has the Claim Adjuster trait, your colonists automatically terraform your new planet to the best of their abilities the first year it is colonized.

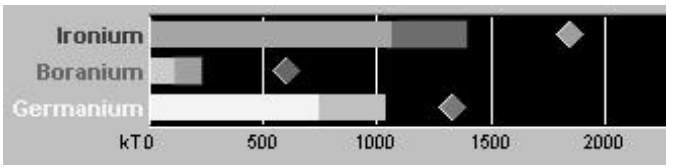
MINERALS

All planets contain three important raw minerals: ironium, boranium and germanium. These provide the building blocks for almost everything your race produces. Minerals exist both on and under the planet's surface. Minerals found on the surface can be used immediately in production. Those under the surface must be mined to become available for use. Minerals can be transported to other planets where they're needed using freighters and mass drivers. Minerals can also be created through a production-based recycling effort called Mineral Alchemy. You also receive minerals when you initially colonize a world, automatically scrap a colonizing vessel, and when you scrap a ship at a planet you own.

If your race possesses the Mineral Alchemy trait, you can transform existing resources into minerals four times faster than races without this advantage.

The Selection Summary pane shows the surface mineral supply, the concentration of minerals under the surface, and the mining rate for the selected planet. Each mineral is represented by a colored bar. The bright colored bar shows how much of the mineral is on the surface and ready to use; the dark colored bar shows the amount that will be mined next year. The diamond shows the current mineral concentration, measured from 0 to 200 units. The width of the graph is 100, with a plus sign (+) appearing if the concentration exceeds the current scale. If you are scanning the planet but donít own it, you see only the mineral concentration. You see all mineral information as soon as you colonize the planet.

You can also obtain mineral information from the Minerals on Hand tile when you are commanding the planet.



Left-click on a bar to display the exact quantity, concentration, and mining rate for that mineral.

The mineral concentration on your home, or starting world never drops below 30. This world always retains this advantage, regardless of who occupies it during the course of play.

Learn more about
Mining, p 13-1
Auto-build, p 7-9
Flinging Mass Packets, p 6-12
Colonizing, p 12-1
Scrapping Fleets, p 10-10

MINES

Mines extract minerals from the planet. As you mine, you decrease the concentration of minerals under the surface, adding them to the supply on the surface and making them available for immediate use. You never run out of minerals on a planet, you just decrease the concentration until it reaches 1%, when it becomes difficult to extract more than tiny amounts from each mine each year.

You can build mines on any planet you inhabit or use robot miners on uninhabited planets.

The Minerals on Hand tile shows you the current number of mines and factories operating on a planet, and the maximum number of mines and factories the current population can operate.

FACTORIES

Factories, along with people, create resources used to build items such as ships, mines, defenses and more factories. Resources are also required to research new technologies. In general, any task that requires mental or physical effort requires resources.

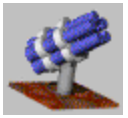
You do not need factories in order to build things. Factories only increase the total number of resources you receive each year. For a typical race, you can double the number of resources generated per year by building factories. Think of factories as virtual colonists. Once built they produce work and consume nothing. Nothing is wasted—factory resources not used for production are directed into research efforts.

Alternate Reality Races and Factories
Alternate Reality races cannot build factories or any other planetary installation.

Factories cost 4 kT of germanium to build or, if you selected Factories Cost 1 kT Less when defining your race, factories cost 3 kT of germanium. No minerals other than germanium are used.

To learn how many resources a factory will produce for your race, and the cost of building a factory, select the **View** (**Race**) menu item, and turn to page 5 of the View Race dialog.

BUILDING PLANETARY DEFENSES



Defenses partially protect a planet from bombs, incoming mass packets and invasion. Unless you are playing an Alternate Reality race, you should always build defenses, especially in a single player game. AIs love to bomb planets. While you can't build a perfect planetary defense system you can significantly reduce the number of bombs, mass packets and invading colonists that make it to the surface.

Whether you build defenses in a multi-player game depends on how much you can trust other players to leave your worlds in peace (there's room enough for all in the Stars! universe—isn't there?)

While you can build as many defenses as you wish, you can only operate as many as your population has resources to handle. When commanding a planet, look at the Status tile to see both the current and maximum number of defenses, the type of defenses deployed and the percentage of bombs and invading colonists that can be stopped.

Status	
Population	1,039,800
Resources/Year	2668 of 3335
Scanner Type	Scoper 280
Scanner Range	560 l.y.
Defenses	100 of 100
Defense Type	Laser Battery
Def Coverage	91.18%

As a game progresses, you can increase the number of defenses and upgrade the technology (and the efficiency) of existing defenses:

Adding defenses increases the number of existing defenses of the type you're currently employing. For example, if you're using Missile Batteries, then adding Defenses to the production queue causes more Missile Batteries to be built. This increases the percentage of coverage.

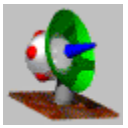
Upgrading defenses happens automatically. Whenever you learn new technology that applies to defense, all defenses on all your planets upgrade automatically and at no cost.

Alternate Reality Races and Planetary Defenses Alternate Reality races cannot build planetary defenses or any other planetary installation.

To learn about defense technology, open the Technology Browser (press F2), choose Planetary from the drop-down menu, then click **Next** until the Browser displays defense technology. Each type of defense is described with a graph summarizing its effectiveness.

For more information on how planetary defenses help protect you from mineral packet attacks read chapter 25, The Guts of Mass Drivers.

PLANET-BASED SCANNERS



A scanner is the inhabited planet's radar, giving you information about all objects within scanner range. There are several types of planet-based scanners, with different ranges for detecting fleets, mass packets, mine fields and wormholes, and different ranges for detecting the environment and mineral content of other planets. You start the game with a basic scanner on your home planet.

The cost of building a scanner is fixed. Once you build a scanner, it will automatically be upgraded when your research allows you to build a better scanner.

A planet's scanner type and range appear in the Status tile.

Status	
Population	1,039,800
Resources/Year	2668 of 3335
Scanner Type	Scoper 280
Scanner Range	560 l.y.
Defenses	100 of 100
Defense Type	Laser Battery
Def Coverage	91.18%

Planet-based scanners are useful for detecting opponent's fleets that pass near or enter your empire. Only fleets that are cloaked have a chance of escaping detection. You can reduce the chances of fleets sneaking past if you place scanners on all your planets. When you select an enemy fleet, the scanner will also show the estimated path of the fleet.

To view the area covered by your scanners, select the Scanner pane's Radar overlay. Your basic radar coverage appears in red. Planet-penetrating radar coverage appears in yellow. You can also adjust the displayed effective coverage to different percentages, showing your vulnerability to cloaked fleets. Changing the displayed coverage does not actually decrease the actual effectiveness of your scanners. It merely shows you how effective your scanners would be versus other player's cloaks. For example, if you have reason to believe that your enemy is using 80% cloaked ships it would be informative to set your displayed scanner coverage to 20%. The areas not in red are vulnerable. Knowing that you have a hole in your coverage is the first step in filling it.

Alternate Reality Races and Planetary Scanners
Alternate Reality races cannot build planetary installations. Turn to chapter 22 to read more about how these orbit-loving nuts perform scanning.

Learn more about
Scanning and Cloaking, p 17-1
The Guts of Cloaking, p 24-1

STARBASES

A starbase can be an orbiting shipyard, fuel depot, defensive station, and a platform for a stargate and mass drivers. Before a planet can build ships, it must have a starbase with a space dock. Starbases stand in the way of attacks against the planet—your fleet must destroy the starbase before bombing can commence. Starbases with weapons always strike back and can initiate attacks against enemies in orbit.

A starbase can also carry cloaks, and thus can partially cloak itself from remote scans. Cloaking a starbase does not cloak the planet.

You can find details on a specific starbase hull design in the Technology Browser. Just press F2, click on the dropdown list and choose the Starbase Hulls category.

Your starbase is your primary defense against bombing and invasion by enemy fleets. Your planet can not be bombed or invaded as long as your starbase still exists. Defend it well.

In the Scanner pane, a starbase appears as a yellow dot in orbit if a spacedock is present or blue dot, if no space dock is present. The Starbase tile describes a starbase belonging to the planet you're commanding.

Alternate Reality Races and Starbases
Alternate Reality races live in orbit on starbases. This means that the starbase also determines a planet's maximum population, and gives Alternate Reality races greater incentive to protect their orbiting homes. Read more about these unusual Stars! denizens in chapter 22.

Building a Starbase

Build a starbase by adding it to the production queue. Like a ship, cost depends on the type and number of items attached to the hull. You'll find that a starbase hull is very expensive, so you'll need to plan how to afford it. You'll also find that hull parts attached to a starbase are 50% cheaper than the same parts attached to ship hulls, helping balance out the cost and making the replacement or addition of components easier to handle.

A planet can have only one starbase at a time. An existing starbase can be upgraded or replaced, with credit given for the recycled materials.

You'll have access to additional starbase hulls if you have the Improved Starbases trait.

Starbase Design

There are five starbase hulls, with slots for weapons, armor and other items:

Orbital Fort — No ship building or refueling capacity. These don't count as starbases in the score.

Space Dock — Ship building capacity: 200kT or smaller ships. This hull requires the Improved Starbases trait.

Space Station — Unlimited ship building capacity.

Ultra Station — Unlimited ship building capacity, with more slots for weapons, shields and other components. This hull requires the Improved Starbases trait.

Death Star – Top of the line orbital habitat for Alternate Reality races.

Upgrading a Starbase

You can upgrade a starbase by changing the hull or by adding or changing items in the hull slots. You receive full credit for the existing installation, paying only the difference between the old and new hulls. The upgrade appears in the production inventory, ready for you to add to the production queue when you wish.

Here's how the cost is determined:

If the hull changes:

- You receive a 50% credit for minerals and resources used in the original starbase.

If the hull does not change:

- Slots where the components don't change are free.
- Slots where only the count of the component increases cost only the component price multiplied by the number of additional items.
- Slots where the component type changes to a similar component are discounted in cost; the discount based on the closeness of the part types.
- Slots where the component type changes dramatically cost the full price of the new component. You will receive some minerals back if the old components are recycled.

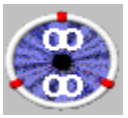
Sorting Starbases for Easy Upgrades

1. Press F3 to open the Planet Summary Report, then maximize the report window.
2. Click on the top of the Starbase column and select the Starbase sort order.
3. Find the first planet with a starbase design you want to upgrade.
4. Click on the Production column for that planet. The Production dialog opens, showing the queue for that planet.
5. In the Production dialog, double click on the new design listed in the production inventory (left-hand list).
6. Click on **Next**. Notice that the **Next** and **Prev** buttons follow the sort order of the report.

Learn about
Ship and Starbase Design, p 9-1
Adding Items to the Production Queue, p 7-2

7. Keep adding upgrades for each planet until you've upgraded all your starbases.
8. Close the Production dialog and the report.

STARGATES

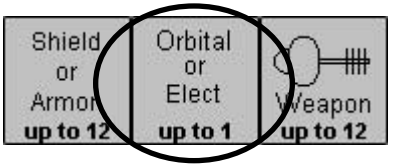


Stargates are starbase installations that provide cargo-less ships with fuel-free, single year transport between your planets. This is the optimum way to move scouts and warships when you're in a hurry, or any other ship that isn't carrying anything but Fuel.

In the Scanner pane, the stargate appears as a green dot orbiting the planet.

Building a Stargate

A stargate occupies an Orbital slot in a starbase hull. You can add a stargate by upgrading an existing starbase hull or building a new hull.



To upgrade a hull and add the gate:

1. Choose the **Commands** (**Ship Design**) menu item, opening the Ship and Starbase Designer.
2. Under Design, click on **Starbase**.
3. Select the design you wish to upgrade from the dropdown.
4. Click on **Copy Selected Design**. The dialog changes, offering the design and a component list.
5. Select a hull picture (using the arrows under the picture) and type in a new name, or use the defaults shown in the dialog.
6. Drag the stargate from the component list to an Orbital slot in the design. Subtract and add any other components as you wish.
7. Click on **OK**. Then click on **Done** to close the dialog.
8. Click on **Change** in the Production tile, and add the new starbase to the planet's Production queue.

Interstellar Travelers and Stargates

For Interstellar Traveler races, starbases with stargates scan any planet in range that also has a stargate. Interstellar Traveler stargates are also able to move ships full of cargo.

Hyper Expansion

Races with the Hyper Expansion trait cannot build stargates.

All stargates require research into Construction and Propulsion. The Orbital section of the Technology Browser describes capabilities for each stargate.

Learn about

Ship and Starbase Design, p 9-1

Adding Items to the Production Queue, p 7-2

Navigating Using Stargates, p 11-3

MASS DRIVER BASICS

Mass drivers provide a fuel-free method of transporting mineral cargo packets between planets, and, secondarily, can act as an effective long range weapon. Mineral packets are bundles of ironium, germanium and boranium. Mass drivers fling mineral packets at high rates of acceleration. This prevents you from flinging Fuel, which would explode, or colonists, who would, well, also explode.

In the Scanner pane, a mass driver appears as a purple dot orbiting the planet.

Building a Mass Driver

A mass driver occupies the Orbital slot in a starbase hull. You'll have to research Energy—the requirement for each type of driver is listed in the Orbital section of the Technology Browser.

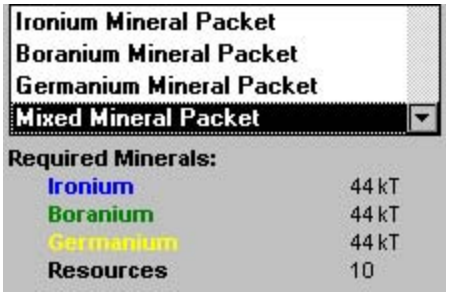
Once you complete your research, upgrade your starbase hull design to hold the driver (or design a new starbase hull that includes the driver). To upgrade a hull and add the driver:

1. Choose the **Commands** (**Ship Design...**) menu item, opening the Ship and Starbase Designer.
2. Under Design, click on **Starbase**.
3. Select the design you wish to upgrade from the dropdown.
4. Click on **Copy Selected Design**. The dialog changes, offering the design and a component list.
5. Select a hull picture and type in a new name, or use the defaults shown in the dialog.
6. Drag the driver from the component list to an Orbital slot in the design. Subtract and add any other components as you wish.
7. Click on **OK**. Then click on **Done** to close the dialog.
8. Click on **Change** in the Production tile, and add the new starbase to the planet's Production queue.

Learn about
Adding Items to the Queue, p 12-2

Building and Flinging Packets

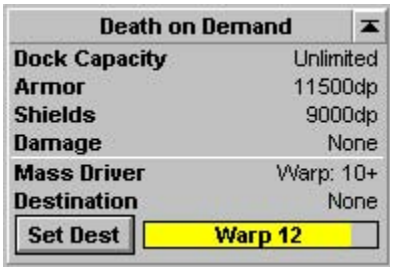
Mineral packets are built and flung as a function of the Production queue. The Production inventory will list a packet for each mineral and a mixed packet that contains all three minerals. When you click on a packet type in the inventory the numbers below the inventory show how many kT of each mineral the packet contains.



The Scanner pane shows mass packets within your scanner ranges, regardless of who the packets belong to (unless you are a Packet Physics race).

Once a packet is built, the driver automatically flings them at the destination you've set. If you don't set a destination, the packet disintegrates.

- Target a mass driver by clicking on **Set Dest** in the Starbase tile, then clicking on the destination in the Scanner.



Interstellar Traveler Races

Interstellar Traveler mass drivers are only half as effective at catching minerals as their rating, are less efficient at flinging minerals, and all mineral packets flung decay, regardless of speed.

For the packet to arrive safely, the target must also have a driver of equal or greater capacity. If the planet has a lesser mass driver, or no driver at all, the packet destroys colonists and installations on the planet surface.

You can also target a mass driver by SHIFT-clicking on the destination.

The gauge in the Starbase tile allows you to control the speed at which packets are flung. You can purposefully fling packets at a slower speed if your receiving planet isn't equipped with an accelerator that's high tech enough to catch the packet at full speed.

You may fling packets at speeds up to three Warp levels above the rated speed. Packets flung above the rated speed become unstable, decaying at 10% per year for one warp level above the rated speed, 20% for two warp levels, and 50% for three warp levels. Packets decay in the year they are launched and in the year they arrive at a planet proportional to the distance they travel in those years.

During a packet's first year out, it travels only half the normal distance, then the normal distance in any following years of travel. Since production happens all year long, the packets could be launched at any point. Stars! simplifies this by averaging it out to a half-year's travel.

Planet-penetrating Scanners

These scanners can detect fleets in orbit around a planet. They also can tell you planetary stats from a distance.

Packets as Scanners

For Packet Physics races the mineral packets have the added feature of behaving like a planet-penetrating scanner. The radius of the scan is equal to the square of the packet's warp speed.

Packets Perform Terraforming

Packet Physics mineral packets only do 1/3 the normal damage when hitting a planet, but have a 50% chance per 100kT of minerals to terraform the planet's environment toward the player's ideal value.

Packet Physics

For Packet Physics races, mineral packet decay rates are half the normal level.

You Can't Attack Packets

You can't attack mineral packets. You can only intercept them and transfer their contents to your fleet, as described below in Stealing Mineral Packets.

Stealing Mineral Packets

If you can intercept a mineral packet in flight you can steal from it. When a packet is at the same location as your selected fleet, it appears in the Other Fleets Here tile. Use the **Cargo** button and the Cargo Transfer dialog that appears to transfer minerals from the packet to your fleet.

Building Two Mass Drivers on a Starbase

You can build up to two identical mass drivers on the same starbase (assuming you haven't used an Orbital slot with a stargate already). This has two advantages: 1) you can catch incoming packets at one warp speed greater

than the driver's nominal rating; and 2) packets flung at a speed higher than the recommended maximum from dual drive starbases decay as if they were flung at one warp speed lower.

Packets as Weapons

Packets flung at planets with a lesser mass driver or no mass driver damage the planet and kill inhabitants. A warp 13 mineral packet is about as close as Stars! comes to a doomsday weapon.

Read more about
Mineral Packet Bombardment, p 15-5
The Guts of Mass Drivers, p 25-1

TERRAFORMING

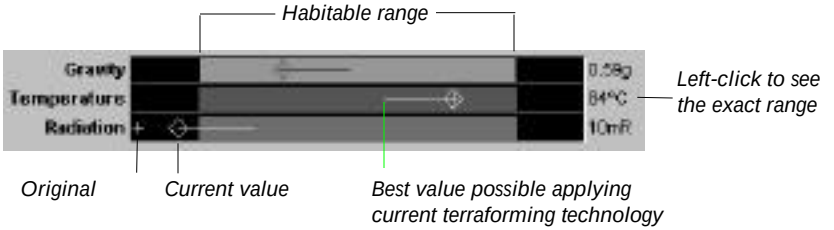
Terraforming is the ability to change a planet's environment to make it more habitable for your race. If you are immune to environmental conditions, you don't need to terraform.

You won't know if you need to terraform or can terraform a planet unless you can scan it, gathering information about the planet's environment. To see all terraformable planets you've found use the Scanner pane's Planet Value view. You possess the technology to terraform Yellow planets, making them habitable. Most green planets can also be terraformed to improve them. The larger the yellow dot, the better the planet will be once you terraform it.

To see your race's habitability range, choose the **View** (**Race**) menu item, then turn to page 4 of the View Race dialog.

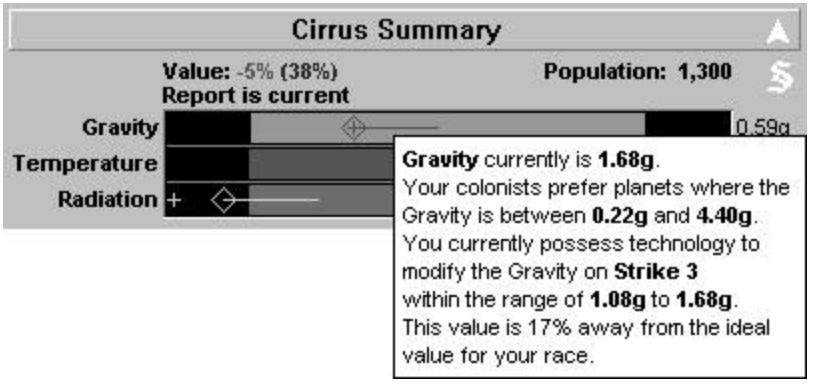
Click on a planet in the Scanner pane, then look in the Selection Summary pane. The habitability value shows the current value of the planet followed in parentheses by the value the planet would be after terraforming (given the limits of your current technology).

The environment graph shows how much you can modify the planet's environment, given your level of terraforming technology. The following graph shows that the player possesses Gravity and Radiation terraforming technology, and that Radiation must be terraformed to make the planet habitable. Gravity is currently well within this race's habitable range, and may be terraformed to the optimum level.



You don't have to worry about the order in which the different factors are terraformed. The terraforming task that appears in the production dialog always works on the factor that is the furthest out of range. If you can improve Gravity by 3%, Temperature by 5% and Radiation by 2% the Production dialog will let you add 10% Terraforming to the queue. Each 1% Terraforming task executed will modify one of the environmental factors by 1%, which will improve the overall habitability value by at least 1% and probably more.

Find out which factor should be terraformed to maximize the planet's habitability value by clicking in the environment graph of the Summary pane. A pop-up will tell you the potential increase in habitability value if you modify that factor to the limits of your current level of technology.



There are two basic ways to terraform a planet. The first and easiest is to add auto-build terraforming tasks to the production queue. Min and Max Terraforming are auto-build tasks which remain in the queue and operate only when both necessary and possible. These can be added manually or using a production template. The second method is to manually add the Terraform Environment task to the production queue.

Terraforming tasks can use only the terraforming technology you possess. So, if you have only Radiation and Temperature Terraforming, you can modify only radiation and temperature levels, but not gravity. The terraforming will automatically act first on the environmental attribute which when modified will most improve the planet's habitability.

Colonists Die if Minimum Terraforming Lasts More than One Year

If it takes longer than one year after colonizing to bring the planet to a habitability value of 0% or better, your colonists will start to die. If you can bring it within range the first year, they'll be fine. This is the best reason for creating a production template that contains auto-build terraforming tasks. An Auto-build task already in place happens the same year as colonization. Terraforming added manually must wait until the following year.

Claim Adjusters

Claim Adjusters automatically terraform a planet as soon as they land.

Terraforming with Auto-build Tasks

1. Bring the planet you wish to terraform under command.
2. Click on **Change** in the Production tile. The Production dialog opens.
3. In the production inventory, click on either the Min Terraform or Max Terraform auto-build tasks. Then click on **Add** to raise the limit to which the task will terraform.

Minimal (Min) terraforming changes only those environmental factors that have a negative value and that you have the technology to change, up to the percentage you specify in the task. Terraforming will continue only until the habitability value reaches zero. To go beyond the point of minimal terraforming, you must manually add Terraform Environment or the Max Terraforming auto-build task. Minimal Terraforming will activate and terraform only when there are resources available and not doing so would cause people to die on the planet (from negative environment values or overcrowding).

Max Terraforming changes any environmental attributes that you have the technology to change, up to the percentage you specify in the task.

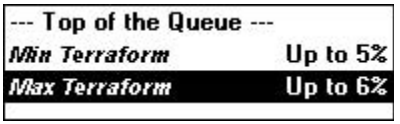
As each terraforming task completes, an environmental factor is improved by 1%.

Terraforming as a Default Action

You implement default terraforming by defining a default production template that includes auto-build terraforming tasks. This is done through the production dialog.

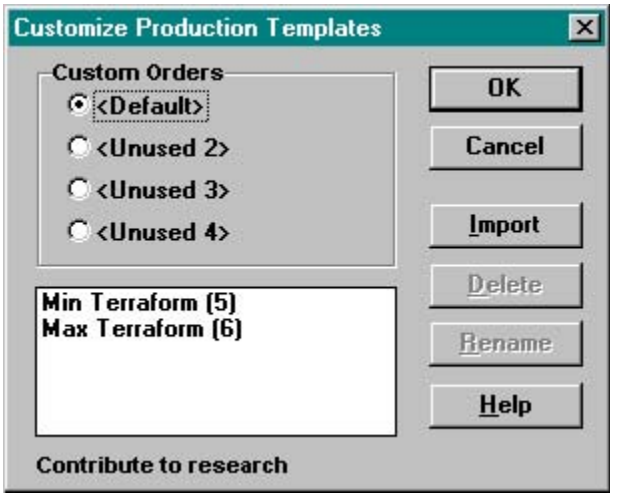
Auto-build items do not need to be listed consecutively in the production queue nor do they need to appear at the top of the queue to be produced.

1. Make sure the auto-build terraforming items in the production queue are arranged in the sequence you want them to appear in the template.



2. Make sure the Contribute Only Leftover Resources to Research checkbox is set the way you want it to be reflected in the template. An unchecked box specifies Contribute Resources to Research before spending resources for production. A checked box indicates Don't Contribute to Research before spending resources on production.

3. Right-click on the blue diamond next to Apply or Define... and select <Customize> from the pop-up menu.
4. Select <Default> in the Customize Production Template dialog.



5. Click on **Import** to copy in the auto-build items from the production queue, then **OK** both the Customize… and Production dialogs.

That's it. The default production orders will take affect on every planet taken over or newly colonized. It does not affect any planets where colonists have already landed.

Adding Terraforming to the Queue Manually

1. Double-click on the planet you wish to terraform, placing it in the Command pane.
2. Click on **Change** in the Production tile.
3. In the production inventory, click on the Terraform Environment task. Then click on **Add** to add the desired number of this task to perform.

Each Terraform Environment task you add to the production queue improves an environment factor by 1%. The number of tasks you may add to the queue is limited by the current level of your terraforming technology. When you have successfully completed all the tasks you can add to the queue, the Terraform Environment task disappears from the production inventory. It will reappear once you achieve a higher level of technology that allows you to terraform further.

Types of Terraforming Technology

Each of a planet's three environmental factors has a matching type of terraforming technology: Temperature Terraforming, Gravity Terraforming, and Radiation Terraforming. Each requires a different combination of research:

- Temperature terraforming requires research into Biotechnology and Energy.
- Gravity terraforming requires research into Biotechnology and Propulsion.
- Radiation terraforming requires research into Biotechnology and Weapons.

The Total Terraforming trait requires that you research only Biotechnology to learn terraforming technology

Each technology allows you to improve a specific factor a minimum of 3% from its initial value and a maximum (without Total Terraforming) of 15%.

The percentage of improvement does not always indicate how much the value of the planet will increase. Often only one or two environmental factors will be negative, while the remaining factors look pretty attractive. In this case improving the negative factors can improve the planet's overall value to a much higher percentage than that indicated by the technology.

As you upgrade your terraforming technology, you'll see the amount you can improve the planet increase. You may also see that some planets that were previously not terraformable (red in Planet Value view) become terraformable (yellow in Planet Value view).

To learn more about the individual types of terraforming technology and their research requirements, open the Technology Browser (Press F2) and select Terraforming from the dropdown list.

Total Terraforming

Total Terraforming is a race trait, not a type of technology. Races with Total Terraforming begin the game with the ability to improve temperature, gravity and radiation levels up to 3%. Terraforming requires 30% less resources and you can research terraforming technologies that improve factors up to 30% instead

of just 15% normally. Terraforming requires research into only Biotechnology, instead of Biotechnology and three different additional fields.

To determine if your race has Total Terraforming, choose the **View** (**Race**) menu item then turn to page 3 of the View Race dialog.

Claim Adjusters and Automatic Terraforming of Colonies

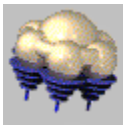
Races based on the Claim Adjuster trait automatically terraform new colonies upon landing. This terraforming action is both instantaneous and temporary—as soon as the planet is deserted or taken over, the environmental conditions revert to their original values.

As the race learns more about terraforming all its planets are automatically and instantaneously terraformed to the limits of the technology.

Claim Adjusters and Terraforming Other Players' Planets from Orbit

Races based on the Claim Adjuster trait can terraform other player's planets from orbit. This creates unique opportunities for diplomacy or war. If the owner is your Friend, you automatically perform positive terraforming (adjusting planetary conditions toward the inhabitants' optimal conditions). If the owner is your Enemy, you perform negative terraforming.

Terraforming from orbit requires a fleet outfitted with Orbital Adjusters. These are described in the Mining Robots section of the Technology Browser. Every race with the Claim Adjuster trait starts out with one ship outfitted with Orbital Adjusters.


Orbital Adjuster

Terraforming from orbit is a great vehicle for diplomacy: in return for other technology, an alliance, or just a plain thank you, you can help your friends make their planets a better place to live. Only offer this assistance to friends who have lesser terraforming capabilities than yourself. Terraforming is not additive—you can't combine your orbital terraforming abilities with those of the inhabitants to super terraform the planet. The planet will only be terraformed to the limits of whoever possesses the superior technology. For example, if the inhabitants have 3% terraforming and you possess 5% terraforming, the planet can be improved up to 5% from its original conditions (not exceeding optimal conditions for the inhabitants).

Specify Friends, Enemies and Neutrals using the Player Relations dialog (press F7).

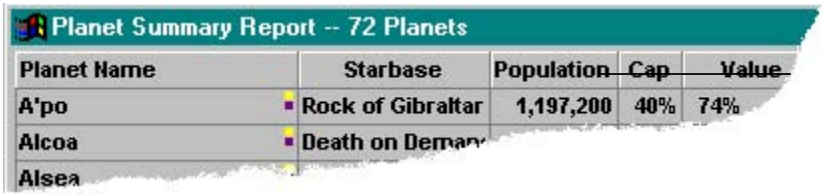
Terraforming from orbit can also be used as a weapon: just orbit the planet and start to terraform it under your opponent's feet. This allows you to prepare more favorable conditions for a planetary invasion. You must destroy any existing starbase before you can launch this type of attack. Depending on your opponent's level of terraforming technology, using terraforming as an

attack could turn into a shoving match if they begin terraforming operations of their own.

Terraforming from orbit happens automatically as soon as your fleet arrives. Just set the destination planet as the fleet waypoint. No waypoint task is necessary.

Retro Bomb
Claim Adjusters also can gain the Retro bomb, a type of terraforming weapon used to return the planet to its original conditions.

PLANET REPORTS



The Planet Report displays the same information displayed by the Command pane, but for all your planets. You can use the report to change the order in which planets appear in the Planet tile and the Production dialog according to any category in the report.

A planet report contains the following information:

Planet name – the color of the dot, if present, indicates the type of starbase, and whether a mass driver and stargate are present. In the report, the name of the planet currently in the Command pane is highlighted.

Yellow dot — starbase has a space dock (can build ships)

Blue dot — starbase without a space dock

Purple dot — mass driver

green dot — stargate

Starbase – Click to display the starbase design.

Population – Current population. Click to display details.

Cap – Percentage of planetary population capacity.

Value – Shows the maximum population percentage relative to maximum growth under optimal conditions (100%). A second number is the value after terraforming using your current technology. Click to display details.

Production – the item at the top that planet's production queue. Click to access the queue.

Mine – Number of mines in existence. Click for details.

Fact – Number of factories in existence. Click for details.

Defense – Type of planetary defenses.

Minerals – Number in kT of each type of Mineral on the planet surface. Click on each number for details about that mineral.

Mining Rate – Mining rate of each mineral in kT/year. Click for details.

Min Conc – Mineral concentration for each type of mineral. Click for details.

Resources – Resources available for use by the planet, followed by total resources generated by the planet. Click for details, including the number of resources dedicated to research.

Driver Dest – Destination of mineral packets flung from that mass driver.

Routing Dest – Destination planet for ships routed from production.

Learn more about
Changing the Order of Planets in the Production dialog, p 7-10
Sorting Starbases for Easy Upgrades, p 6-9

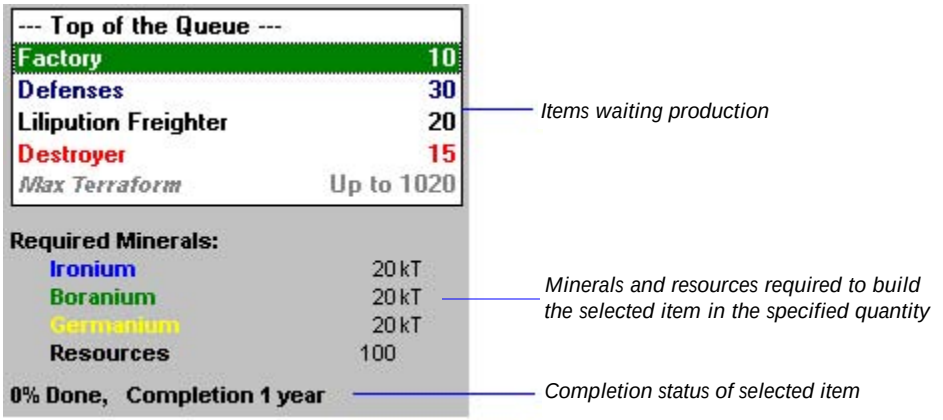
7 PRODUCTION

In Stars! you produce ships, mines, factories and defenses, and assign tasks, such as terraforming. The Production dialog lists all the things you can build or tasks you can perform on a specific planet, commands that allow you to add these items to the queue, information showing how much each item will cost and when or if it will be completed given your available resources.

Resources are units of work created by people and factories. They represent the effort required to perform a task or produce an item.

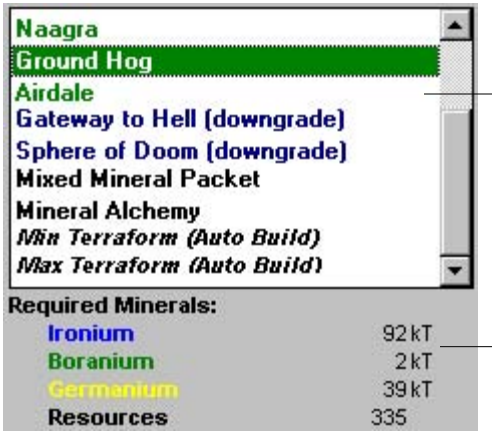
HOW PRODUCTION WORKS

You have one production queue per planet. The queue is essentially a work list. Items are produced in the order shown in the queue, from top to bottom.



You can add, delete or move items at any time, anywhere in the queue. The percentage complete is shown for the selected item. If you add an item to the top of the queue in front of something that is partially complete, your people will not work to complete the original item until the new item you placed in the queue is complete or has been deleted. Production of items that require minerals is halted if the planet runs out of minerals. Auto-build items that require only resources will continue to be produced.

The production inventory lists all the things you know how to build or tasks you can currently perform on that planet.



Inventory of everything the planet can build. Like items are displayed in the same color.

Amount of each mineral and number of resources required to produce one of whatever is selected in the inventory.

Unique Items

When a planet can only use one of an item, such as a planet-based scanner or starbase, the item appears only once in the inventory. When this kind of item is added to the queue, it disappears from the inventory.

Upgrades of Existing Items

Upgrades of existing items, such as stargates and starbase hulls, will replace any older versions in the inventory list. When you upgrade a item, it is labeled in the inventory as an upgrade. Since upgrades enhance rather than replace an item, they only require enough minerals to create the enhancements.

ADDING AN ITEM TO THE PRODUCTION QUEUE

You can add an item at any time to any spot in the production queue. The procedure is slightly different depending on whether you want to do the following:

Add an Item to the Top of the Queue

1. Click on **— Top of the Queue —**.
2. Click on an item in the inventory, then click on **Add** or double-click on the item in the inventory list.

Add an Item to the Middle of the Queue

1. Click on the item in the queue under which you want the new item to appear.
2. Click on an item in the inventory list, then click the **Add** button, or double click on the item in the inventory list.

Add an Item to the Bottom of the Queue

- Click on the last item in the queue, then on an item in the inventory list. Then click the **Add** button, or double click on the item in the inventory list.

Move an Item in the Queue

1. Click on the item in the queue that you want to move.
2. Click on the **Item Up** or **Item Down** buttons.

Adding Large orders

SHIFT-**Add** adds up to 10. CTRL-**Add** adds up to 100. Pressing CTRL+SHIFT when clicking on the **Add** button will add as many of that item as possible. This also works if you press CTRL+SHIFT and double click on the item in the inventory list. These keys behave the same when used with the **Remove** button.

REMOVING AN ITEM FROM THE PRODUCTION QUEUE

Do one of the following:

- Select an item in the queue, then click the **Remove** button or double-click on the item in the queue.
- Keep clicking the **Remove** button or double-clicking on the item name to remove additional units.

Speedy Removal

SHIFT-**Remove** removes up to 10. CTRL-**Remove** removes up to 100. Pressing CTRL+SHIFT when clicking on the **Remove** button will remove as many of that item as possible. This also works if you press CTRL+SHIFT and double click on the item in the queue. These keys behave the same when used with the **Add** button.

PRODUCTION TEMPLATES

A production template is a sequence of auto-build items imported from a production queue and saved for later use. Use production templates to automate auto-build production strategies you plan to use more than once. The default production template is automatically applied on any planet taken over or newly colonized by your people. The other three templates can be manually applied to any planet's production queue. Templates are saved for the duration of the game but may be edited at any time.

You apply templates by simply selecting the template name instead of manually adding the items to the production queue. When you apply a template, all auto-build items currently in the queue are replaced with the list of items in the template.

Production Template Strategy

To help illustrate how production templates are useful, here's an example of a useful default template for new colonies:

Minimum Terraform Up to 10%
Factories (Auto Build) Up to 10
Mines (Auto Build) Up to 10
Defenses (Auto Build) Up to 2
Factories (Auto Build) Up to 25
Mines (Auto Build) Up to 25
Maximum Terraform Up to 10%
Defenses (Auto Build) Up to 5

Minimum Terraform Up to 10%
The planet will work on terraforming first if it is possible and people might die otherwise. This handles fledgling negative worlds, overcrowding and disasters.

Factories (AB) Up to 10 / Mines (AB) Up to 10

You want constant progress on improving the planet's productivity. This is what fledgling colonies spend most of their time doing.

Defenses (AB) Up to 2
If the planet is doing well enough to complete all those mines and factories you can afford to work on defenses a bit to keep from falling way behind. Fledgling colonies don't make it this far.

Factories (AB) Up to 25 / Mines (AB) Up to 25
At this point we want to ensure the planet has the maximum number of mines and factories. Only mature planets will reach this point.

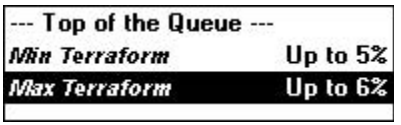
Maximum Terraform Up to 10%
Push a mature planet to perfection. The mines and factories are probably maximized for the current population so, if possible, increase the maximum population and growth rate.

Defenses (AB) Up to 5
Add defenses if the colony has the maximum number of mines and factories possible for the current population.

Contribute only Leftover Resources
While the colony is fledgling it is a good idea to have "Contribute only leftover resources to research" checked. When the colony reaches the point were the defenses are being auto-built you can deselect the "Contribute only …" option.

Creating a Template

1. Make sure the auto-build items in the queue are arranged in the same order in which they should appear in the template.



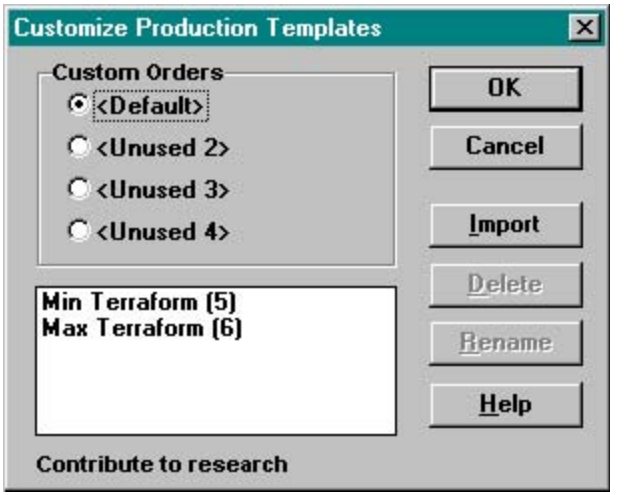
Auto-build items do not need to be consecutively listed nor do they need to appear at the top of the list to work.

2. Make sure the Contribute only Leftover Resources to Research checkbox is set the way you want it to be reflected in the template.

When Contribute Only Leftover... is checked the custom template will include the label Don't Contribute to Research (until production is complete). Otherwise the template reads Contribute to Research (before production begins).

3. Right-click on the blue diamond and select <Customize>.

4. Select default or one of the three other template choices.



5. Click on **Import**.

6. Type in a name for the template and **OK** the name dialog.

7. **OK** the Template dialog. The template is now ready to apply. If you created a default template, it will be applied automatically whenever you establish a new colony.

Manually Applying a Template

Right-click on the blue diamond and select a template to apply to the current production queue. The auto-build items in the template are applied underneath the last item currently in the queue.

Editing a Template

1. Repeat steps 1 & 2 above.
2. Right-click on the blue diamond and select <customize>.
3. Select the template to be edited.
4. Click on Import.
5. Type in a new name for the template if you wish and **OK** the name dialog.
6. Click on **OK**. The edited template is now ready to apply.

Renaming or Deleting a Template

1. In the Production dialog, right-click on the blue diamond and select <Customize>.
2. Select one of the three non-default templates. Click on **Delete** to erase the template contents and it's name or click on Rename and type in a new name.

The default template cannot be renamed. To clear the contents of the existing default template you must import an empty production queue.

CLEARING THE PRODUCTION QUEUE

- To remove all items from the production queue click on the **Clear** button in the Production dialog or the Production tile.

If the item is removed from the queue before completion, resources and minerals already spent on the item are lost.

UNBLOCKING A PRODUCTION QUEUE

If your planet's mineral concentration runs so low that the time to completion exceeds 100 years, the item name turns red. This means it will practically never be completed unless you do something about it. You have two choices: transport minerals from other planets or use mineral alchemy (or use a combination of the two).

Transporting Minerals

To transport minerals, set up freighter waypoints to transport minerals from your remote miners or mineral-rich planets to your planet with the blocked production queue. If you have a mass driver on the needy planet and the mineral-rich planet, you can also fling mineral packets between planets without using ships.

Mineral Alchemy

Mineral alchemy transmutes resources into minerals (sort of your own Philosopher's Stone). If you can't complete an item in the queue because you've run low on one or more minerals, place mineral alchemy in the queue ahead of the item you're trying to build. Each unit of mineral alchemy will turn a mere 100 of your resources (25 if you have the Mineral Alchemy trait) into 1 kT of each of the three minerals. This is a good strategy for unblocking queues on a planet where you have a large population and can quickly replace the resources used by alchemy.

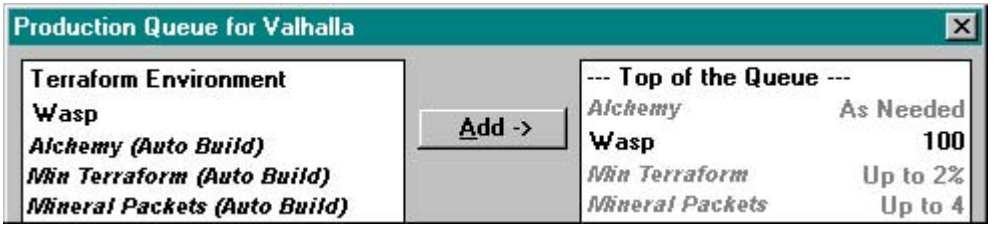
Add as many mineral alchemy units as you need to finish the item stuck in the queue. Like other items in a queue, the color of each Mineral Alchemy task will tell you how long it will take for the process to complete. If you have a large number of resources dedicated to production, you can create a large amount of minerals fairly quickly.

Mineral alchemy is one of the items available for auto-building. Consider adding it to your default or a custom production template, if it isn't already there. If auto-alchemy is placed in front of an item, it will be used only if you have a mineral shortage. If it is the only item in the queue, it will convert resources into minerals until you remove it or place another item immediately following.

ADDING AUTO-BUILD ITEMS TO THE QUEUE

Auto-build items are always in italic, but appear differently in the production inventory and queue.

When they're in the inventory, they are labeled as Auto-build. When you add them to the queue, they are labeled <Item> up to <number>; for example, Factories Up to 50. The latter number indicates that the queue will *attempt* to produce the stated number of that item every year.



Auto-build Mineral Alchemy is the exception, displaying as *Mineral Alchemy as needed*. If you insert it in front of an item in the queue you want to perform as much Alchemy as possible to maximize the production rate for that item. If you already have enough minerals, Mineral Alchemy isn't needed and doesn't happen. It's a great insurance policy that always does the right thing. If Alchemy is the last item in the queue, it means to spend all remaining resources on Mineral Alchemy.

Auto-build items can be used to create a default queue for newly colonized worlds, or for items you wish to produce on any world whenever extra resources are available for production, or when the queue is empty of anything but auto build items. For example, early in the game, it's useful to continuously build mines and factories. It's always useful to auto-terraform when conditions are less than perfect and you have the means.

Like any production item, auto build items can be inserted anywhere in the queue. An auto build item stays in the queue until you remove it. This means your production queue will annually attempt to build these items when possible. You can always place other items ahead of auto-build items, or rearrange the items in the queue. Auto build items that cannot be built are skipped.

There are, however, differences between the behavior of auto-build items and others in the queue:

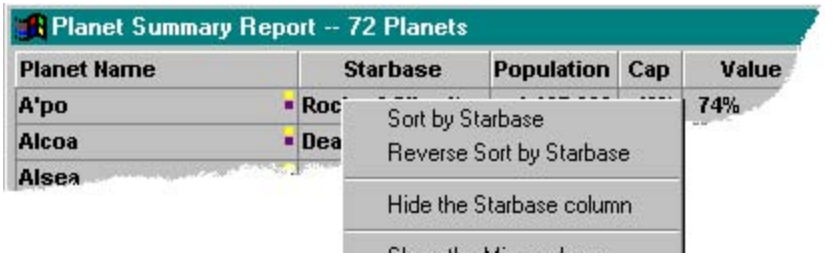
- Auto-build items do not block the queue. If they cannot be performed, they are skipped over.
- Auto-build items are never automatically removed from the queue. They remain there until manually removed and activate only when necessary and possible.
- You never make progress on auto-build items. When work is done it is seen as a partially completed normal build item in the queue.

Auto-build items include Mines, Factories, Defenses, Mineral Alchemy, Terraforming, and auto-building and flinging Mineral Packets (if you have a mass driver).

CHANGING THE ORDER OF PLANETS IN THE PRODUCTION DIALOG

You can use the Planet report to change the order in which planets appear in the production dialog. This allows you to easily find the planets that may need upgrades of a specific type (such as starbases) and add the upgrades to the production queue.

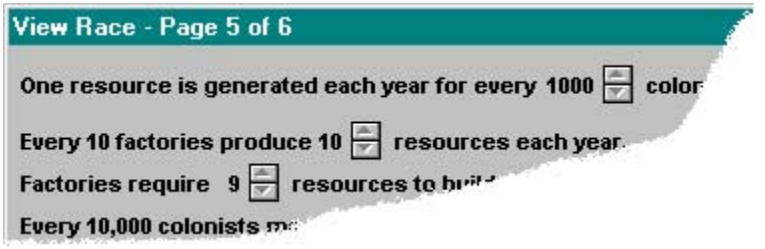
1. Press F3 to open the Planet report.
2. Click at the head of any column, choosing a sort that appeals to you. You may want to sort by starbase, by production, mines, factories—anything you wish.



3. Click in on the Production column to open the queue for that planet.
4. Click on **Next**, paging through the queues for each planet. Notice they appear in the order you specified in the report.

Changing the sort order of planets also changes the order in which they appear when you click on **Next** and **Prev** in the Planet tile.

CONDITIONS THAT AFFECT PRODUCTION



Page 5 of the View Race dialog tells you if you excel at building and operating factories and mines, as well as how many resources *N* colonists will generate each year (not counting the resources created by factories). The more each of the following conditions are true, the more your race will excel at production:

- One resource is generated each year for every seven colonists.
- Factories produce 15 resources per year.
- Every factory requires five resources (and the usual amount of minerals) to build.
- Colonists may operate 25 factories.
- Factories cost one mineral less to build.

Of course, the mining rate also affects production. The closer your race is to meeting one or more of the following conditions, the better:

- Mines produce 25 kT of minerals per year.
- Every mine requires two resources to build.
- Every 10,000 colonists can operate 25 mines.

How Research Makes Production Cheaper

Production of a particular item becomes cheaper when all research requirements are surpassed by one level. For example, an engine requiring research level 3 Propulsion and level 1 Energy becomes 4% cheaper when you attain level 4 Propulsion and level 2 Energy, 16% cheaper with level 7 Propulsion, level 5 Energy, and so on. You can eventually reduce the cost of producing some items by 75% (or 80%, if you possess the Bleeding Edge trait, which decreases costs at a rate of 5% per level instead of the normal 4%).

Learn more about
Factories, p 6-5
Mining, p 13-1
Research, p 8-1

Disaster Strikes Planet X!

When comets or other naturally occurring blunt instruments crash into inhabited planets, the planet's production queue is reset. All work in progress is lost, including the resources spent on that work. It's not all bad. Usually a cosmic barrage brings extra minerals that you can apply immediately to production.

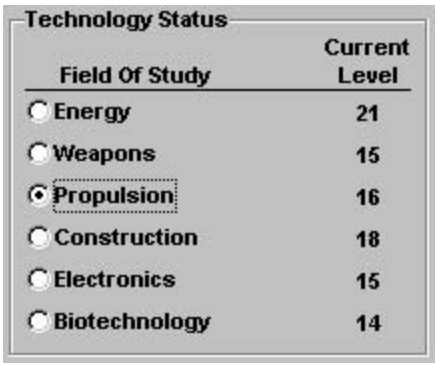
8 RESEARCH

You can't go from rubber band drives to ramscoops or from binoculars to 520X planetary scanners without applying mental elbow grease. This means research. Fortunately, to conduct research in Stars!, you need to know nothing of physics or animal husbandry, biomechanics or elastic waistbands. You only need to know which general areas of technology you wish to research and how many resources you wish to allocate to that research. That, pushing a couple of buttons, and being patient, will gain you access to all the technology you need to rule the known Stars! universe.

Resources are units of work created by people and factories. They represent the effort involved in performing a task or producing an item.

Before you start researching, spend a little time in the Technology Browser (press F2). Learn about the types of technology available to your race, the items you want to build, and which areas and levels of research are needed to do that.

FIELDS OF STUDY



There are six fields of study: Energy, Weapons, Propulsion, Construction, Electronics, and Biotechnology. You can research only one at a time. The levels of proficiency range from 0 to 26 (at 26, you are a techno-geek summa cum astrolabe, a level that 20th century hi-tech moguls can only daydream about reaching). When you complete a research level, new technology becomes available to you.

Going beyond the level needed to produce an item has cost benefits: for every technology level you achieve above the required level, the production

cost of that item is reduced by 5%. You can eventually reduce the production costs for many items by 75%. This is also referred to as miniaturization.

The type of research needed to gain a technology depends on the function of that technology. For example, most ship hulls require Construction research only. Some technology requires research into more than one area: Gravity Terraforming requires research in both Biotechnology and Propulsion.

Use the Research dialog to specify a field of study and the percentage of resources you wish to apply annually to that research. The dialog also displays the specific technology you'll gain by achieving the next few levels in that field. Resources applied to research are taken off the top of your resource heap. This allocation is modified only if you check Contribute Only Leftover Resources to Research in the Production dialog, reversing the order and allocating resources first to production, then research.

You can change research fields before achieving a new level. Stars! keeps track of how much progress you've made in a field, allowing you to return to a partially researched field at any time without losing progress.

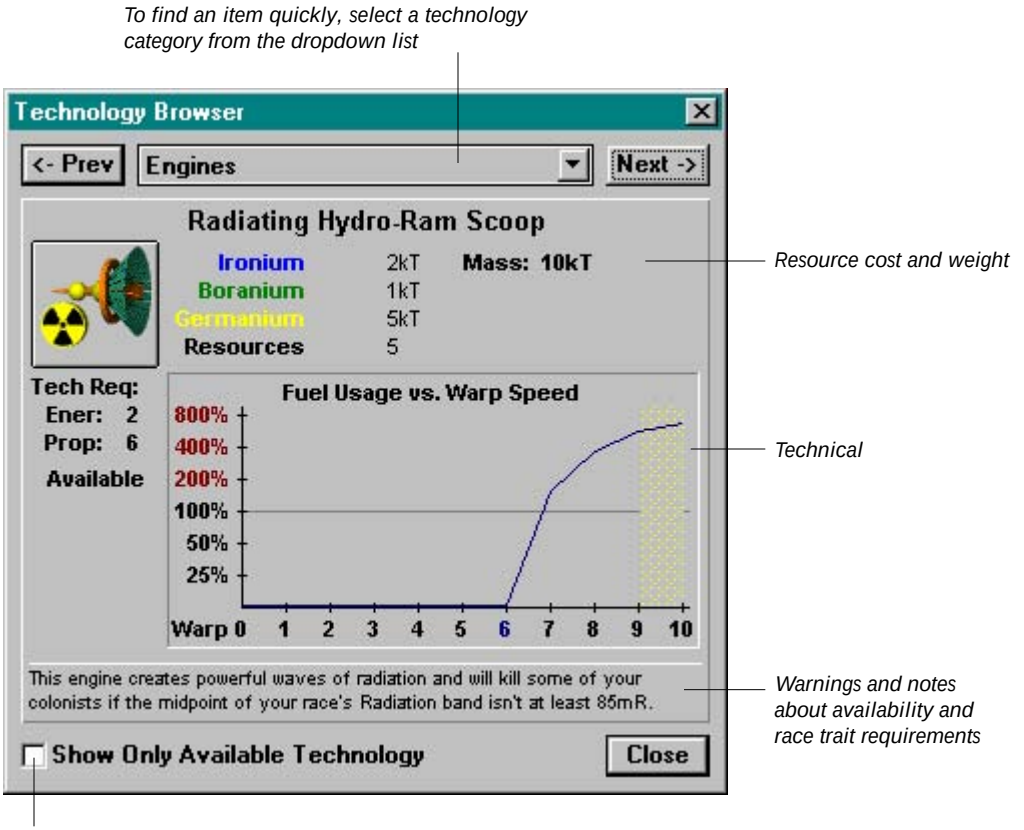
Choosing the Next Field of Study

Queue your next field of interest using the Next Field to Research dropdown in the Research dialog. This switches your research as soon as you reach the next level in your current field. All resources not needed to reach the next level in your current field are applied to the next field.

If you achieve the maximum level for a field and forget to specify a new field, Stars! automatically selects the least researched field.

BROWSING STARS! TECHNOLOGY

The Technology Browser provides details about every technology you can learn through research, including ship components, planetary installations and terraforming. To enter the Technology Browser, press F2 or choose the **Help** (**Technology Browser**) menu item.



Cost appears when you haven't completely researched the technology required to build the item. The color of each required research field tells you whether you've completed the necessary level of research. Red indicates you have more research to do, black indicates that you have reached the necessary level. The number next to each field is the level to attain. The Cost is the number of resources needed to build that item.

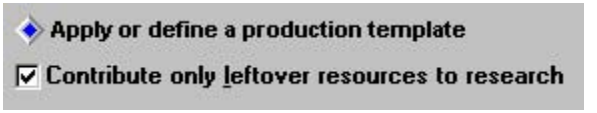
The Technology Browser always displays cost and other information relative to your race type and current level of knowledge. The printed documentation and online help shows base costs without regard to race traits or current knowledge.

Learn more about
Technology Data Tables, p B-1

ALLOCATING RESOURCES FOR RESEARCH

How Production Affects Research

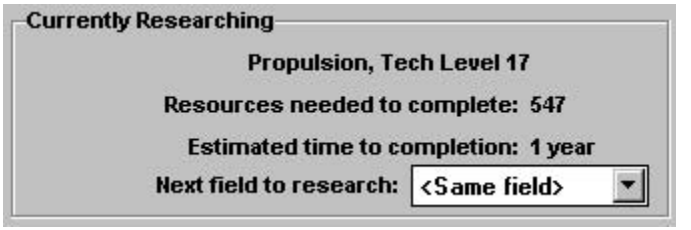
For research, you receive all resources from planets with nothing in the production queue and with auto-build turned off. You also receive all unspent resources from planets with queues blocked by lack of minerals. If the Contribute Only Leftover Resources to Research box is selected in the Production dialog, you'll only receive the resources left over if the planet's queue is emptied that turn.



If this box is not selected, you'll receive the percentage of resources you indicated in the Research dialog, plus any resources left if the production queue if emptied that turn. If the production queue is blocked you'll receive all the resources from that planet for that turn.

Predicting How Much Time Research will Take

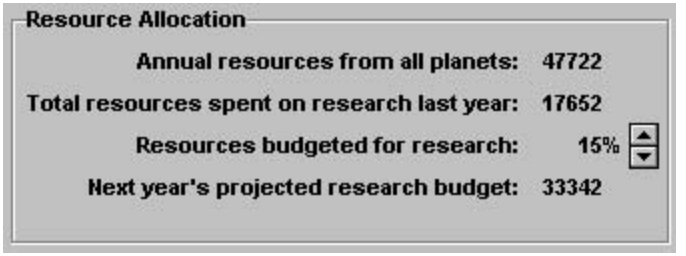
Predicting the amount of time it will take to complete a research level is slightly tricky. Stars! displays the Estimated Time to Completion in the Research dialog.



The estimate is based on an unchanging supply of resources, including the following:

- all resources from planets with empty production queues and non-active auto-build
- allocated resources from planet's items in production but who are dedicating resources to production first (Contribute Only Leftover Resources to Research box is not selected).

To get your best estimate of how long research will take, look at both the current time estimate and the number of resources allocated the previous year (also shown in the Research dialog). Each turn, check how much the estimate changes as a result of changing conditions in your empire.



To get a more accurate estimate, assign or change your research allocation as the last task of your turn. By then, Stars! will know how many resources are required for production and will remove those from the calculation for research time.

Sample Strategies for Resource Allocation

Some people play Stars! with global research allocation set to a low number, assuming that on some turns production queues will run out of things to do and large amounts of resources will be allocated automatically to research. Other people like to keep their production queues busy all the time, and need to allocate a larger research allocation up front. Both styles can be equally successful.

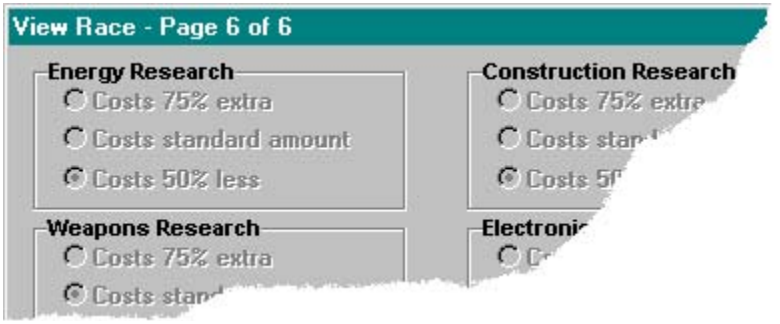
THE COST OF RESEARCH

Research becomes more expensive for each level of technology you achieve. You spend resources to do research. Research in any field becomes progressively more expensive, increasing in a Fibonacci type series. The total cost equals the cost for that field plus the added cost of 10 resources per field of study per level you've already achieved. This cost is calculated for you in the Research dialog.

Fibonacci numbers are the unending sequence 1, 1, 2, 3, 5, 8, 13, 21, 34 ... where each number is the sum of its two predecessors.

In general, you should pick which technology you wish to learn, then research only the field(s) needed for you to be able to gain that technology. Then you'll never use more resources than necessary to learn a technology. Ultimately, though, it costs the same to research all technology. The added

costs encourage you to develop a few initial technologies quickly and take them out into the universe.

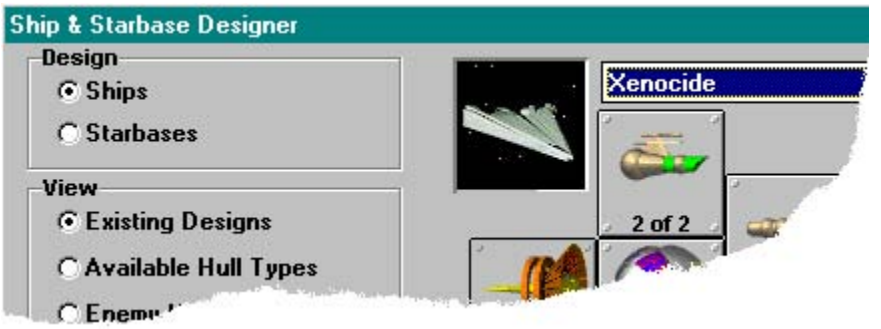


Research can be cheaper for some races than others. To learn how efficient your race is at performing research, choose the **View** (**Race**) menu item, then turn to page 6 of the View Race dialog. Both the Technology Browser and pages 2 and 3 of the View Race dialog show you which technologies you won't be able to research due to a primary trait. The Research dialog shows you only the technology that's available to your race.

Generalized Research trait

If you choose the Generalized Research trait when building a race, your race will take a holistic approach to research. Only half of the resources dedicated to research will be applied to the current field of research. 15% of the total will be applied to all other fields.

9 SHIP AND STARBASE DESIGN



Use the Ship and Starbase Designer to create, edit and delete new ship and starbase designs. Once you create a new ship design you can add it to the production queue of any of your planets that has a starbase with a space dock.

You don't need a starbase to build a starbase. If your colony has the resources and minerals, just add the starbase to the queue.

HOW TO APPROACH HULL DESIGN

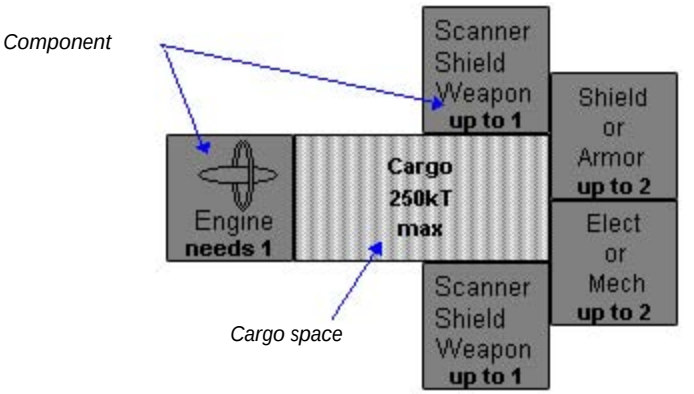
Develop a strategy for deciding when to create a new design. If you create a new design every time you successfully research a new piece of technology, chances are you'll have too many ships of similar design out in space at the same time. Try to leave room for at least one additional design, so that you can create a new design quickly without first deleting an existing design. You could also create a new design for an existing class of ship, such as a colonizer, when the existing design has outlived its usefulness.

Example Obsolescence Strategy
If you have colonized most or all planets within range of your current colonizers, you may want to delete the old design and replace it with a new one.

Spend time in the Technology Browser learning about the ship technology you think you'll want to research. Take ship design into account when you plan your research strategies. If possible, design new ships only when you gain the technology you need to make a significant advance over older designs.

DESIGNING A NEW HULL FROM SCRATCH

Hull schematics show the type and number of components a hull is designed to hold. The schematic is made up of component slots that only accept the type and number of components indicated by their labels. Cargo spaces only show cargo capacity — they do not accept components.



To design a new ship from an empty hull schematic:

1. Select **Available Hull Types**.
2. Click on the dropdown list and select a design:

3. Click on **Copy Selected Design**.

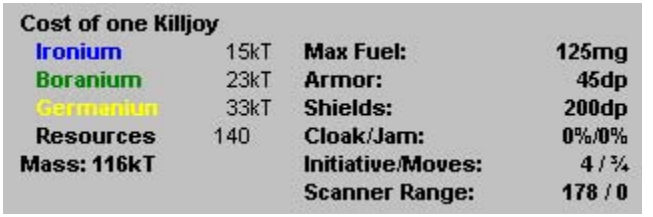
   If the **Copy Selected Design** button is shadowed, you've reached the maximum of 16 concurrent ship designs. You must delete an existing design before you can design a new ship.

Tip: You can use **Copy Selected Design** to clone a known enemy ship design (although the results may not be perfect).

4. Attach components to the hull by dragging them from the list of ship components to a compatible tile on the ship schematic.

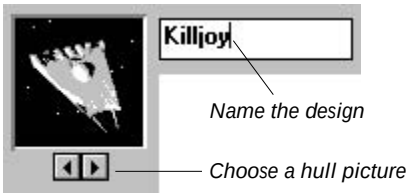
Tip: Hold down the CTRL key to drag as many items as the slot can hold, or the SHIFT key to drag four parts at a time.

The cost, mass, fuel capacity, shield and armor strengths, and other ship statistics are shown in the lower-right corner of the Designer. These values change as components are added or removed.



Some of the values shown in this figure are not displayed in resolutions lower than 800x600.

5. Choose a hull picture and name the new design.



6. **OK** the Designer.

EDITING AN EXISTING HULL DESIGN

Do the following if you want to change an existing design or create a new design based on the existing design. You can edit a design only if none of your existing ships use that design.

1. Select **Existing Designs**.
2. Click in the dropdown list and select the design.

3. Click on **Copy Selected Design**.

   If the Copy Selected Design button is shadowed, you have reached the maximum of 16 concurrent ship designs. You must delete an existing design before you can design a new ship.

   If the **Edit Selected Design** button is shadowed, there are existing ships based on this design. Only designs for which no ships exist may be edited.

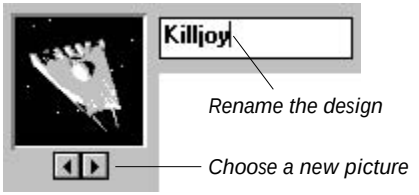
Tip: You can use **Copy Selected Design** to clone a known enemy ship design (although the results may not be perfect).

4. Drag the components to be removed from the ship schematic to the collection of ship components and release.

   Drag the components one at a time, or hold down the CTRL key to drag all items from the slot, or the SHIFT key to drag 4 parts at a time.

   If you wish, replace the old components with new ones from the ship component list. Drag them over to the ship schematic and release.

5. If you wish, the change design image and name.



6. Save the design:

   ❋ To save the design under the same name, click on **OK**.

- To rename the design (creating a new design), click in the name field and type in a new name. Then click on **OK**.

DELETING AN EXISTING HULL DESIGN

If you delete an existing design, all ships that use that design are destroyed, and their minerals are lost to the cosmos. If you wish to retrieve some of the minerals used in the ship, scrap all the ships using that design, then delete the design.

A plaque appears below ship schematics of existing designs. It tells you how many ships built on the selected design still exist. If you delete an existing design, any existing ships built with that design will be destroyed.

In this case, all 19 ships built on this design have already been destroyed. Deleting this design will not destroy any existing ships.

In this case, 34 out of the 36 ships built on this design remain intact. Deleting this design will destroy all 34 remaining ships. Ships destroyed by this mechanism are not recycled for scrap.

Deleting Designs Using the Ship and Starbase Designer

1. In the Ship and Starbase Designer, select **Existing Designs**.
2. Click on the dropdown list and select the design to delete.
3. Click on **Delete Existing Design**.

Other Methods of Deleting Hull Designs

Pick a design that is no longer useful (too slow, ineffective weapons). Before you delete the design, think of the most advantageous way to get rid any existing ships of that design. The following provide example strategies:

Example 1: Send each ship of the design to planets that need minerals. Set the waypoint task at each planet to **Scrap Fleet**. A portion of the minerals will be returned to the surface supply on that planet. If you use this method, you'll have to wait until all the affected ships reach their assigned waypoints.

Example 2: Delete all the ships at in one stroke using the Ship and Starbase Designer. You'll be warned that all the ships of that design will be destroyed. When you delete ships this way you receive NO minerals.

Example 3: If the ships of the type you wish to delete use any weapons, use them in a large battle as distracting cannon fodder, possibly keeping your more advanced ships safer a little longer.

COUNTING THE NUMBER OF HULL DESIGNS

To learn the total number of designs you've created:

1. In the Ship and Starbase Designer, select **Existing Designs**.
2. Click on the dropdown menu and count the number of designs. This example shows five designs.

To learn how many ships of a single design are in play:

1. Select **Existing Designs**.
2. Click on the ship name in the dropdown list.
3. Look at the number displayed on the plaque under the dropdown:

The first number shows how many ships of that type still exist, the second shows how many you built since creating the design. Here, one ship was built and is still in play.

Tip: You can locate all ships of one type using the Ship Design Filter in the Scanner pane.

REACHING THE MAXIMUM NUMBER OF DESIGNS AND FLEETS

There are limits to the number of designs, ships and fleets you can have in the game. Develop strategies that take these limits into account.

- Different ship designs per player: **16**
- Total ships of each design in a fleet: **32,000**
- Fleets per player: **512**
- Different starbase designs per player: **10**

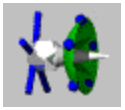
Stars! will gray the **Copy Selected Design** button in the Ship and Starbase Designer once you reach 16 designs.

Although Stars! will let you know if you've reached the maximum number of designs when you try to create a new design, you're better off keeping track of the number yourself.

If you've reached the design limit of 16 and wish to create a new design, you'll have to delete an existing design first. To delete a design, use the Ship and Starbase Designer. Develop strategies for deciding when to create new designs and when to obsolete older designs.

Tip: To determine the number of fleets you currently have select the **Report** (**Fleets**) menu item. The total count of your fleets is displayed in the title bar of the report.

ADDING SHIP-BASED SCANNERS



To gather any planet details from orbit or space, or the details of an opponents' fleet from a distance, most fleets must have a ship-based scanner. Scanning a planet you don't own will supply data about the planet's environment and subterranean mineral concentration only. A ship without scanners must send down a robot miner to gather the same information and can only detect an opponents'ship if it is at the same X,Y coordinates.

Minerals Above the Surface
You learn how many minerals are on the planet surface only after colonizing the planet, or remote mining, or using a Robber Baron scanner.

Scanner Types

There are three basic types of ship-based scanners: those that scan planets from orbit; those that scan planets from orbit and fleets from a distance; and those that scan both planets and fleets from a distance. One scanner, the Chameleon, doubles as a cloaking device.

Scanners for Pirates
The Pick Pocket and Robber Baron scanners can see the contents of an enemy fleet's cargo holds. The Robber Baron scanner can also see surface minerals on enemy planets. These scanners aid the modern pirate in making wise choices on issues concerning pillage and plunder.

Your First Scanner

You generally start the game with the Bat scanner, a low-tech device that detects planet details only from orbit, and has no long-range fleet-detection capability. You'll want to browse the more advanced models. For a description of all the different scanners, take a look inside the Technology Browser.

Scanners are Cumulative

Multiple scanners on a single ship are cumulative. Fleets are still limited to the range of the best ship in the fleet, but a particular ship's scanner range is a modified sum of the ranges of its scanners. The formula for calculating a ship's scanner range is the 4th root of the sum of each scanner to the 4th power. Let's say you have a ship design with two 100 light year scanners and one 60 light year scanner. (100^4 + 100^4 + 60^4) ^/= 120 light years. The same calculation applies to planet penetrating scanners.

Learn more about Scanning, p 17-1

ADDING CLOAKING DEVICES

A cloaking device reduces the range at which your opponents' scanners can detect your fleets. There are several different types of cloaks, each reducing opponents' scanner range by a specific percentage. The higher the percentage, the more the range is reduced. Cloaks on a ship can all be the same strength or of different strengths. Cloaking is shared by an entire fleet: every ship not carrying a cloak is covered until it leaves the fleet.

When designing a ship, you can add a cloaking device to any slot labeled **Electrical** or **General Purpose**.

Races with the Inner Strength trait can learn how to build Tachyon Detectors. This device has the ability to reduce the effectiveness of other player's cloaking devices.

Learn more about Cloaking, p 17-4

The Guts of Cloaking, p 24-1

ENGINES

There are two basic types of Engines: the standard engine, which requires the anti-matter Fuel available at all full-serve starbases; and the ramscoop engine, which can scoop its fuel from the stuff of the universe. Both engines types have an absolute maximum speed of Warp 10. Each type has advantages and disadvantages, and several require the presence or absence of certain race traits.

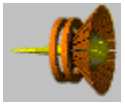
For details on a specific engine, see the Engines section of the Technology Browser.

Standard, Fuel-hungry Engines

Engines that require Fuel will serve you well in the early stages of the game. If you chose the No Ramscoop Engines trait when you created your race, you'll use standard engines during the entire game. In this case, the Interspace-10 will be available to you.

Ramscoop Engines

You won't be able to build ramscoop engines if your race possesses the lesser trait, No Ramscoop Engines.

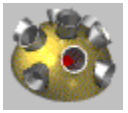


Ramscoops can draw their fuel from space, making them the cheapest engines to operate. The Radiating Hydro-Ram Scoop engine radiates massive quantities of radiation and shouldn't be used for colonist transportation, unless your race is immune to radiation or your race's OPTIMAL radiation level is AT LEAST 85mR. For example, a range of 80 to 90mR would work, as would a range of 70 to 100mR—as long as the midpoint is 85mR or higher. If the range is, say, 35 to 95mR, it won't work, because the optimal level for that race would be 65mR.

Ships with ramscoops incur greater damage when struck by mines than other ships.

IMPORTANT! The optimal radiation level is the MIDpoint of the habitat range for Radiation. Use the **View** (**Race**) menu item to learn your race's optimal radiation level.

Overthrusters



Overthrusters give you an advantage in battle and help compensate for any movement penalties caused by hull and cargo mass. One Overthruster gives the ship one extra half square of movement per round of battle, with each additional Overthruster providing an additional half-square.

Overthrusters and Maneuvering Jets are described further in the Mechanical section of the Technology Browser.

Maneuvering Jets

Like Overthrusters, Maneuvering Jets give you an advantage in battle. One Maneuvering Jet gives the ship a speed bonus of one-quarter extra square of movement per round of battle. Each additional Maneuvering Jet provides an additional one-quarter square of movement.

Learn more about

Setting Fleet Speed, p 10-1

Using Fuel, p 10-5

Initiative and Speed, p 23-8

Battle Board, p 23-1

LEARNING ABOUT OTHER PLAYERS' HULL DESIGNS

When you encounter an opponent's ship, you automatically detect its basic hull type. If you enter into a battle with the ship, you learn which components are used in the design as well. To review enemy hull designs:

1. Select **Enemy Hulls**.
2. Click in the dropdown list and select a design.

A schematic of the ship displays. If you've encountered the ship only in passing, the schematic is empty. If you've met that devil in battle, all components are displayed. Right-click on each component to display further details.

Tip: You can use **Copy Selected Design** to clone a known enemy ship design (although the results may not be perfect).

War Mongers

Races with the War Mongers trait know all ship designs the second they see them. They don't have to fight to learn hull details.

TRADING SHIP DESIGNS

You can use the Transfer Fleets waypoint task to trade ship designs with other players. To receive a fleet you must have less than 16 different designs (the maximum allowed).

10 MANAGING FLEETS

A fleet is a distinct group of one or more ships, and can be any mix of ship types. Fleets can be created, merged, and split at any point in the game. You design the ship types, add them to production queues, create fleets, then assign waypoints and tasks. Fleets can be used for exploration, defense and offense, colonizing, remote mining, and transporting minerals and people.

ASSEMBLING FLEETS

Each player can have up to 32,000 ships of each design in a fleet, with up to 16 different designs, and up to 512 fleets.

For some tasks a fleet with a single ship is sufficient. For example, exploration or colonization usually only requires one ship outfitted with the appropriate technology. However, for moving large quantities of minerals around, for defending your planets and for attacking other players it's very useful to have large groups of ships in a single fleet.

You can merge and split fleets as you wish, using the Merge Fleets waypoint task or the Merge and Split buttons in the Command pane. The affected ships must be in the same location.

WARP SPEED

A fleet's warp speed determines the number of years it takes to reach a waypoint, as well as fuel usage. Actual distance traveled is the square of the warp speed. For example, a fleet traveling at Warp 8 will move up to 64 light years each turn.

The Fleet Waypoints tile always suggest an optimum speed to reach the waypoint, using the least amount of fuel to deliver the fleet in the shortest amount of time. If a stargate is present and safe to use for travel between waypoints, it is automatically selected. If the next waypoint is a friendly

Learn more about
Navigation Using Stargates, p 11-3

starbase or the fleet has Scrap Fleet or Colonize orders, or includes a hull with a colony pod, the fleet travels at the maximum possible speed for its engine and fuel supply.

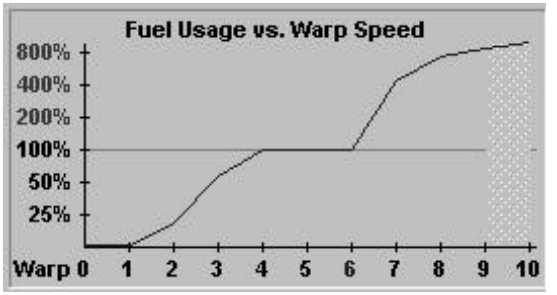
Maximum Speed

All engines have an absolute maximum speed, a maximum safe speed, a maximum free speed and an optimum speed.

The absolute maximum speed for all engines is warp 10. The maximum safe speed for most ships is warp 9. You can push your fleet to warp 10, but you'll have a 10% chance of losing each ship in the fleet at that speed. Only ships using warp 10 capable engines can travel safely at warp 10. You can tell if an engine is warp 10 capable by viewing it in the Technology Browser and seeing if the area between warp 9 and 10 is covered with a yellow warning pattern or not.

For most standard engines the maximum free speed is warp 1. This means that you can travel at warp 1 using no fuel.

For standard engines the optimum or best warp speed is the maximum speed at less than 120% fuel usage. For Ramscoop engines the best warp speed is the maximum speed that the engine can travel using no fuel. To learn the best speed for a specific engine, visit the Engines section of the Technology Browser. The Fuel Usage vs. Warp Speed graphs in the Browser shows this speed for each engine. The following graph shows that the best warp speed for this engine is warp 6.



The grid between warp 9 and 10 shows that the ship using that engine has a 10% chance of self-destructing while traveling at warp 10.

Travel Warp 1 without Using Fuel

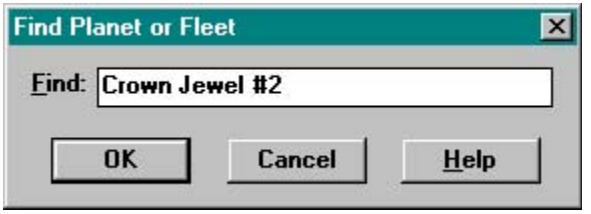
Any ship can travel Warp 1 without using fuel. This means you travel 1 light year per year of play. You also generate tiny amounts of fuel at Warp 1, and may be able to put on small bursts of speed. This really is helpful only if you're close to your destination, almost out of fuel, and don't want to bother sending a rescue ship.

FINDING A SPECIFIC FLEET

The simplest way to locate a planet or fleet is to use the Find command. Use either the **Command** (**Find**) menu item, or press CTRL-F.

To find a fleet of your own, do *one* of the following:

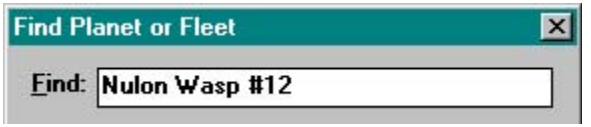
- Enter the fleet number using any format (fleet #58, fleet 58, #58, 58).
- Enter the full name of the fleet.



To find another player's fleet:

- Enter the fleet identification using this format:

  race_name fleet #*fleet_number*



If Stars! says it cannot find a planet or fleet by that name, try again, making sure you type the correct name or number, or that you used the correct format for finding another player's fleet. If you still can't find a fleet, it may no longer exist.

If you are looking for a fleet with a specific composition:


Ship Design filter

1. Select the Scanner pane's Ship Design Filter.
2. Select the ship type from the pop-up list. Only fleets that contain that type of ship will appear in the Scanner.
3. Double-click on the fleets now shown in the Scanner. If more than one fleet is at a location, continue to click. As you click, the fleets will cycle through the Command pane. You can also use the **Next** or **Prev** buttons on the Fleet tile, or click in the Fleet report--**Reports** (**Fleets**) menu item.

   Details for each fleet are listed in the Fleet Composition tile.

SWITCHING BETWEEN FLEETS

Switch between fleets using one of the following methods:

- Use the **Find** command (CTRL-F), then click on the ship in the Scanner pane.
- Press the **Prev** and **Next** buttons on the Fleet tile to scroll through all your fleets in the Command pane. The fleets appear in the current sort order of the Fleet Summary Report.
- Click a location where more than one fleet is present. Right-click on the spot and select another fleet from the pop-up list. Alternately, continue to click in the location until the fleet appears in the Fleet tile.
- In the Other Fleets Here tile, select a fleet from the dropdown list.
- Click on the row for that fleet in the Fleet Summary Report.

NAMING FLEETS

1. Select the fleet you wish to rename, displaying it in the Fleet tile.
2. Click on **Rename** in the Fleet tile.
3. Replace the existing text with your own more descriptive label.
4. **OK** the Rename dialog. The new name appears in the Fleet tile and anywhere else you'd expect the name to be displayed.

You can use either the new name or the fleet number when Finding a fleet. Other players cannot see the names you have given your fleets.

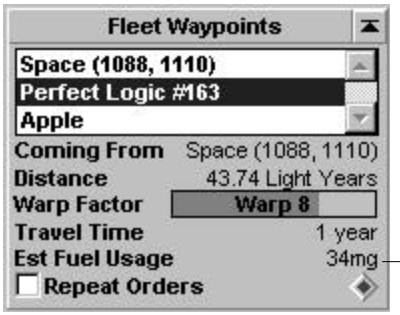
USING FUEL

Fuel is a manufactured commodity made of anti-matter and is measured in milligrams (mg). This means it has little effect on the ship's mass (and thus, fuel usage). Fuel can only be obtained from starbases with ship building capability or from other fleets. It is also created by ships traveling at their engine's free speed, by fuel tankers and by ships with Anti-Matter Generators.

Fuel is shared by all ships in a fleet. The fuel capacity of a fleet is the sum of the fuel capacity for each ship in the fleet. The rate at which fuel is used is based partially on the mass of all ships and cargo in the fleet. Fuel usage is also based on the rate at which each ship in the fleet uses fuel at a given speed. All ship types can move at any speed, but they each burn different amounts of fuel to achieve that speed. The total fuel usage for the fleet is the sum of the fuel usage for all the individual ships.

Ship_fuel_usage = (ship_mass x efficiency x distance / 200 + 9) / 10

Fuel usage between waypoints is shown in the Fleet Waypoints tile. The amount shown for reaching the selected waypoint is always exact.



Estimated Fuel Usage for travel from the current waypoint to the fleet named Perfect Logic #163, with speed set to Warp 8.

Sometimes Slowing Down Uses More Fuel

Each year's travel is a separate jump that uses a finite, countable number of milligrams of fuel. Let's say that you have a fleet that can travel at warp 5 for 3mg per year of travel. A journey of 100ly would take 4 years and use 12mg of fuel. If you slowed down to warp 4 it would only cost 2mg per year of travel but the journey would take 7 years for a total of 14mg of fuel. This is a case where it is more economical to go at the faster speed.

Refueling

To refuel, simply visit one of your planets with a starbase with ship building capability in orbit. You'll be refueled automatically. Fuel can also be transferred between fleets manually or with a Transport waypoint task.

Tip: Since fuel is shared by the entire fleet, you can help guarantee that a ship with a low fuel capacity reaches its destination by merging it into a fleet with a large fuel capacity.

Fuel and Combat

Ships don't use fuel while in combat.

Fuel Transports

Fuel transports produce 200 mg of fuel each year, regardless of how far they travel.

Tip: Fuel transports also cause damaged ships in the same fleet to heal 5 or 10% faster, depending on the hull type of the fuel transport.

Fuel and Ramscoop Engines

Ramscoop engines draw fuel from surrounding space, allowing them to travel up to a certain speed at no cost. If you load fuel on a fleet using ramscoop engines and set a speed greater than that allowed for free travel, the fleet will travel at the set speed until it runs out of fuel, then slow to the maximum free speed for that ramscoop. Ramscoops generate fuel when traveling at the free speed. Traveling at speeds below the maximum free speed can generate even more fuel.

Speed for Free
Each type of engine has a different maximum speed for travel without using Fuel. See the Engines section of the Technology Browser for more information.

Fuel, Stargates and Wormholes

Ships don't use fuel while traveling through a stargate or a wormhole.

Only races with the Interstellar Traveler trait can take cargo through stargates. All other races are limited to fleets that do not carry cargo. Fuel does not count as cargo when passing through a stargate.

Wormholes are unstable and can wander. Be sure that any fleet using a wormhole has enough fuel to return to a friendly planet should the opposite end of the wormhole travel and deposit the fleet far from the expected location.

Running Out of Fuel (Well, Nearly)

Even the best of us occasionally runs out of gas. The same is true for you as an Emperor. For ships with Ramscoop engines this isn't a problem as they will automatically slow down and continue their journey at their fastest free speed. For ships with normal engines you have several choices. If they are worth saving you can send a fleet to rescue them. If they aren't worth saving then you can either just ignore them or scrap them. Or you can let them limp home at Warp 1.

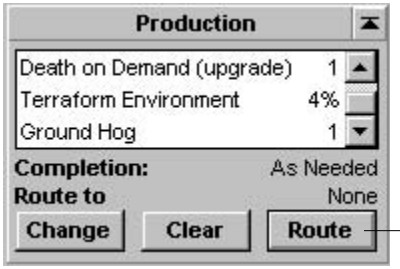
Any ship can travel Warp 1 without using fuel. This means you travel 1 light year per year of play. You also generate tiny amounts of fuel at Warp 1, and may be able to put on small bursts of speed. This really is helpful only if you're close to your destination, almost out of fuel, and don't want to bother sending a rescue ship.

Fuel Warning in the Fleet Waypoints Tile
When you choose a waypoint you can't reach given the current speed and fuel supply, the Fuel Usage amount displayed in the Fleet Waypoints tile

ROUTING FLEETS

Routing automatically sends fleets from one planet to another. Stargates are used, if they are available. If the destination planet is yours, and it also has a route destination, the fleet will be passed automatically to the next point.

Routing is most useful in large universes where you are regularly distributing new ships from specialized production centers to other points in your empire. Routing can also be used to send existing fleets from one side of your empire to the other, specifying only one waypoint within fuel range.



Routing is a function of a planet's center of production.

To set a planet's route destination:

1. Click on the **Route** button in the planet's Production tile.
2. Move your cursor to the scanner and click on the route destination. A line appears between the origin and destination. Any ship that has route orders will be sent to this destination, as well as any newly built fleet.

To change the route destination:

- Click on the **Route** button, then click on the new destination.

To remove a route:

- Click on **Route**, then click on the planet of origin.

Tip: You can also change a planet's route destination by holding down the CTRL key and clicking on the new destination.

To pass fleets from route destination to route destination:

1. Set a route destination for each planet in your circuit or path.
2. Select the fleet to be routed.
3. Using the Waypoint Tasks tile, assign the fleet Route orders. When it arrives at a planet with a route destination, it will automatically be passed along. If the planet has a starbase with ship building capability, the fleet is automatically refueled as well.

Route Behavior

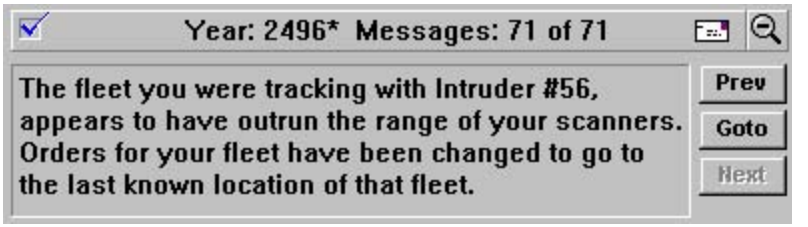
If the route destination is an uncolonized planet and fleet includes remote miners, its orders are automatically changed at the destination to Remote Mining. If the route destination is a planet with your mining fleet already in orbit, the final waypoint task is automatically changed to Merge with Fleet.

Route will not auto-colonize at the destination. You must specify colonization orders upon the fleet's arrival.

RENDEZVOUSING FLEETS

It's useful to specify one fleet as a destination for another if you are transferring cargo between fleets (for example, between a remote miner and a freighter), merging fleets, or chasing an opponent's fleet.

To rendezvous one fleet with another, just select the current position of the destination fleet as the waypoint for the fleet that wishes to intercept it. As long as the destination fleet can be detected by the pursuing fleet's scanner, this fleet will follow the destination fleet until it overtakes it or runs out of fuel. If the fleet in pursuit loses sight of the destination fleet, it travels to the destination fleet's last known position.



How to Pick a Fleet Out From a Crowd

When two or more fleets are at the same location or close together, and you want to send another fleet to meet with one of them, do one of the following:

- If the fleets are close together, zoom in using the plus (+) key until you can see everything clearly. Then set the waypoint on the fleet you wish to rendezvous with. Press the minus (-) key to zoom out.
- If two fleets are in the same location and you wish to target one specifically, or target an opponent's fleet in orbit, click on the blue diamond in the Fleet Waypoint tile, then select the destination fleet from the pop-up list.
- If the goal is to refuel the destination fleet or join with the destination fleet then you can use the Merge with Fleet waypoint task. This task requires that you specify the destination fleet as the waypoint.

You can use the Ship Count overlay to help you find locations where more than one fleet is present.

Learn about

Transferring Fuel and Cargo to other Ships, p 14-2

SPLITTING FLEETS

To split a fleet, click on the **Split** or **Split All** button in the Fleet Composition tile. Choose **Split** to transfer any number of ships between the fleet under command and the fleet selected in the Other Fleets Here tile. Choose **Split All** to divide all ships in the fleet into separate fleets based on ship design.

The **Split** and **Split All** buttons are disabled when you reach 512 fleets.

The **Split All** button will fail if the action will result in you having more than 512 fleets.

MERGING FLEETS

To merge entire fleets with others, click on **Merge** in the Fleet Composition tile. This allows you to merge any combination of fleets at the same location.

You can also merge fleets using the Merge with Fleet waypoint task, located in the Waypoints task tile.

If you would like to transfer some but not all ships between the fleet under command and a selected fleet at the same location, click on the **Merge** button on the Other Fleets Here tile.

SCRAPPING FLEETS

Scrap or destroy a fleet by merging it with a colony fleet or by choosing the Scrap Fleet waypoint task. Scrapping allows you to regain a percentage of the minerals used in the ship's construction and all the mineral cargo on board. This is a good way to get rid of ships built using a hull design that is no longer useful. You can scrap fleets at any planet or even in deep space.

Ultimate Recycling

Races with the Ultimate Recycling trait recover 90% of the minerals and 70% of the resources when scrapping at a starbase. Scrapping at a planet gives 45% of the minerals and 35% of the resources.

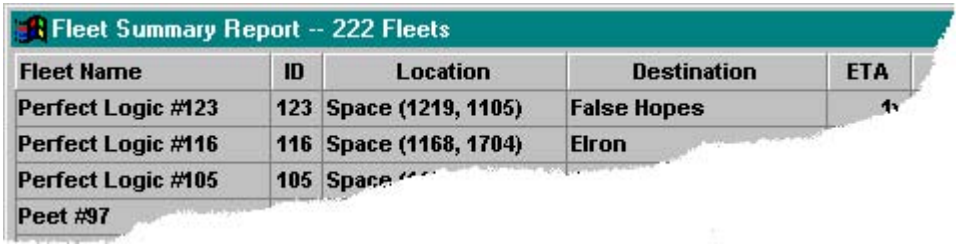
The construction minerals you recover are added to the minerals at the planet where the fleet is scrapped. The percentage of minerals recovered depends on the following circumstances:

- Colonization mission — leaves 75% of the minerals used in construction on the surface of the planet.
- Scrap Fleet at a starbase — leaves 80% of the minerals used in construction on the surface of the planet.
- Scrap Fleet at any planet without a starbase — leaves 33% of the minerals used in construction on the surface of the planet.
- Scrap Fleet in deep space — all construction minerals are lost.

Feeding Scraps to other Players

You can exchange technology with an opponent by scrapping a fleet at the opponent's planet. The opponent has the same chance of learning the technology as they if they had met you in battle. They also get the recycled minerals and, if they have the Ultimate Recycling trait, they also get resources.

REPORT FOR YOUR FLEETS


Fleet Summary Report -- 222 Fleets

Fleet Name	ID	Location	Destination	ETA
Perfect Logic #123	123	Space (1219, 1105)	False Hopes	1
Perfect Logic #116	116	Space (1168, 1704)	Elron	
Perfect Logic #105	105	Space		
Peet #97				

The Fleet Summary report shows where all your fleets are currently located, the orders that each is to follow at the next waypoint, the fuel supply, cargo, fleet composition, cloaking percentage, and current mass.

- Go to a fleet by clicking anywhere in the row for that fleet.
- Display the fleet's composition and any damage by clicking on the Composition column. If the composition is shown in red, one or more ships has taken damage. A plus sign (+) indicates that the fleet is composed of more than one ship type.
- Transfer Cargo by clicking on the Cargo column.

Learn more about Reports, p 18-1

11 NAVIGATION

You cause a fleet to move by assigning it one or more destinations, or waypoints. You can assign a task at each waypoint, such as transport, colonize, remote mine or scrap fleet. When fleets reach their last waypoint they stop.

ADDING FLEET WAYPOINTS AND TASKS

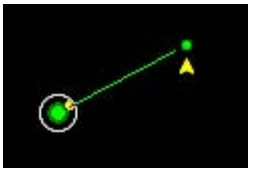
To add a fleet waypoint and a task to accomplish at that waypoint:

1. Select the fleet into the Command pane. Just double-click on its location in the Scanner, or right-click on it and choose the fleet from the pop-up list.

   You can follow a fleet currently at your location by right-clicking on the diamond in the Fleet Waypoints tile and selecting that fleet from the list. This fleet appears as the waypoint.

2. SHIFT-click on the destination waypoint. This can be any planet, fleet or other object or point in space. A green line appears between your current location and the new waypoint.

   Current waypoint

   New waypoint

   Assign an appropriate task from the Waypoint Task tile. If there's no work to be done at that waypoint, choose No Task Here from the dropdown list.

4. Repeat steps 2 through 4 to add more waypoints.

5. If the fleet to continually repeat the entire series of tasks until it is interrupted, and if the final waypoint is the same as the starting waypoint, check **Repeat Orders** in the Waypoint Task tile.

NOTES AND TIPS ON WAYPOINTS AND THE SCANNER

Distance and the Scanner Grid

When you set a waypoint, notice that the Scanner snaps to an invisible grid. The grid snap is one light year, and cannot be redefined. Vertical or horizontal distance is measured in whole years. Diagonal distance between coordinates is a decimal amount slightly larger than one light year. You can disable snapping to objects by holding down the SHIFT key while dragging the cursor.

Selecting One Object from Many at the Same Location

If there are multiple objects at the location, click on the blue diamond in the Fleet Waypoints tile and select the object you wish to make the waypoint.

White Fleet Paths

The fleet path appears in white if two or more legs of the route are identical; for example, if you set a return path along the same route.

Don’t Choose the Same Waypoint Twice in a Row

You can’t add two consecutive waypoints at the same location.

MOVING FLEET WAYPOINTS

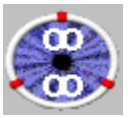
If you want to move a waypoint from one place to another, move the cursor over the point you want to move, and the cursor will change to a hand. Click the mouse and the hand will close. Drag the mouse to the new destination. You will notice that the destination will snap to objects when you get close to them to help you avoid missing a planet. If you want to set a waypoint close to an object, but not at the object, hold down on the SHIFT key while dragging in order to disable the snap-to-object behavior.

DELETING FLEET WAYPOINTS

There are two ways to remove a waypoint:

- Click on the waypoint you want to remove, then press either the Backspace or Delete key.
- Click on the waypoint, then drag it to the next or previous waypoint and release.

STARGATE NAVIGATION

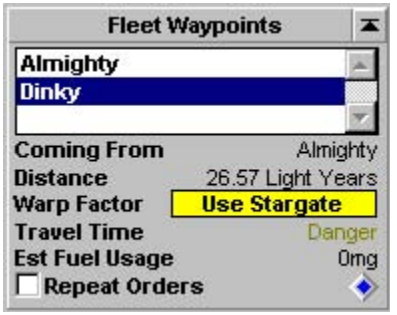


A stargate appears as a dark green dot in orbit.

You must have a stargate at the source planet and at the destination planet. You can navigate using your stargates and Friend's stargates. Stargates have limitations both on the mass they can transfer and the distance the mass is transferred.

To send a fleet through a stargate:

1. If necessary, bring the fleet to the planet with the stargate. Make sure the fleet is carrying only Fuel. For all races except those based on the Interstellar Traveler trait, cargo must be transferred to the planet or to another fleet before using the stargate.
2. SHIFT-click on the destination planet (which much also have a stargate), selecting it as the next waypoint.
3. Click in the Warp Speed gauge, dragging to the end of the gauge. The speed will change to **Use Stargate**. That's it. On the next turn, your fleet will appear at the destination planet, regardless of the distance traveled.



Use the Technology Browser to display statistics for each type of stargate. Just press F2 and select Orbital Devices from the dropdown list.

Stargate Travel Time

1 Year – Travel is safe.

Uncertain – You don't know anything about the planet or your data is old. Your stargate will attempt to make the jump, but there is no guarantee there is a gate at the other end.

Danger — your fleet will take damage in transit. The fleet is exceeding the mass or distance limitation of one or both stargates.

Never – A stargate does not exist at one or both waypoints, or it exceeds by greater than 5X the mass or distance limitation.

Range (how far fleets can jump safely)

Range is determined by the source stargate. To learn the range of a stargate, that belongs to you:

mass limit

range

- Left-click on the Starbase tile, displaying the starbase schematic with the included stargate. The range is the bottom number on the stargate picture.

If the source stargate belongs to a Friend, you'll need to ask them about the range.

You may be able to exceed the normal range by up to five times the distance and still arrive at the other gate. The fleet will, however, always take damage. Keep this in mind, though: Anytime you exceed either the range or mass limit, **there is a chance that the fleet will explode**.

Hull Mass Limitation

Most stargates have a safe hull mass limitation. Only ships that do not exceed the safe mass limitation of both the source and destination stargates will arrive safely. This is determined by the range of the source stargate. If your fleet will exceed this limitation, Travel Time on the Fleet Waypoint tile will read Danger.

To learn the mass limitation of a stargate, that belongs to you:

1. Select the planet into the Command pane.
2. Drag your cursor over the Starbase tile.
3. Left-click on the tile, displaying the starbase schematic with the included

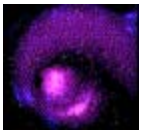
stargate. The mass limit is the top number on the stargate.

If the source stargate belongs to a Friend, you'll need to ask them about the mass limitation.

You can exceed the acceptable mass capacity by up to five times the amount and possibly still arrive at the other gate. Ships will always take damage when you exceed capacity. There is also a chance that the ship will explode.

Learn more about
Stargates, p 6-10
Adding Waypoints, p 11-1
Transferring Cargo, p 14-2

WORMHOLE NAVIGATION



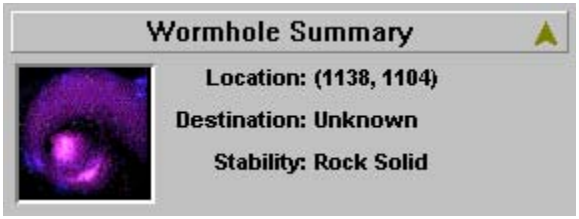
Wormholes are spacial anomalies that appear and disappear at whim. There are several types, some more stable than others. Wormholes offer you free travel across huge distances of space and have no limitations on ship or cargo mass.

Wormholes appear only in deep space, being somewhat repelled by the gravity wells caused by a planet.

Wormhole stability ranges from Rock Solid to Very Unstable. Rock Solid wormholes can stay in one general area for 30 years or more. Very Unstable wormholes tend to move to a different area within about five years.

Each end of the wormhole moves independently. Due to their complex nature, wormholes jiggle a bit every year. Their exact location is always shifting.

- To navigate a wormhole, select it as a waypoint. Your fleet will enter the wormhole as soon as it reaches the opening, and appear at the other end in the same year.
- Click on a wormhole to displays its destination (if known) and stability range in the Selection Summary.



Detecting Wormholes

Similar to a cloaked fleet, a wormhole is hard to see. To normal scanners, a wormhole will be less visible by 75%. Once you discover a wormhole it will no longer be cloaked to you.

12 COLONIZATION

Colonize planets that are immediately habitable by you or that have a negative value but can be terraformed to become habitable. You should colonize as many planets as possible in order to increase the rate at which you gain resources, which you need to build better technology and more fleets. At the same time, don't pull people off your home world so fast that you begin to lose significant resources. Try to find a balance between the planet's growth rate and the rate at which you send colonists off-planet.

CHOOSING PLANETS TO COLONIZE

Planets come in three basic flavors:

Planets you can inhabit immediately. These have a positive value, and appear green in Planet Value view in the scanner. The better the planet, the higher the value, and the larger the green dot. The higher the value, the faster your colony will grow.

Planets that have a negative value but can be terraformed by you . These planets appear yellow in the Planet Value view. The larger the yellow dot, the better the planet will be after you finish terraforming.

Races based on the Claim Adjuster trait terraform automatically as they land.

Planets that will just plain kill you. These have a negative value, and appear red in Planet Value view. The bigger the red dot, the more deadly the planet. You don't have the ability to terraform these planets, although if you can increase your level of terraforming technology you may see that red dot change to yellow.

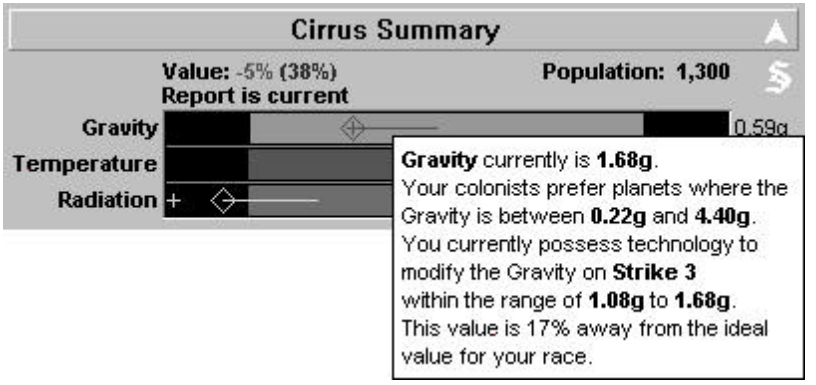
Learn about:
Terraforming, p 6-14

Two items in the Selection Summary pane can also help you determine which planets are good candidates for colonization:

The Habitability Value: Two numbers will appear here if you have the technology to terraform the planet. The first number is the planet's current value. The second number (in parentheses), is the potential value of the planet if it were to be terraformed to the extent your current level of technology allows. If the second number is negative, the planet will just plain kill you.

If you don't see the value in parens, you either can't terraform this planet or the Summary pane has been sized too small for the number to display.

The Environment Graph: Click on each of the three variables displayed in the environment graph. A popup will tell you the potential increase in planet value if you modify that variable to the limit defined by your current level of technology.



COLONIZING AN UNINHABITED PLANET

To colonize an uninhabited planet, you need a fleet containing at least one ship with a colonization module as part of the hull design. Most races start with at least one colonizer. If you don't have any colony ships, add one or more to your production queue.

Learn about:

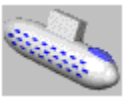
Adding Items to the Production Queue, p 7-2

1. Select the colony fleet, bringing it into the Command pane. You can do this by double-clicking on its location in the Scanner, or, if more than one object (such as a planet) is at the location, right-click and select the fleet from the list.
2. In the Fuel and Cargo tile, click in the **Cargo** gauge and transfer colonists from the planet into the fleet's holds.
3. SHIFT-click in the Scanner on the destination planet.
4. In the Waypoint Task tile, select **Colonize** as a waypoint task.

The colonists will dismantle the colony ship when they land, using any leftover cargo and some of the minerals used in the ship construction to help start the colony.

It's usually a good idea to minimize the number of ships in the colonization fleet. Once the colony is established you can transport additional colonists using a freighter (colonists are unloaded, and the freighter proceeds to its next waypoint).

The colonization module is pictured in the margin. For a better picture, press F2 to open the Technology Browser, then select the Mechanical category. To learn which of your fleets has a colonization module:



Colonization Module

1. Double-click on locations in the Scanner where your ships are present, starting logically with the location from where you will launch the colonizing force. If a planet is also present, right-click on the location and select a ship in the popup list.
2. Right-click in the Fleet Composition tile to display the hull schematic. When a picture of the colonization module appears, you know you've found your fleet.

   Click on **Next** in the Fleet tile to display additional fleets.

SHUTTLING COLONISTS WITH FREIGHTERS

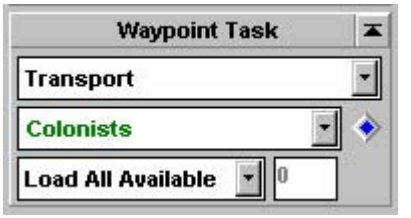
You can use freighters to shuttle colonists to your established colonies. (If you're heading for a planet owned by an opponent, expect a fight, and be sure to carry enough colonists to overwhelm your foe.) Use as many freighters as necessary, setting their orders to unload the colonists as soon as they reach the waypoint.

You can create custom transport zip orders to help automate common load/unload orders.

Learn more about custom orders on page 14-3

Load 'em Up

1. Select your transport fleet, bringing it into the Command pane.
2. SHIFT click in the Scanner on the planet (or fleet) from which you will load colonists.
2. In the Waypoints Task tile specify Transport as the action and Colonists as the cargo, then specify the amount you wish to load.



Head 'em Out

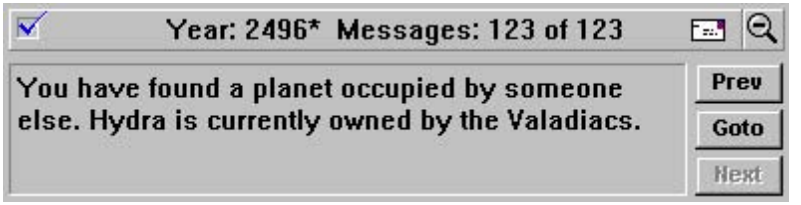
1. SHIFT-click in the Scanner on the destination colony or colonies.
2. For each waypoint where you wish to unload colonists, specify Transport as the action and Colonists as the cargo, then specify the amount you wish to unload.

   Be sure not to unload more colonists than the planet can support.

Transporting Alternate Reality Colonists

Alternate Reality races can take damage while traveling in space. Interstellar travel kills 3% of any colonists in the fleet per year.

HEY, THAT PLANET'S ALREADY INHABITED!



You can't colonize a planet already inhabited by another race. If you transfer the colonists using Transport orders, you'll automatically initiate ground combat with the current inhabitants. At this point your colonists become ground troops. If more than one player lands ground troops on the planet during the same year/turn, everyone will fight until only one side is left.

You cannot invade any planet that has a starbase in orbit. This means you'll need to destroy any starbase with your war armada before you can beam down.

Alternate Reality Races and Invasion

Since Alternate Reality races inhabit starbases and not planets, destroying their starbase makes the planet open for colonization. Alternate Reality races also cannot transfer troops down to other player's worlds.

13 MINING

Most of a planet's minerals lay under the surface, unavailable for use until your colonists mine them. You can build mines on your own worlds, or use robot miners to mine uninhabited worlds.

The mineral content and concentrations for a planet are shown in the Selection Summary pane and the Minerals on Hand tile. The number of mines that have been built and can be operated appear in the Minerals on Hand tile.

MINING COLONIZED WORLDS

To build a mine, just add it to the production queue. You can do this manually or by using the auto-build feature of the Production dialog. These mines will be built, and the minerals within will be mined and made available immediately to the locals.

Alternate Reality

Since Alternate Reality races live on starbases and can only perform a small amount of innate mining, they always remote mine their own worlds.

To build mines:

1. Shift-click in the Scanner on the planet where you will build mines.
2. In the Production tile, click on **Change**.
3. In the Production dialog, **Add** either Mine or *Mines (Auto-build)*.

Learn about:

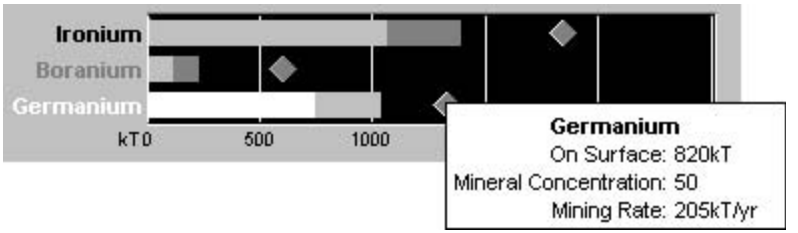
Adding Items to the Queue, p 7-2

Auto Build, p 7-9

To determine how much more of a mineral a new mine will produce:

1. Use the **View**(**Race...**) menu item, then turn to page 5 of the dialog and see how efficient your race is at building and using mines and factories. **Cancel** when you've finished.

2. Look at the mineral concentration information in the Selection Summary pane and the Minerals on Hand tile. Click on the mineral name or value in either of these locations to display information on the density of each mineral under the surface.



3. Calculate productivity using this formula:

   potential productivity, mineral concentration = actual productivity

   For example, you learn from the View Race dialog that 10 mines produce up to 10 kT per year, and from the Mineral Content graph in the Selection Summary that Germanium concentration is 50. This means 100 mines will produce 50 kT of Germanium in the next year. In this case, you would have to add two mines for every additional kT of Germanium you want each year.

CALCULATING THE RATE OF DECREASE IN MINERAL CONCENTRATION

The decrease in mineral concentration is related solely to the number of mines operating on a planet and the number of years the mines have been in operation. For two players with the same number of mines operating over the same number of years, the decrease in concentration will be the same for each.

Think about it in terms of Mine years: One Mine year means the operation of one mine on a planet in a year. If you are operating 50 mines per year on a planet, that equates to 50 Mine years.

To calculate approximately how many Mine years must pass to reduce a mineral's concentration by one, divide 12,500 by the current mineral concentration.

Read more about Minerals, p 6-4

MINERAL CONCENTRATION AND MINING EFFICIENCY

The rate at which mineral concentration is reduced is not related to how efficient a player is at mining. When the concentration reaches 1 both on your planet and an opponent's planet, the player who has more mines but is less efficient at mining can extract as many kTs as a very efficient player operating fewer mines.

To learn how many colonists you need to operate a mine and how efficient the mine is at extraction, choose the **View** (**Race**) menu item, and turn to page 5 of the View Race dialog.

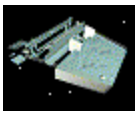
REMOTE MINING

Remote mining is the use of robot miners to remove minerals from uninhabited planets for transfer to your needy, inhabited worlds. You can only perform remote mining on uninhabited worlds, using mining ships that carry robot mining modules. You need to research the technology to create both the hulls and the modules, then design the ships using a miner hull. Place mining modules in the Mining slots when you design the hull. When you're ready to mine, add Mining ships to your production queue.

Alternate Reality Races and Mining
Alternate Reality races mine their own planets using remote mining technology. Read more about the Alternators in chapter 22.

Remote mining fleets actively engaged in mining report annually on the planet's environment and mineral situation. These ships do not need scanners, unless you want them to be able to detect enemy fleets as well.

Creating a Robot Mining Fleet



A robot mining ship can't carry much fuel, which means it won't go far by itself unless it's outfitted with a ramscoop engine. To assemble and launch a robot mining fleet:

Use the Technology Browser to learn the research and production requirements for remote miners: look in the Hulls category for the miner hulls, and in the Mining Robots category for the modules.

1. If your mining ships don't have ramscoop engines, merge them into a fleet with at least one freighter. The freighter typically will be able to carry enough fuel for the fleet to reach its destination.
2. Assign the planet to be mined as the waypoint, with orders to carry out remote mining.
3. When the fleet reaches the planet to be mined, split the miners and freighters back into separate fleets.
4. Select the freighter fleet and assign a circuitous route with waypoints at the planet(s) to receive the minerals, ending with the mining fleet as the last waypoint. At the mining fleet waypoint assign a transport order that

Learn about Splitting and Merging Fleets, p 10-9

causes the minerals to be loaded from the miner to the freighter in the most optimum way possible.

When you set the mining fleet as the waypoint instead of the planet the mining fleet is orbiting, the freighter will automatically follow the mining fleet wherever you send it.

Joint Ventures in Remote Mining

You can join with other players to remote mine a planet, each player using their own remote mining fleet and freighters or, since minerals can be transferred between different players fleets and planets, one player may mine then manually transfer the minerals to the other player's holds for transports to the agreed upon ports-o-call.

Any Super Stealth race can automate transferring cargo from another player's mining fleet as a waypoint task—if the other player agrees, it's diplomacy; otherwise, it's piracy.

14 TRANSPORTING FREIGHT

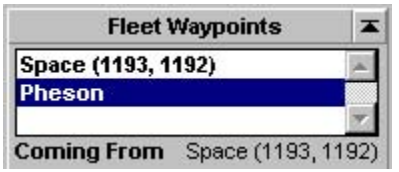
You can transport minerals, fuel and colonists from waypoint to waypoint. These waypoints can be either planets or fleets. Freight is either carried in ships that have cargo holds or cargo pods, or flung across space using mass drivers.

For a description of different cargo modules and mass drivers, refer to the Technology Browser.

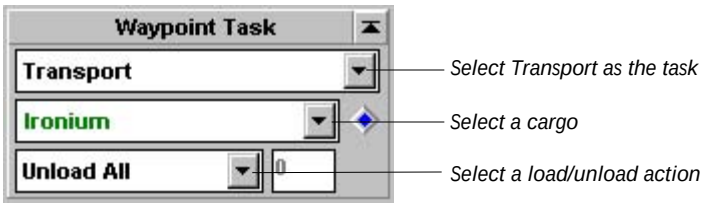
SHIPPING FREIGHT

To get the transport process started:

1. Select the fleet that will carry the cargo.
2. Add a waypoint or series of waypoints in the Scanner pane.
3. In the Fleet Waypoints tile, select the waypoint where you want to load or unload cargo.



4. In the Waypoint Task tile, specify the Transport orders:



Repeat this process for each waypoint where you'll load or unload freight.

Tip: Races with the Ultimate Recycling trait may find that it is economical to build ships from the desired minerals and just scrap them at their destination.

Zip Orders

You can also use Zip Orders to speed things up a bit. Just right-click on the blue diamond in the Waypoint Task tile and select one of the sets of orders listed. Left-click on the diamond for a description of the pre-defined orders. You can also create your own custom Zip Orders.

Repeat Orders

If you want to set up the fleet to endlessly follow a route until you specify otherwise, check the **Repeat Orders** box in the Fleet Waypoints tile. If you want the fleet to return to its planet of origin as part of the route, be sure to specify that planet again as a waypoint.

For a description of each Transport order, read about the Transport task on page 5-7.

Remember that you can specify another fleet as a waypoint. For example, if you want to set up a route between a remote mining fleet and one of your mineral-needy production planets, specify the mining fleet as the first waypoint and the production planet as the second waypoint. At the first waypoint, the mining fleet, set Transport orders for each mineral you plan to load, specifying QuikLoad using the Zip Orders diamond. At the second waypoint, specify the QuikDrop Transport Zip Order for each type mineral you load from the miner.

If you want to set up regular transport routes and you're playing a large universe, consider using fleet routing to send your ships from planet to planet.

Learn about Routing Fleets, p 10-7

TRANSFERRING FUEL AND CARGO TO OTHER FLEETS

Fuel and minerals can be transferred between fleets. These fleets can belong to you or an opponent. Once given, the fuel or cargo cannot be taken back. This opens up possibilities for trade (as part of a diplomatic strategy).

Fuel and minerals can also be transferred from any player's fleet to any player's planet. However, if one player attempts to transfer colonists to another player's planet (regardless of their relationship), that's called an invasion, and dealt with in the expected manner.

Transfer cargo using one of the cargo transfer dialogs. These are accessible from several tiles in the Command pane.

JETTISONING CARGO

As indicated by the Location tile above, you must be in deep space to jettison cargo. Jettison if you don't have enough fuel, must reach your destination or make a fast getaway, and can't wait for another ship to reach you with fuel.

Transferring cargo to an opponent's ship or a planet you don't own effectively does the same thing: you lose the cargo. Jettisoned cargo is lost to the cosmos.

You cannot jettison cargo if there is salvage at the same location.

CREATING A CUSTOM TRANSPORT ZIP ORDER

A Zip Order is a common Transport order you wish to specify many times in a game, just by selecting the Zip Order name. Stars! provides four pre-defined Zip Orders (including Clear). You can't change the pre-defined orders, but you can add up to four custom zip orders.

Once you create a Custom Zip Order, it becomes available in all your games until you delete it. Here's how to create one:

1. Specify the Transport order in the Waypoint Task tile.
2. Set up the order you wish to add to the Zip Order list by selecting the appropriate cargo items and operations.
3. Right-click on the blue diamond in the Waypoint Task tile.
4. Select **<Customize>** from the pop-up menu. The Custom Zip Orders dialog appears.
5. Select a Custom Order slot in the dialog.
6. Click on **Import**. This copies in the current transport orders from the Waypoint Task tile. The Rename Zip Order dialog appears.

7. Type the name, and **OK** the dialog. The new order appears in the Custom Order dialog.
8. **OK** the Custom Order dialog.
9. Right-click on the blue diamond again. Your custom Zip Order appears in the pop-up.

Editing a Custom Zip Order

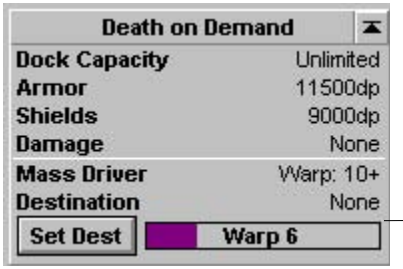
- Repeat steps 1 - 5 above, and in step 5, select the order you wish to modify.
- Click on **Import** and **OK** the Rename Zip Order dialog.

FLINGING MINERAL PACKETS

Flinging a mineral packet is a two step process:

Step 1: Target the Mass Driver

This must be done before you build the packets, or the packets will disintegrate. Of course, you must also have a mass driver on the planet's starbase.



Mass driver information and controls

1. Click on the **Set Dest** button on the Starbase tile.
2. Select a target by left-clicking on the destination planet in the Scanner. The Scanner displays the path as a purple line.
3. Accept the default packet speed or click in the mass driver's warp gauge to set a new speed.

Tip: You can also target a Mass Driver by SHIFT-clicking on the destination planet while the source planet is in the Command pane.

Slower speeds allow you to fling packets to planets with lesser mass drivers (meaning you want the planet to catch the packet). Packets flung above the rated speed are unstable but get there quicker and do more damage.

For the packet to arrive safely, the target must also have a driver of equal or greater capacity. If the planet has a lesser mass driver, or no driver at all, the packet will destroy some or all of the colonists and installations on the planet surface. On both inhabited and uninhabited planets, 2/3 of the minerals in the packet will be lost in the collision.

Interstellar Travelers
Races based on the Interstellar Traveler trait are less adept at building and using mass drivers than other races. Their mass drivers are only half as effective at catching minerals as rated. They are less efficient at flinging minerals and all mineral packets flung decay, regardless of speed.

Step 2: Build and Fling the Packets

You build packets using the Production dialog. The packets are automatically flung as soon as they're built.

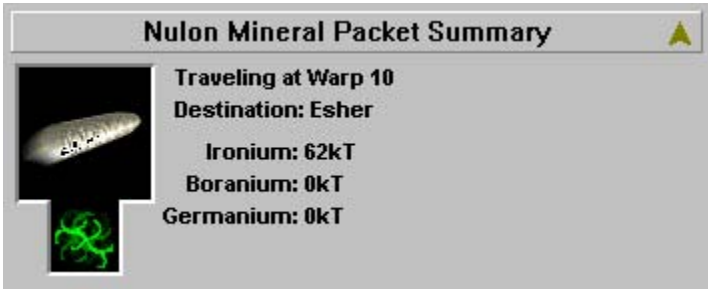
1. Click on **Change** in the Production tile, opening the Production dialog.
2. Look at the production inventory. It contains a packet type for each mineral and a mixed packet that contains all three minerals. When you click on a packet type in the inventory the numbers below the inventory show how many kT of each mineral is required to build the packet. The inventory will also include an auto-build item for sending mineral packets.
3. Select the packets you want to build, then **Add** them to the queue. Your planet will build and fling packets until you remove the item from the queue.

The Messages pane informs you each time a packet is sent. Mineral packets in scanner range appear in the Scanner as a green square if they belong to you or a red square if they belong to an opponent.

You can't attack mineral packets. You can intercept them and use the Other Fleets Here tile to transfer their contents to your fleet.

Displaying any Packet's Destination

When you click on any mineral packet in the Scanner, its destination (and contents) is displayed in the Summary pane.



Packet Physics

Races with the Packet Physics trait always detect any mineral packet in flight, regardless of the packet's location in the universe.

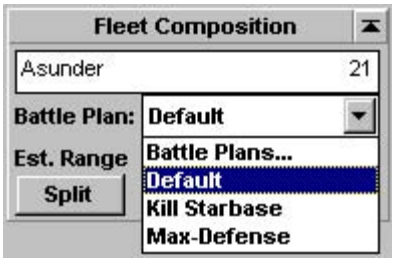
15 THE BASICS OF COMBAT

Here's how to create and specify battle plans, initiate all types of combat, and watch a replay of a battle in space. In general, all you need to know about the outcome of a battle is described in the message you receive. If you lose a battle and don't know why or just want to compare your tactics to those of your enemies you can watch a replay of the battle in the battle VCR.

FLEET-TO-FLEET COMBAT

To attack an opponent's fleet:

1. Choose your fleet's battle plan, or view, change or create a battle plan using the dropdown list in the Fleet Composition tile.

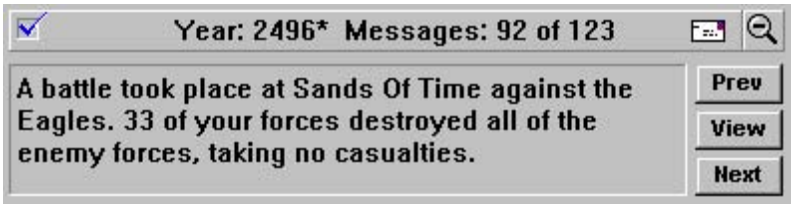


2. Set a waypoint at the enemy fleet. If the enemy fleet is in orbit of a planet, you may want to explicitly target the fleet so you'll chase it if it leaves the planet. In this case, just right-click on the blue diamond in the Fleet Waypoints tile and choose the enemy fleet from the list that displays.

Your fleet will either reach the enemy and engage them, or, if you're tackling another fleet, you'll chase them until you break off pursuit. If you do attack, you receive a message the following year describing the outcome of the battle. If you lose track of the enemy you'll receive a message saying that your fleet's waypoint has been set to their last known location.

The outcome is determined by the battle plans and ship components used by you and your opponent(s).

When you receive a message about a battle pressing the **Goto** button will select the location of the battle in the Scanner pane, and the button text will change to **View**.



Pressing **View** allows you to review the battle, helping you learn how the enemy attacks, and how your attack was successful or failed.

To learn about specific weapons, armor, shields and engines, study the Technology Browser (press F2). To learn how to research and design your offensive technology, read chapter 8 on research, then read chapter 9 on Ship and Starbase Design.

Battle Orders don't Interfere with Waypoint Tasks

By default, new armed fleets start out with attack orders. Since these orders are always in effect, your armed fleets can also be assigned any waypoint task suitable for that fleet.

Firing in Passing

If a ship moves in the direction of its primary target but is still out of range, it will try and fire on any target within range. The primary target is specified in the Battle Plans dialog.

Salvage from Space Battles

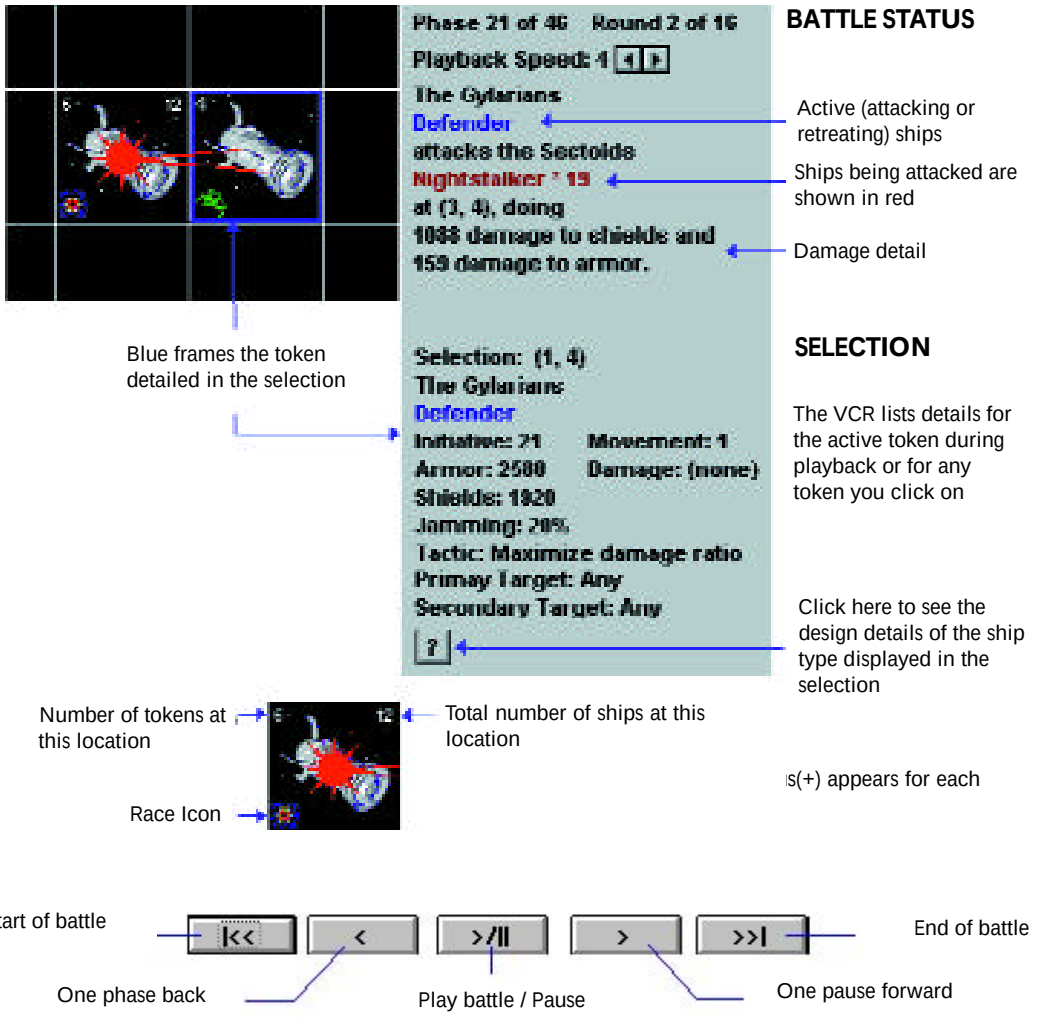
Ships destroyed in battle or by minefields leave salvage. Cargo is dumped in space as a mineral packet or, if the battle took place in orbit, the cargo falls to the surface of the planet. Players who survive a battle against technologically superior ships have up to a 50% chance of automatically advancing one level in one field of technology. The technology bonus is based on sensor readings rather than salvage. In order to recover the minerals from a salvage packet for use in production:

1. Set the salvage packet as a waypoint (if you aren't there already).
2. When you arrive, choose the packets from the dropdown list in the Other Fleets Here tile
3. Click on the **Cargo** button, then transfer the minerals in the packets to your cargo holds.

Reviewing a Space Battle

After a while you will find that there is no need to view most battles. There are times, however, when you were sure that you had overwhelming forces and still got your rear kicked. That's where the Battle VCR comes in to play. It is a great place to learn about the characteristics of your opponents' fleets and to determine your opponents' battle strategy.

On the turn following a battle, you receive a message summarizing the event. Click the Message pane's **Goto** button, replacing Goto with **View**. Click on **View** to open the VCR.



You can also open the VCR from the Battle Summary report. Just double click on a row in the report.


Battle Summary Report -- 16 Battles

Location	SB	Sides	Units	Ours	Theirs	Unarmed
Ziggurat	T	2	8	2	6	
Uranus	T	2	13	3	10	
Space (1473, 1646)				15	1	
Spa						

Use the **Reports** (**Battle**) menu item to open the Battle Summary report. This report summarizes all battles that took place the previous turn.

BOMBING PLANETS

Bombing happens automatically. All you need to do is send your bomber fleet to the enemy planet. If the planet does not have a starbase, the fleet begins to bomb on arrival. (If the planet has a starbase, you'll have to destroy it before you can commence bombing.)

For information on bomb types and damage, take a peek at the Bombs category of the Technology Browser. To learn how to research bomber and bomb technology, read about how to perform research in chapter 8. To learn how to design and build bombers, read about Ship and Starbase design in chapter 9.

You specify the type of bombs a particular bomber design carries when you design the ship. Your bombers have an infinite number of bombs, allowing your fleet to bomb forever without resupplying. When you design the bomber hull, the number of bombs you place in each bomb slot is the number dropped on that planet per year.

Enemy Population Count During Bombing

You may notice that the enemy population reduction doesn't always match your calculations when bombing. For example, the Summary pane reports that the population is 400,000. You receive a report saying your bombs destroyed 65,000 colonists. Now the Summary pane says the population is 410,000. What gives?

The population report of an opponent's world is always an estimate. The number shown is +/- 20% of the actual value. Since you aren't on the surface, you won't be able to take an accurate count — until the count is zero.

Special Bombs

Claim Adjuster races can learn to build the Retro bomb, a type of terraforming weapon used to return the planet to its original conditions.

Retro Bomb

Smart Bombs destroy colonists, but not Mines or Factories. They are twice as effective as other bombs at penetrating planetary defenses.

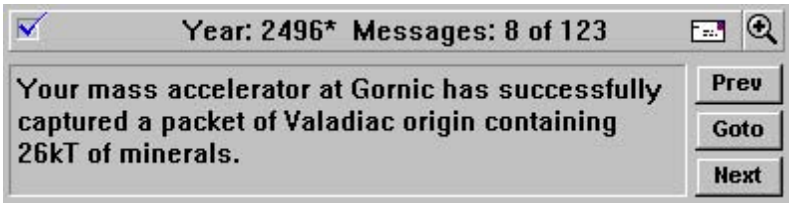
Smart Bomb

MINERAL PACKET BOMBARDMENT

If your starbase has a mass driver, you can fling mineral packets against planets with no mass driver or a lesser mass driver. This will destroy colonists and installations, and is cheaper than building and sending bombers (as long as you can afford to throw away the minerals). A warp 13 mineral packet is as close as Stars! comes to having a doomsday weapon.

You can defend against this type of attack by building a mass driver to catch the packets. If the sending driver is more powerful, you'll at least slow the packets down and reduce the damage. The next best thing is to have good planetary defenses. If you're fast enough you may be able to intercept the packets in flight (assuming it will take the packet more than one year to reach its destination) and transfer their load into your cargo holds.

Defenses are described in the Planetary section of the Technology Browser.



You receive a warning message if your scanners can spot incoming packets before they arrive.

Read more about:

Mass Driver Basics, p 6-11, and Guts, p 25-1

Flinging Mineral Packets, p 6-12

GROUND COMBAT

To invade another player's planet and initiate ground combat:

1. Build a fleet with one or more freighters.
2. In the Waypoint Task tile, use the Transport task to load colonists onto the fleet. Try to load what you think will be an overwhelming number.
3. Set a waypoint to your opponent's planet.
4. Use the Transport task to drop all colonists at the new waypoint.

If the planet has a starbase, you'll have to destroy it before you can transfer your troops to the surface.

You'll lose some of your colonist troops when you transport them through the planetary defenses. Planetary defenses are 75% effective against enemy colonist drops. Your troops that make it to the surface and your opponent's colonists fight until only one side remains. Capturing a planet in this way allows you to keep any surviving mines and factories.

If everyone is killed, the planet is up for grabs to the first player who colonizes it. Such planets must be recolonized using a colonization fleet.

If the planet is not habitable by your colonists, have the fleet load all of your colonists the next year. This prevents you from losing colonists to the elements.

You cannot invade any planet that has a starbase in orbit. This means you'll need to destroy any starbase with your battle ships before you can beam down.

Alternate Reality Races and Invasion

Since Alternate Reality races inhabit starbases and not planets, destroying their starbase makes the planet open for colonization. Alternate Reality races also cannot transfer troops onto other player's worlds.

Tip: If you plan to use ground combat extensively, consider creating a race with the War Monger trait before you start the game.

MINEFIELDS

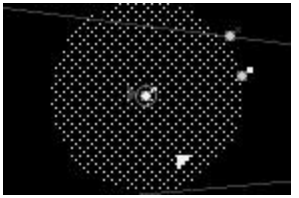
You can string minefields around your planet or anywhere else in the universe. Minefields are typically a defensive strategy. If you have the Space Demolition trait you can also remotely detonate minefields, turning them into a last-ditch offensive weapon.

Only ships that carry mine layers can lay minefields.

Players Affected by Minefields

Mines are not set off by fleets belonging to you or your friends. Only neutral and enemy fleets will have trouble navigating the your minefields.

Minefields in the Scanner



To view minefields, use the Scanner pane's Mine Fields overlay. Minefields are displayed in the Scanner as circular grids: blue for your minefields, yellow for races you've declared as friends, red for neutrals and your enemies. Only those minefields within scanner range will appear. A minefield will be 75% cloaked if you haven't seen it before or if you are using only a non-penetrating scanner.

Minefields as Scanners

Minefields act as normal scanners for players with the Space Demolition trait. These scanners do not detect fleets orbiting planets.

Laying Minefields

Only a ship with a mine layer can lay minefields. You'll need to research Energy and Biotechnology for mines that explode, and Propulsion and Biology for Speed Trap mines. Once you've gained the technology, use the ship designer to add mine layers to a ship hull. Build the ship and you're ready to go.

Mine layers are described in the Mine Layers section of the Technology Browser.

To lay a minefield:

1. Double click on the fleet in the Scanner, bringing it into the Command pane.
2. In the Scanner, click once on the waypoint where you will lay the mines. This can be a planet or point in space.
3. In the Waypoint Task tile, click on the dropdown and select **Lay Mine Fields**.
4. Specify the number of years to lay mines.

The Waypoint task tile notes how many mines that fleet can lay per year. Stars! supports laying up to 1,000,000 mines in a field, at a rate of more than 32,000 mines a year.

Learn how to:

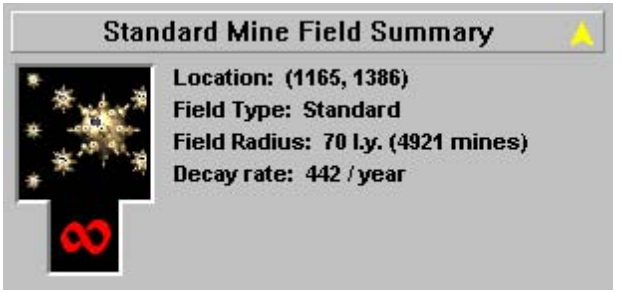
Design Ships, p 9-1

Select an Object to Command, p 5-10

Add a Waypoint and Task, p 11-1

Minefield Coverage

Use the Scanner's Mine Fields overlay to show the area of space covered by the field. Click on the field to display the mine type, field size, decay rate, and owner in the Selection Summary pane.



Minefield Decay

Minefields decay at a rate of 1% a year. You should plan to replenish the fields as needed. (If enemy or neutral ships thin them out, you'll need to rebuild as well.) Minefields decay an additional 4% a year for each planet they contain. The maximum decay rate for a minefield is 50%.

If you have the Space Demolition trait, your minefields will decay at a rate of only 1% a year.

Sweeping Minefields

Ships and Starbases with beam weapons can sweep minefields. You can only sweep minefields belonging to Neutrals and Enemies. Sweeping minefields happens automatically. If you're flying through a neutral or enemy minefield and your fleet carries beam weapons with a range of 1 or greater, you'll start clearing a path. If an opponent builds a minefield around your planet and your starbase has beam weapons, the starbase will start clearing space to the limits of its weapons.

Sweeping mines happens before movement, so a fleet in a minefield sweeps mines the year it moves out of the field.

- To display minefields you know about, turn on the Scanner pane's Mine Fields overlay.
- To determine how many mines a beam weapon can sweep each year, Start by calculating:

beam_weapon_power * weapon_range_squared

Cloaks and Minefields

Cloaks do not protect ships from mines. You can cloak your mine sweepers if you wish to disguise minesweeping activity for as long as possible.


Mine Fields overlay tool

Do this for all beams in the fleet, then add all the answers. The sum will be the number of mines you'll sweep each year. If the fleet is in more than one minefield, it sweeps this number simultaneously from each minefield

Speed trap mines are swept at only 1/3 the normal rate.

Range zero and shield only weapons can not sweep mines at all. Gattling weapons are more effective at sweeping minefields. Consult the Technology Browser to learn the exact level of effectiveness of any particular weapon.

To learn the mine sweeping effectiveness of a beam weapon, see the Weapons section of the Technology Browser.

Remotely Detonating Minefields

You must be playing a Space Demolition race to remotely detonate your minefields. You can detonate only minefields made of Standard Mines. Once set to blow, one quarter of the mines in the field will detonate at the *end* of each subsequent turn.

To remotely detonate a minefield:

1. Select the minefield in the scanner. If more than one object is present, right-click on the field and select it from the popup list.

   A summary of the field appears in the Selection Summary pane.

2. Check **Detonate Mine Field Next Year** in the Summary pane.

All ships in the field take damage as if they hit a mine. To stop the minefield(s) from continuing to detonate, just uncheck the Detonate... box on your next turn.

STARBASE COMBAT

Starbases take part in combat. They don't move but have an initiative of 10 to 18.

A planet cannot be bombed or invaded if it is orbited by a starbase. A starbase can be designated as the primary target using the Battle Plans dialog. It can be selected as the only primary target, and is also included when you select Armed Ships as a primary target.

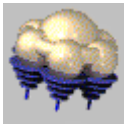
To learn about intitiative, read chapter 23, The Guts of Combat.

All weapons on a starbase receive a range bonus of +1.

CLAIM ADJUSTERS AND TERRAFORMING AS A WEAPON

Races based on the Claim Adjuster trait can perform negative terraforming on an enemy's planet while in orbit. If the planet has a starbase, you must destroy it before you can begin this type of attack.

Orbital Terraforming


Orbital Adjuster

Terraforming from orbit requires a fleet outfitted with Orbital Adjusters. These are described in the Mining Robots section of the Technology Browser. Every race with the Claim Adjuster trait starts out with one ship outfitted with Orbital Adjusters.

Terraforming from orbit can also be used as a weapon: just orbit the planet and start to terraform it under your opponent's feet. This allows you to prepare more favorable conditions for a planetary invasion. Depending on your opponent's level of terraforming technology, using terraforming as an attack could turn into a shoving match if they begin terraforming operations of their own.

Terraforming from orbit happens automatically as soon as your fleet arrives. Just set the destination planet as the fleet waypoint. No waypoint task is necessary. Your fleets will automatically perform negative terraforming for Enemies and positive terraforming for friends.

Retro Bomb

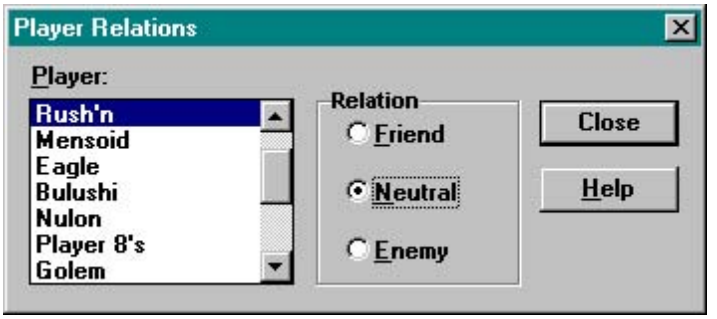

Retro Bomb

Claim Adjusters also can gain the Retro bomb, a type of terraforming weapon used to return the planet to its original conditions. This is useful if you know your opponent has been working hard to change the habitability value of the planet, and especially if the original planetary environment was more suitable for your race than the current environment.

DECLARING ENEMIES AND FRIENDS

In a single player game, everyone is your enemy. In a multi-player game, you designate who you do and do not wish to attack.

- Select **Player Relations** from the **Commands** menu to specify your enemies, your friends, and races you have no feelings for whatsoever (neutral).



When you give a fleet attack orders you can choose who to attack: all enemies, all neutrals and enemies, everybody or a just a specific opponent.

Friends are also immune to your minefields, automatically refuel at your starbases and are allowed to use your stargates.

Fleets with the waypoint task of Patrol will only attack Enemies.

Unwilling Participants and Innocent Bystanders

If you declare another player to be your friend you may be unexpectedly drawn into battles. If a friend of yours is attacked and you have a fleet at the same location your fleet will automatically join the battle even if it does not have attack orders. Yegads.

If both players are your friends, you can sit on the sidelines and watch or be on your merry way.

BATTLE PLANS

Battle plans specify the behavior of your ships in a confrontation. When you specify attack orders, you choose a battle plan that defines the attack and defense.

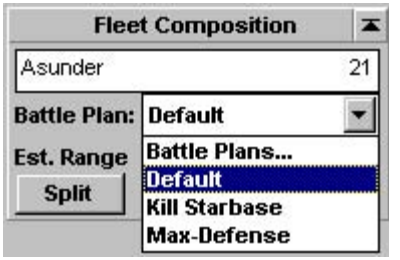
- Modify or delete an existing plan, or create a new plan, using the **Commands** (**Battle Plans**) menu item.

Stars! provides several pre-defined battle plans to help you start. To learn the contents of a plan, select it from the list in the Battle Plans dialog. Then look at the options chosen for target, tactics, and, if you're in a multi-player game, the victim. You can modify, rename or delete an existing plan, or copy it and use it as the basis for a new plan.

Unmodified Default battle plan. Read further in this chapter for an explanation of each field in the plan.

All new ships start out with the Default battle plan. This plan sets up a default attack strategy if the fleet is armed, and a default flight strategy is the fleet is unarmed. You can't rename or delete the Default plan, but you can modify it.

Battle plans for a fleet are selected in the Fleet Composition tile, and are in effect regardless of the fleet's waypoint task. Select Battle Plans... from the dropdown list to enter the Battle Plans dialog.



Targeting

For each attacking token, or group of ships of the same design in a fleet, and each round of battle, Stars! tries to pick the right target from all the other tokens in the battle. Each potential target is compared with the primary target type; for example; Any, Starbase, or Armed Ships. If no target is found, Stars! looks for targets matching the secondary target type, attacking the first matching target found. If no target is found, the attacking token disengages.

Cloaked fleets are targeted the same as all other fleets.

Possible targets are:

- None/Disengage — Don't look for a target, just attempt to disengage..
- Any — Target any opponent's fleet you encounter.
- Starbase — Target the opponent's starbase whether it is armed or not.
- Bombers/Freighters — Target Bombers and Freighters only..
- Armed Ships — Target any ship or starbase carrying weapons (does not include bombers). Preference is given to the strongest tokens this token is likely to damage.

Round of Battle

Battles last up to 16 rounds. One round of battle is each token getting a chance to move and fire. A round is broken into phases, where one phase is a single token moving or firing.

- Unarmed Ships — Target any ship not carrying weapons or bombs..
- Fuel Transports — Target Fuel Transports only..
- Freighters — Target Unarmed Freighters only..

Here are a few examples of targeting:

Primary target: Bombers/Freighters; Secondary target: Fuel Transports
Any enemy bombers and freighters are targeted first. Once they are gone, the attacker looks for and tries to destroy enemy Fuel Transports. This tactic is useful for crippling enemy battle groups while attempting to avoid their heavy guns.

Primary target: Armed Ships; Secondary target: None/Disengage
This would try to take out all enemy armed ships and the armed enemy starbase, leaving unarmed ships alone. This is useful if you plan on stealing cargo from the unarmed ships (assuming you survive).

Primary target: Armed Ships; Secondary target: Bombers/Freighters
This ignores anything that isn't armed, or a bomber or freighter. This prevents you from wasting shots on harmless ships.

Make sure your battle plan reflects what you really want your ships to do. For example, if you specify a target of Any and the closest ship happens to be an unarmed freighter instead of the enemy's battleships, you will waste a round destroying an easy target while the opponent's battleships pound you into space dust. In this case, choosing a target of Armed Ships would be much more appropriate.

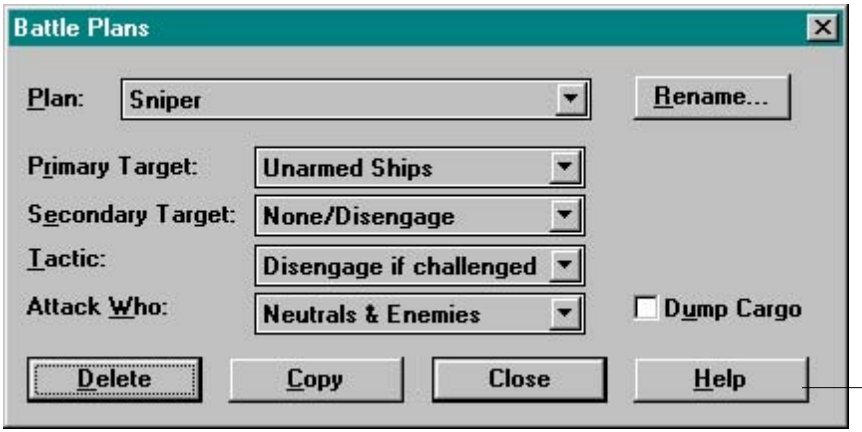
Starbases and Targeting

Starbases use a primary target of Armed Ships and a secondary target of Any.

Battle Tactics

A fleet's battle plan lists a tactic for each general target type: Any, Armed Ships, Starbase, etc. Tactics fall into three styles: disengage, minimize personal damage, and maximize opponent damage. Each tactic determines how much damage each token, or group of ships of the same design, will attempt to both inflict and expose itself to.

In all cases except Disengage the token will attempt to get closer to the target if it is currently outside maximum range. If the token runs out of primary and secondary targets it will automatically switch to Disengage. If a token can no longer do any damage it will automatically Disengage. For example if the attacking token has shield buster weapons only and none of the enemy tokens have shields, the attacker will disengage.



Example use of Disengage in targeting and as a tactic.

Choose tactics to use on primary and secondary targets. A tactic applies to the entire fleet.

- Disengage — Attempt to run away as soon as possible. Seven squares of movement on the battle board are required to leave the battle. As movement ranges from ½ square to 2 ½ squares per round it can take from 3 to 14 rounds to disengage.
- Disengage if challenged – Behaves like Maximize damage until the token takes damage and then it behaves like Disengage.
- Minimize damage to self – Attempt to move to the location from which this token can do the most damage to its target while taking the least damage from your enemies.
- Maximize net damage – Attempt to get in range of the target class with all of your ship's weapons, then move in such a way as to always do some damage while maximizing damage_done/damage_taken.
- Maximize damage ratio – Attempts to get in range of at least one ship of the target class and move in such a way as to do some damage while maximizing damage_done/damage_taken.
- Maximize damage – Attempts to get in range of at least one ship of the target class with all your ships weapons, then tries to maximize the damage done. This tactic does not care about damage taken.
- Dump Cargo - Jettison cargo at the start of battle.

The field of battle is divided up into squares. To see the size and layout of this battle board, view your next battle in the VCR.

Maximize Damage Ratio will not necessarily close to what may be considered the best location for you ship's weapons if it is carrying both short and long range weapons. For example, if you design a cruiser that carries range 6 missiles and a range 2 beam weapon, odds are that you will never get closer than range 6 in the battle. This is an advantage if when you want to use the short range weapons strictly as a deterrent against fast ships that try to get in close and destroy you with their short range weapons. If you do want to get closer and bring all weapons to bear, use Maximize Net Damage or Maximize Damage tactics.

Making a New Battle Plan

1. Choose the **Commands** (**Battle Plan**) menu item or choose **Battle Plans...** from the Fleet Composition tile.
2. Select an existing battle plan from the **Plan** dropdown.
3. Click on the **Copy** button to copy an existing plan. If the list is full (14 plans), select an existing plan you are willing to replace.
4. In the **Primary Target** dropdown, select a primary target for the fleet to attack.
5. Select a **Secondary Target**.
6. Select a **Tactic**.
7. In a multi-player game you can choose **Who to attack**. In games with only AI opponents all other players are your enemies.
7. Choose **Dump Cargo** to jettison cargo at the start of battle.
8. Click on the **Rename** button and type in a new name.
9. Click on **OK**. The new plan will appear in the Waypoint Tasks tile the next time you choose an Attack task.

Changing the Contents of a Battle Plan

You may find that your battle plans need fine tuning over time. Here's how to change one:

1. In the Battle Plans dialog, select an existing battle plan from the **Plan** dropdown.
2. Click in the **Primary Target** dropdown and select a target type.

3. Choose a **Secondary Target** for your ship to attack if the primary target type is not present.
4. Choose a **Tactic**.
5. In a multi-player game you can choose **Who** to attack.
6. When you finish, **OK** the dialog. Your changes take affect that turn.

BATTLE REPORT

Use this report to view statistics for each battle that took place the previous turn, and to review the battles in the VCR. Each line in the report summarizes one battle that occurred the previous year.

- Go to the battle's location in the scanner by clicking once on its line in the report.
- To review the battle in the VCR and learn the gory details, double-click on its line in the report.

For each battle, the report shows the following:

Location – Coordinates or planet name where the battle took place

SB – Starbase involved (O = ours, T = theirs),

Sides – number of players that fought

Units – the total number ships involved, including any starbase

Ours – total number of our ships involved, including any starbase

Theirs – total number of their ships involved, including any starbase

Unarmed, Scout, Warship, Bomber, Utility – total number of each ship of this class involved in the battle.

Our Dead – total number of our ships that were destroyed

Their Dead – total number of their ships that were destroyed

VIEWING OPPONENT FLEETS IN THE SUMMARY PANE

To learn about an opponent's fleet:

- If your opponent's fleet is in space, left-click on the fleet symbol. If there is more than one fleet at the location, right-click and select the enemy from the popup list.
- If your opponent's fleet is orbiting a planet, right-click on the planet, then select the fleet from the popup list.

The most significant type of ship in the fleet is pictured in the Summary pane. A + sign appears for each additional ship type in the fleet. Display the fleet's composition by left-clicking on the picture. Right click on the picture to display the design for each ship type.

Unarmed ships are any design that has no weapons and poses no threat. Utility ships are unarmed ships that pose a threat (such as mine layers). Scouts are armed ships based on the Scout, Frigate, and Destroyer hulls. Warships are all other armed ships, including armed freighters. Bombers are any ship based on one of the Bomber hulls.

Tip: If the enemy fleet is in orbit, you can also click on the planet, then click on the yellow arrow in the Summary pane until the fleet's summary is displayed.

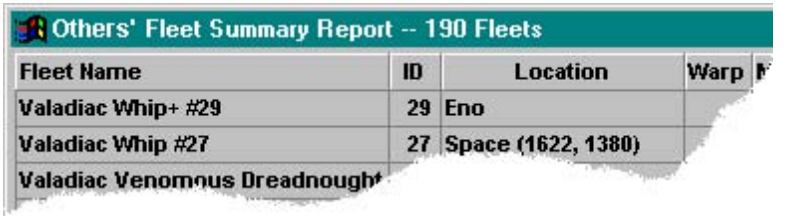
VIEWING ENEMY SHIP DESIGNS

Any ships you have fought can be examined in the Ship and Starbase Designer.

1. Choose the **Commands** (**Ship Design**) menu item.
2. Select **Enemy Hulls**.
3. Select the design you want to view from the dropdown list.

Ships you have not seen in battle will show no details other than the hull type. If you have fought the ship type before the dialog displays full details, including armor and shield strengths.

FLEET REPORT ON ENEMIES AND OTHER PLAYERS



To display intelligence reports about other player's fleets, choose **Others' Fleets** from the **Reports** menu (or press F3 three times). The report can be sorted by any of its fields.

- Display opponents' fleets in the Selection Summary pane and in the Scanner, following in the report's sort order, by using the left and right bracket keys, '[' and ']', while the report is active. In the report, the fleet displayed in the Summary pane is highlighted.

This report shows where these fleets are currently located, their speed, fleet composition, and breakdown by ship class. A plus sign (+) in the Composition indicates more than one ship type is present in the fleet.

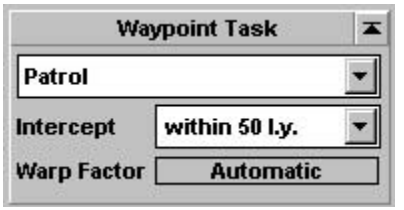
16 PATROLLING

While on Patrol, your fleet will automatically intercept and attack any incoming enemy fleets within a specified range. Fleets on patrol will not target neutrals or friends.

ASSIGNING PATROL ORDERS

To place a fleet on patrol duty:

1. Give the fleet one waypoint in the scanner.
2. In the Waypoints Task tile, select the Patrol task.



3. Select an Intercept Range. Your fleet will only attempt to intercept enemy fleets it detects within the specified range.
4. Set the intercept speed using the warp factor gauge, or accept the default of Automatic. The default chooses the optimum speed (attempting a speed that uses the least amount of fuel to intercept in the shortest possible time). You will be notified when a patrolling fleet is given a new target and can adjust the warp speed or retarget it before the intercept happens.
5. Set any additional waypoints. The Patrol order will be carried out automatically for each waypoint, until you assign a different task.

- To station a patrol at a particular location, send the fleet to that location and then give it the Patrol task and select the Repeat Orders checkbox in the Fleet Waypoints tile.

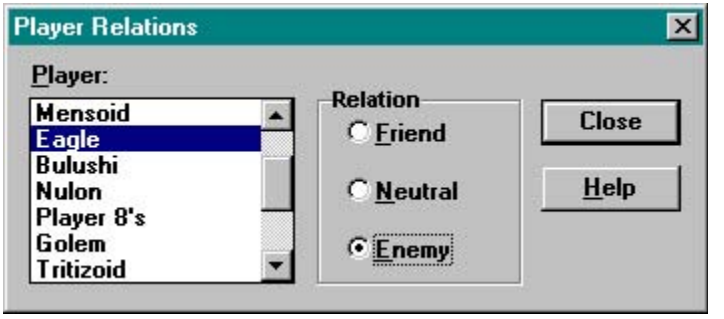
  The fleet will only target enemies within its Intercept Range from that point and will automatically return there after the intercept.

PATROL TARGETS ENEMIES ONLY

Fleets on patrol will only intercept and attack Enemy fleets. In a single player game against AIs, all other players are your enemies. In a multi-player game, you can choose who is your enemy, friend or a neutral.

To make a player your enemy in a multi-player game:

1. Choose **Commands** (**Player Relations**), opening the Player Relations dialog.



2. Select the player in the dropdown list, then click on **Enemy**.

3. **OK** the dialog.

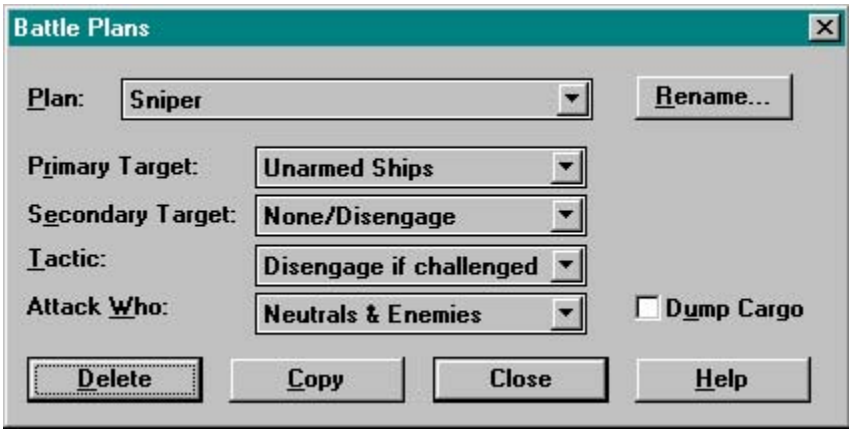
Patrol does not immediately target an enemy fleet. Targeting occurs after all players move, as one of the last tasks in generating a new turn. This allows you to receive a message and inspect the patrol order that was given, altering it if necessary before the ship commits to the attack.

If you want the ship to patrol and attack a particular enemy fleet you see right now, simply add a waypoint at the enemy fleet with orders to Patrol at that ship.

PATROL AND BATTLE PLANS

Patrol takes battle plans into account when deciding who to intercept. Your primary target will be matched according to its hull type. For example, if you target unarmed ships, your patrol fleet will only target fleets guaranteed to be unarmed. You would not target a battleship, even if you've fought it before and know that it doesn't have any weapons on board.

Learn more about Battle Plans, p 15-11



17 Scanning and Cloaking

Scanners tell you about:

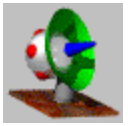
- planetary environments
- enemy fleets
- minefields
- mineral packets in transit
- salvage
- wormholes

Both planets and ships can have scanners. You initially create a planet-based scanner by adding it to your production queue. Afterward, the scanner is automatically upgraded as your technology improves. Ship-based scanners must be included in the hull design.

All fleets detected by your scanners appear in the Scanner pane. Fleets can use cloaking devices to reduce a scanner's effective range and thus increase the chances of escaping detection.

Alternate Reality races do not build planetary scanners. Scanning is an inherent ability of the population. To learn more about these unique beings read chapter 22, Alternate Reality Races.

SCANNER TECHNOLOGY



Like all other technology, the science behind scanners and cloaking devices must be researched. The research requirements and features of planet-based scanners are described in the Planetary category of the Technology Browser; ship-based scanners are described in the Scanners category; cloaking devices are described in the Electrical and other miscellaneous categories.

Planet-penetrating scanners

These scanners can detect fleets in orbit around a planet. They also can tell you planetary statistics from a distance, such as mineral concentrations under the planet surface.

Normal, non-penetrating Scanners

These scanners cannot penetrate a planet. Any object orbiting the planet is hidden from your radar. Minefields are cloaked 75% from this type of scanner.

Minefields as Scanners

Minefields act as non-penetrating scanners for the players with the Space Demolition racial trait. These scanners do not detect fleets orbiting planets.

Scanners are Additive

The formula for calculating a ship's scanner range is the 4th root of the sum of each scanner to the 4th power. Let's say you have a ship design with two 100 light year scanners and one 60 light year scanner:

(100^4 + 100^4 + 60^4) ^/= 120 light years

The same calculation applies to planet penetrating scanners.

Scanners and Primary Traits

Some races have extra scanner technology. For example, if you've chosen Packet Physics as your primary trait, all your mineral packets will act as planet-penetrating scanners. If you choose Space Demolition all your minefields act as normal scanners.

SELECTING FLEETS IN THE SCANNER PANE

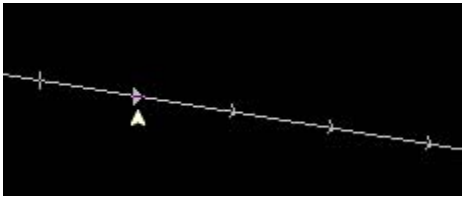
Fleets in orbit are indicated by a circle around the planet. To select a fleet in orbit:

1. Right click on the planet in the Scanner pane.
2. Select the enemy fleet from the pop-up list.

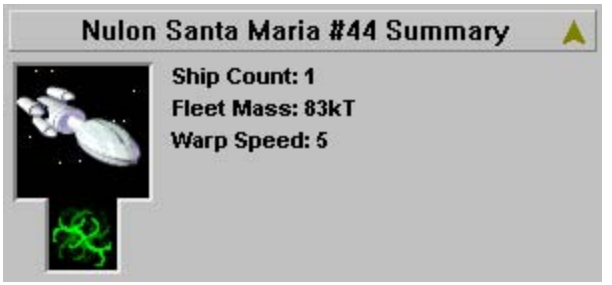
Follow the same procedure to select a fleet from a group in deep space.

If you own the ship, it appears in the Command pane.

Estimated Path of Another Player 's Fleet



Click in the Scanner on an opponent's fleet to display its estimated path. The arrow points in the approximate direction of travel. Tick marks appear on the line indicating how far the fleet will move in a year at its current speed. Since a fleet travels in a straight line from waypoint to waypoint, you can use this path to estimate the fleet's origin and destination.



Using the opponent's fleet summary and estimated path, you can guess at the types of activities your wily foe or friend is up to. For example, if you select a fleet of attack ships, you can meet them in battle, and have a better idea of where those attack fleets are coming from and thus, where to aim your own big guns or to lay minefields. If the selected fleets tend to be scouts, miners or colonists, you'll have a clue to their current strategy and possible needs.

SCANNING PLANETS

When you scan an uninhabited planet, you'll be able to detect the environment and the concentration of each mineral under the planet surface, but not the minerals stored on the surface. If you attempt to scan a planet inhabited by an opponent, you can detect only the environment, underground mineral concentration and an estimate of the population (plus or minus 20%).

If the planet's starbase has cloaks, the distance at which you can detect the enemy's starbase is reduced.

CLOAKING, OR HIDING FROM OPPONENTS' SCANNERS

Cloaking devices allow you to reduce your opponent's effective scanner range in detecting your cloaked fleet or planet. Cloaking devices do not make your fleet or planet invisible: no matter how strong the cloak, the object will always be visible to another fleet at the same location.

Cloaking reduces your opponent's scanner range by a specific percentage. The higher the percentage, the more the range is reduced. **The maximum amount of cloaking possible is 98**%, or a reduction of your opponent's scanner range by 98%.

For a description of how cloaking is calculated, read chapter 24, The Guts of Cloaking.

Cloaking is shared by the entire fleet. The cloaking percentage of a fleet is displayed in the Fleet Composition tile, except when in small screen mode.

Uncloaked ships are also hidden in a cloaked fleet, although they do reduce the cloaking percentage.

Advantage of a Second Cloak

Cloaks are additive. Additional cloaks reduce your fleet's visibility.

Types of Cloaks

There are several types of cloaking devices. If your race is based on the Super-Stealth primary trait, you also have access to cloaked armor—the Depleted Neutronium, a cloaked shield—the Shadow Shield, and one ship-based cloaked scanner—the Chameleon. Multiple cloaks on the same ship can all be of the same or different strengths.

To learn more about a specific cloak, open the Technology Browser (press F2). View the Electrical category for standard cloaks or other appropriate category for devices with secondary cloaking attributes.

Cloaked Starbases

Adding cloaks to a starbase hull cloaks only the starbase, not the planet.

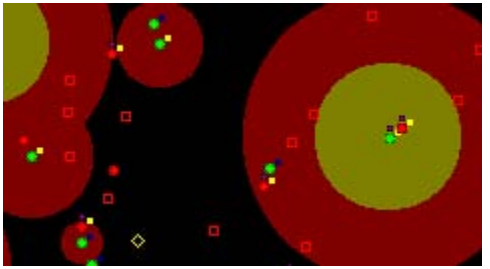
DETECTING OPPONENTS' FLEETS

Having scanners on as many planets as possible reduces the chance that cloaked fleets will sneak past. For example, if your opponent has 75% cloaking, and your scanners normally detect fleets at a range of 200 light years, your effective scanning range will be reduced to 50 light years. If your scanners are close together, whether they be planet-based, ship-based, or a

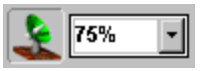
combination, you'll create a gauntlet that opponents'ships aren't as likely to sneak through undetected.

Also consider placing sentry ships at uninhabited planets along your border. They will help prevent any unseen planet-hopping by your opponents. Even if a ship is cloaked, you will still detect it when it passes by.

The X series of planet-based scanners and certain ship-based scanners can detect both fleets in deep space and fleets in orbit. Both these ranges are affected by cloaking. For example, if you are using a Snooper 250X planet-based scanner against a 75% cloak, the scanner will have effective ranges of 62 light years and 31 light years. If the ship is in orbit of a planet 32 light years away, you won't see it.



With the Scanner's Radar Overlay turned on, ask yourself: Will there be gaps in my coverage if each scanner only sees ½ as far? What about ¼ as far? Adjust the percentage to determine what your coverage would be relative to the cloaking ability of opponents'ships.



For example, select 75% to show how close a fleet with 25% cloaking will need to be before you can detect it.

Keep in mind that a cloak only reduces a scanner's effectiveness in detecting the cloaked fleet. It fools the scanner, rather than physically changing it.

Tachyon Detector

You must have the Inner Strength trait to use this device.

Tachyon Detector

Each Tachyon Detector reduces the effectiveness of other players cloak by 5%. The reduction is only seen by the fleet carrying the detector. The affect of multiple detectors is additive. If a fleet has two detectors, the first lowers the effectiveness of the opponent's cloak to 95%, the second detector takes the 95% and reduces it almost another 5%, down to 90.2%. This makes it

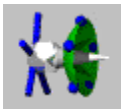
significantly harder for enemies to sneak past fleets carrying this device. A great option for ships on regular patrol duty.

When you add a Tachyon Detector to a hull design, the Ship and Starbase Designer displays other player's cloaking effectiveness on the design's scanner information line.

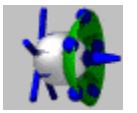
PIRATING USING STEALTH-BASED SCANNERS

You need the Super Stealth primary race trait and a fleet with the Pick Pocket or Robber Baron scanner to steal cargo from an opponent's hold. Just set the opponent's fleet as a waypoint, then set the Transport order to Load the amount you want to heist. The theft will take place as soon as your pirate fleet reaches its victim.

You can steal only cargo, not fuel or colonists.

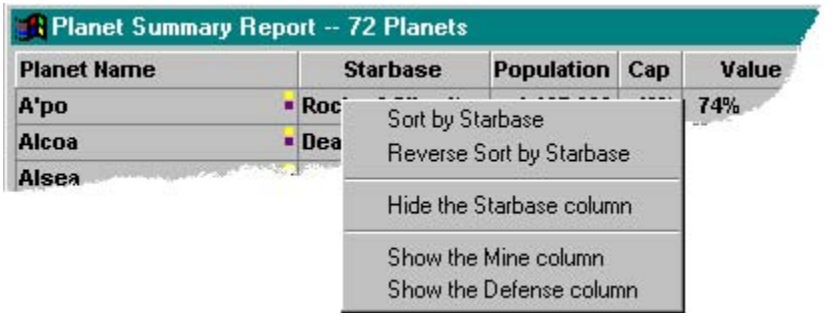


Pick Pocket



Robber Baron

18 REPORTS



Reports list all statistics for all your planets and fleets, other player's fleets you know about, and battles from the previous year.

- Hide columns by clicking on the column label and selecting **Hide the** <column name>.
- Show a hidden column by clicking on any column and selecting **Show the** <column name>.
- Choose a new sort order by clicking on the label and choosing forward or reverse order.
- Go to any item by clicking on its associated row in the report.
- Display the related pop-up information or game dialog by clicking on the statistics.

Planet names — a yellow dot next to the name indicates a starbase capable of building ships. A blue dot indicates a starbase unable to build ships. A green dot indicates the planet has a stargate, a purple dot indicates the planet has a mass accelerator.

KEYBOARD SHORTCUTS

F3 opens the Planet Summary Report, then toggles to successive reports: second press opens the Fleet Summary Report for your fleets; third press opens the Others' Fleet Summary Report; fourth press opens the Battle Summary Report; fifth closes the report window.

Pressing the ESC key also closes the report window.

SORTING REPORT FIELDS

Sort any report by a specific field type:

- Right click on a column header and select one of the pop-up options.

Reports handle up to two levels of sorting. For example, you can sort your planets by mineral content, then sort by starbases. The end result will have your planets sorted according to starbase type, with planets with identical starbases sorted according to mineral content.

Starbase	Minerals
Cube	0 3338 3026
Cube	1519 1570 3039
Cube	1808 0 3091
Cube	3424 2176 739

HOW THE SORT ORDER AFFECTS THE DISPLAY ORDER OF PLANETS AND FLEETS

You can change the order in which planets and fleets are displayed in the Command pane using the Reports form.

- Click on a column header and change the sort order by selecting one of the options.

For planets, this matches the order in which planets appear in the Planet tile and Production dialog with the order shown in the Planet report. For fleets, this changes the order in which fleets appear in the Fleet tile.

PRINTING A MAP OF THE UNIVERSE

❋ Print a pictorial map of the universe using the **File** (**Print Map**) menu item.

This sends a black and white plot of the universe to your printer, with the black background reversed to white. You can the zoom level of your printout by specify the number of pages to print: the larger the number, the greater the zoom. The map supports the Planet Names Overlay and No Player Info view only.

DUMPING INFORMATION TO A TEXT FILE

To export basic information about the universe, planets and fleets to an plain text file, choose the **Dump to Text** command from the Reports menu. Each option (Universe, Planet, or Fleet) produces a file with the same base name of the current game and an extension of either .map (for the universe), .pla (for a planet) or .fle (for a fleet).

Learn about
Planet Reports, p 6-21
Fleet Reports, p 10-11
Battle Reports, p 15-16

19 DIPLOMACY AND TRADE

Multi-player games only

Stars! has features that allow you to practice diplomacy in multi-player games. Use the mail feature of the Message pane to communicate with other players, arranging alliances, rendezvous, trade agreements, joint remote mining ventures, and non-aggression pacts. (Stars! mail works equally well for hurling insults and taunts.)

Stars! does not require one winner. When you're setting up the game, you can specify winning conditions that encourage diplomacy by allowing for multiple winners.

PLAYER RELATIONSHIPS

You can declare neutral and friendly players using the Player Relations dialog. This prevents you from attacking the wrong people and allows you to automatically come to a friend's aid if they're under fire. Friends can also pass through each other's mine fields without harm, automatically refuel at their starbases and are allowed to use their stargates. So it's worthwhile to set up alliances, even if they're temporary.

TRADING FUEL AND MINERALS

You can also trade fuel and minerals with other players, sending messages to arrange the trade, then rendezvouing with the other player's fleet to give or receive minerals or fuel. Minerals can also be sent to another player's planet using a fleet-to-planet transfer or by flinging mineral packets to the planet (assuming the receiving planet has a mass driver of equal or greater strength—otherwise you might have a war on your hands).

Fleet-related trades can be automated by setting your waypoints between planets or fleets, specifying Transport orders, then selecting Repeat Orders. Automate mineral packet-based trade by adding Mineral Packets (Auto Build) to your production queue and aiming the mass driver at the correct planet.

TRADING TECHNOLOGY

It is also possible to trade technological research data by scrapping fleets at each other's starbases. While this is not always 100% successful, due to the differences in each race's basic understanding of the laws of physics, it is a great way to add spice to an alliance.

TRADING SHIPS

You can give fleets to other players using the Transfer Fleets waypoint task. The other player can take the fleet if doing so would not cause them to exceed the maximum number of ship designs. The receiving player cannot build additional ships of the types given by other players. They can, however, receive additional ships of the same type from the other player.

TRADING WITH TRANSDIMENSIONAL BEINGS

You might encounter a transdimensional being with technology to sell during the course of a game. If you can catch this Mystery Trader and give it what it wants, you may learn about technology that neither you nor any other player would normally be able to research and build.

JOINT MINING VENTURES

You can join with other players to remote mine a planet, each player using their own remote mining fleet and freighters or, since minerals can be transferred between different players fleets and planets, one player may mine then manually transfer the minerals to the other player's holds for transports to the agreed upon ports-o-call.

Any Super Stealth race can automate transferring cargo from another player's mining fleet as a waypoint task—if the other player agrees, it's diplomacy; otherwise, it's piracy.

CLAIM ADJUSTERS AND ORBITAL TERRAFORMING

Races based on the Claim Adjuster trait can terraform other player's planets from orbit. This creates unique opportunities for diplomacy or war. If the owner is your Friend, you perform positive terraforming (adjusting planetary conditions toward the inhabitants'optimal conditions). If the owner is your Enemy, you perform negative terraforming.

Terraforming from orbit happens automatically as soon as your fleet arrives. Just set the destination planet as the fleet waypoint. No waypoint task is necessary.

Terraforming for Hire

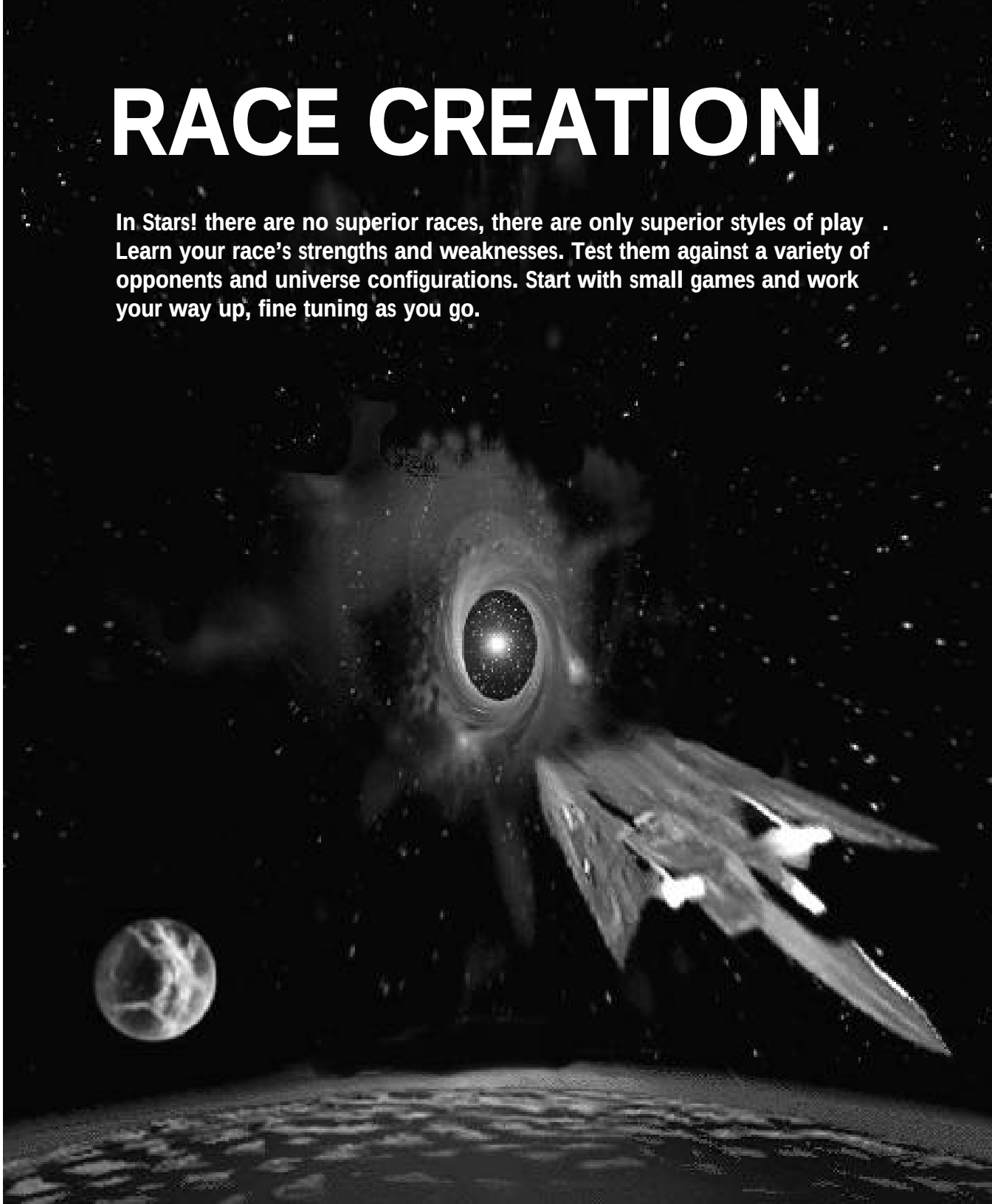
Terraforming from orbit requires a fleet outfitted with Orbital Adjusters. These are described in the Mining Robots section of the Technology Browser. Every race with the Claim Adjuster trait starts out with one ship outfitted with Orbital Adjusters.

Terraforming from orbit is a great vehicle for diplomacy: in return for other technology, an alliance, or just a plain 'thank you', you can help your friends make their planets a better place to live. Only offer this assistance to friends who have lesser terraforming capabilities than yourself. Terraforming is not additive—you can't combine your orbital terraforming abilities with those of the inhabitants to super terraform the planet. The planet will only be terraformed to the limits of whoever possesses the superior technology. For example, if the inhabitants have 3% terraforming and you possess 5% terraforming, the planet can be improved up to 5% from its original conditions (not exceeding optimal conditions for the inhabitants).

Specify Friends, Enemies and Neutrals using the Player Relations dialog (press F7).

RACE CREATION

In Stars! there are no superior races, there are only superior styles of play . Learn your race's strengths and weaknesses. Test them against a variety of opponents and universe configurations. Start with small games and work your way up, fine tuning as you go.



20 DESIGNING CUSTOM RACES

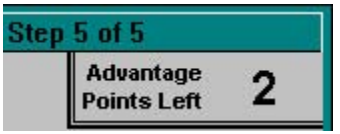
The Custom Race wizard allows you to create, save and edit your player races. Here, you define a race's strengths and weaknesses. The trick lies in balancing advantages with disadvantages in order to achieve a mix that makes the best use of the stuff of creation — units of primordial ooze called advantage points.

OPENING THE WIZARD

You can open the Custom Race wizard using the **File** (**Custom Race wizard**) menu item, or from the basic or advanced new game dialogs. Alternately, you can open an existing race for editing using the **File** (**Open**) menu item and selecting the race file.

ADVANTAGE POINTS

In each step, the box in the upper right corner of the dialog shows the current number of unused advantage points.



With each advantage selected, the number decreases. Advantage points go down a little for slight advantages, and a lot for juicy ones. Before you finish, the number of advantage points must be greater than or equal to zero. When the number becomes negative and turns red, your race has missed the boat to Creationville. To get back in the black, select a few disadvantages (one of the catches of playing God).

Choose your race attributes wisely. Once you begin the game, the race is yours for the duration. You can view your characteristics, but you won't be able to change them.

STEP 1: BASIC RACE DEFINITION

Race Name and Password

Name your race and if you wish, choose a password. The password chosen when a race is created is attached to the race file. While you may change the password during the game, that change applies only to the current game. Opening that race file for use in another game will require proper entry of the original password. In order to view or edit the race file, you also need the password. You may specify a race name only here in step 1.

Predefined Races

Selecting a predefined race automatically presets all of the options in steps 2 through 6. Choosing a predefined race doesn't prevent you from changing any option — they are only provided as a time saver. Each predefined race has specific strengths and weaknesses you can use in determining your playing style and strategies.

Use the Custom Race wizard to learn about the pre-selected attributes for each predefined race and use a race as a starting point for one of your own:

1. Select each predefined race in turn.
2. Use the **Back** and **Next** buttons to step through the wizard, noting the settings.
3. Go back to step 1 and select the predefined race that looked the best for your purposes.
4. Fine tune that race using as much of the wizard as necessary.

Read more about the predefined races in chapter 21.

Other Basic Definition Options

Leftover Advantage Points — Surface Minerals

You will get 10kT of surface minerals for each leftover advantage point. For example, if there are 20 unused points, you would receive a total of 200kT of minerals. Stars! weights the distribution in favor of the rarest minerals. These will be available immediately.

Leftover Advantage Points — Mines

You will get one additional mine for every two leftover advantage points. These will be available immediately.

Leftover Advantage Points — Factories

You will get one additional factory for every 5 leftover advantage points. These will be available immediately.

Choosing the mines, factories or defenses options will have no effect on Alternate Reality players and will waste advantage points.

Leftover Advantage Points — Defenses

You will get one additional defense installation for every 10 leftover advantage points. These will be available immediately.

Leftover Advantage Points – Mineral Concentration

The concentration of the mineral on your home world that would have been poorest is improved by 1% for every 3 leftover advantage points. Increasing the concentration increases the rate at which the mineral is mined (mining, of course, reducing the concentration over time).

Race Emblem

Select a race emblem from the collection. This emblem identifies your fleets when they are displayed in the Selection Summary pane. In a multi-player game you may not get the emblem you select if another player chooses the same emblem.

STEP 2: PRIMARY TRAIT

Choose the major characteristics for your race. Each primary trait gives you a specific and powerful set of strengths. This section lists of the specific technologies, advantages and disadvantages for each primary trait.

Hyper-Expansion trait

Starting Advantages

- Growth rate is twice the value shown on step 4 of the Custom Race wizard.
- One armed scout
- Three mini-colony ships

Exclusive Hulls

- Mini-Colonizer hull
- Meta Morph hull (completely flexible)

Exclusive Engines

- Settler's Delight engine—Warp 6 for free, but only for Mini-Colonizer hull

Exclusive Components

- Flux Capacitor increases the damage done by all beam weapons on Hyper-Expansion ships by 20%

Limitations

- Cannot build stargates
- Maximum population limitation is ½ what the planet would normally support for a race with your environment requirements

Super-Stealth trait

Starting Advantages

- Tech level 5 in Electronics
- One scout
- One colony ship

Exclusive Hulls

- Rogue hull
- Stealth Bomber hull

Exclusive Components

- Pick Pocket scanner that sees enemy fleet cargo in same location, allowing you to steal that cargo using the cargo gauge (and transfer dialog)
- Chameleon scanner with a scanning range of 160|45 plus a 20% cloak
- Robber Baron scanner that sees enemy fleet cargo and enemy planet surface minerals
- Shadow Shield with a strength of 75 plus a 35% cloak
- Depleted Neutronium with an armor strength of 200 plus a 25% cloak
- 75% Transport Cloak
- 85% Ultra-Stealth Cloak
- All ships and starbases built by Super-Stealth races have an inherent 75% cloak

Exclusive Abilities

- Travel through opponent's mine fields at one warp speed faster than the limit stated in the Technology Browser
- Gain research by spying and combining it with your own research. Gain resources in each field equal to ½ the average spent in that field by all races (including yourself) while at least one other race exists

War Monger trait

Starting Advantages

- Tech level 5 in Weapons
- Tech Level 1 in Propulsion and Energy
- One armed scout
- One colony ship

Exclusive Hulls

- Battle Cruiser hull
- Dreadnought hull

Exclusive Weapons

- Gattling Neutrino Cannon
- Blunderbuss

Exclusive Abilities

- ½ square movement bonus in battle
- Colonists attack better
- All weapons cost 25% less to build
- Learns the exact design of enemy ships as soon as they are scanned

Limitations

- Cannot build mine layers or lay minefields
- Can build SDI or Missile Battery defenses only

Claim Adjuster trait

Starting Advantages

- Technology level 1 in Energy, Weapons and Propulsion, level 6 in Biotech
- Ship capable of terraforming other players'planets from orbit

Exclusive Components

- Retro Bomb de-terraforms planets
- Orbital Adjuster modifies other player's planet environmental conditions from orbit

Exclusive Weapons

- Bombs that de-terraform worlds.

Exclusive Abilities

- Terraforming is free (and temporary). Each year all planets owned by you are terraformed to the limit of your terraforming technology. The planet reverts to its original condition if it is abandoned or captured by another player.

Inner-Strength trait

Starting Advantages

- One scout
- One colony ship

Exclusive Hulls

- Super Freighter hull
- Fuel Transport hull

Exclusive Components

- Croby Sharmor shield strength 60 plus 65 dp as armor
- Fielded Kelarium armor strength 175 plus 50 dp as shield
- Speed Trap 20 mines—stops fleets cold
- Jammer 10 and Jammer 50 deflects torpedoes

Exclusive Weapons

- Mini Gun, power 13, range 2, sweeps mines at 208/year

Exclusive Components

- Tachyon Detector, reduces the effectiveness of other players cloaks by 5%

Exclusive Abilities

- Colonists defend better
- Ships heal faster
- Planetary defenses cost 40% less
- Your colonists on freighters reproduce at ½ of their maximum rate, beaming down excess babies when orbiting a planet you own

Limitations

- Weapons cost 25% more than they do for other races
- No Smart, Neutron, Enriched Neutron, Peerless or Annihilator bombs.

Space Demolition trait

Starting Advantages

- Tech level 2 in propulsion and biotech
- One scout
- One colony ship
- Two mine layers (one standard, one speed trap)

Exclusive Weapons

- Mine Dispenser 40, 80, 130 — standard mines
- Heavy Dispenser 50, 110, 200 – more serious fire power
- Speed Trap 20, 30, 50 mines — stops fleets cold

Exclusive Hulls

- Mini Mine Layer hull
- Super Mine Layer hull

Exclusive Abilities

- Mine fields act as non-penetrating scanners. Cloaks work as an absolute percentage against mine scans.
- Can travel through opponent's mine fields at two warp speeds faster than the limit stated in the Technology Browser
- Can remotely detonate standard minefields
- Mine fields decay at a rate of 1% a year per planet enclosed in the field. All other player's fields decay at 4% a year per planet enclosed.
- Learn the exact design of any enemy ship that detonates one of your mines.

Packet Physics trait

Starting Advantages

- Tech 4 in Energy
- Two shielded scouts
- One colony ship
- Two starting planets in non-tiny universes

Exclusive Components

- Mass Driver 5, 6, 8, 9, 11, 12, 13
- Mineral packets with built-in penetrating scanners, with a range equal the square of their warp speed.
- Energy Dampener slows all ships in combat by 4 initiative points

Exclusive Abilities

- Mineral packets are smaller and cheaper to build.
- Sense all players' mineral packets in flight, regardless of location
- Learn the exact design of any enemy starbase that uses a mass accelerator to receive a packet you fling.
- Planets receiving mass packets have a 50% chance of a 1% improvement in an environmental attribute. For every 100kT of a mineral not caught, there is also a 0.1% chance of the overall planet value improving by 1%.

Limitations

- Mineral packets do only 1/3 the normal damage.

Interstellar Traveler trait

Starting Advantages

- 2 planets with 100/250 stargates (in non-tiny universes only)
- Tech 5 in propulsion and construction
- One scout
- One colony ship
- One destroyer
- One privateer

Exclusive Hulls

- Stargates with unlimited range and capacity.

Exclusive Components

- Anti-matter Generator acts as a 200mg anti-matter fuel tank and generates 50mg of fuel every year.

Exclusive Abilities

- Can transport minerals and colonists in fleets through stargates. The cargo weight is not taken into account when determining the fleet weight versus the gate's limits.
- Exceeding the safety limits of stargates is less likely to kill your ships
- Stargates cost 25% less
- Stargates reveal planetary statistics on all other planets with stargates in range

Limitations

- Mass drivers are only half as effective at catching minerals as their rating, are less efficient at flinging minerals, and all mineral packets flung decay, regardless of speed.

Alternate Reality trait

Exclusive Hulls

- The Death Star is the largest starbase hull ever known.

Exclusive Components

- Orbital Construction Module that contains viral weapons capable of killing 2000 enemy colonists per year and that colonizes worlds by transforming into an Orbital Fort

Exclusive Abilities

- Lives on starbases only, not planets
- Starbases are 20% cheaper to build (non-cumulative with Improved Starbases)
- Population acts as natural miners and scanners
- Remote mine own planets (since they live in orbit)
- Maximum population is determined by the size of the starbase, not the planet
- Planetary resources grow as Energy Tech Level increases

Limitations

- Cannot build planetary installations
- Interstellar travel kills 3% of any colonists in the fleet per year.

Jack of All Trades trait

Starting Advantages

- Tech 3 in all field
- Two scouts
- One colony ship
- One medium freighter
- One mini miner
- One destroyer

Exclusive Components

- Scout, Frigate and Destroyer hulls get a built-in scanner with a range equal to 2x / x l.y. where x = 10 * Electronics Tech level

Exclusive Abilities

- Improves all Costs 75% Extra fields to tech level 4 if the box in step 6 is checked

STEP 3: LESSER TRAITS

Specify/view the lesser traits for your race. You'll probably find several traits that won't affect your playing strategy. Each time you choose a trait that prevents you from developing something, you'll gain advantage points you'll be able to use elsewhere or, if you're in the hole, bring the balance closer to being above zero (you have to be above or at zero before you can click on Finish).

Select lesser traits that compliment the profile you chose in step 2:

Improved Fuel Efficiency trait

Your ships will burn 15% less fuel than what the drive specifications indicate. The Fuel Mizer and the Galaxy Scoop engines are also available. This trait also increases your starting tech in propulsion by one level.

Total Terraforming trait

You begin the game with the ability to adjust each of a planet's environment attributes by up to 3% in either direction. Throughout the game, additional terraforming technologies not available to other players will be achievable, up to 30% terraforming. Total Terraforming requires 30% fewer resources.

Advanced Remote Mining trait

Gives you three additional mining hulls and two new robots. You will start the game with two Midget Miners.

Improved Starbases trait

Gives you two new starbase designs. The Space Dock hull allows you to build starbases which can in turn build small to medium ships. The Ultra-Station is much larger than a standard Starbase. Your starbases are automatically cloaked by 20%. Starbases will cost you 20% less to build.

Generalized Research trait

Your race takes a holistic approach to research. Only half of the resources dedicated to research will be applied to the current field of research. 15% of the total will be applied to each of the fields. (Yes, we know this adds up to 115%.)

Ultimate Recycling trait

When you scrap a fleet at a starbase, you recover 90% of the minerals and 70% of the resources used to produce the fleet. The resources are available for use the next year. Scrapping at a planet gives you 45% of the minerals and 35% of the resources.

These resources are not strictly additive. The number a planet receives is determined by the formula:

Resources = (Current_production x Extra_resources) /
(Current_production + Extra_resources)

This formula is true whether or not a planet has a starbase.

Mineral Alchemy trait

You will be able to turn resources into minerals more efficiently. One instance of mineral alchemy will use 25 resources to produce one kT of each mineral. Without this trait it takes 100 resources to produce one kT of each mineral.

No Ramscoop Engines trait

You will not be able to build the Radiating Hydro-Ram Scoop, Sub-Galactic Fuel Scoop, Trans-Galactic Fuel Scoop, Trans-Galactic Super Scoop, Trans-Galactic Mizer Scoop or the Galaxy Scoop. You will be able to build the Interspace-10 engine, which can travel warp 10 without taking damage.

Cheap Engines trait

Pro: Engines cost 50% less to build.

Con: Your ship engines aren't entirely reliable. When attempting to travel at speeds above warp 6, there is a 10% chance the engines will refuse to engage.

Only Basic Remote Mining trait

No Robo-Miner, Robo-Maxi-Miner or Robo-Super-Miner robots.

No Advanced Scanners

You will not have any standard scanners that can scan planets from a distance and see fleets hiding behind planets. All ranges for conventional scanners are doubled.

Low Starting Population trait

Instead of 25000 people, you start with 17500 (30% fewer). It takes a long time to overcome a lower starting population — it helps to have a high growth rate, but even then it can be painful.

Bleeding Edge Technology trait

New technologies initially cost twice as much to build. As soon as you exceed all of the tech requirements by one level, the cost drops back to normal. Miniaturization, the lowering of production costs, occurs at 5% per level, up to 80%. Without this trait miniaturization occurs at 4% and tops out at 75%.

Regenerating Shields trait

All shields are 40% stronger than the listed rating. Shields regenerate at 10% of the maximum strength after every round of battle. All armors are at 50% of their rated strength.

STEP 4: POPULATION GROWTH FACTORS

Specify your race's habitable range and its growth rate under optimum conditions, using the following topics as guidelines:

Growth Conditions

Use this step to specify how well your race tolerates gravity, temperature and radiation. The tolerances are set individually for each of the three environmental factors.

The width of the colored bar represents the extent of the habitable range. The width plus the position of the bar left or right determine the extremes of the habitable range. The numbers to the right of the bar show the extremes in either gravities (g), degrees Celsius (C) or millirads (mR).

Your race will grow only on planets with conditions that fall within the habitable ranges. On planets that are outside the habitable ranges, some colonists will die every year due to the unbearable conditions.

The gravity and temperature of every planet are picked at random, but are slightly weighted to favor values in the middle of the spectrum. If you move the colored bar away from the center, the advantage points increase, compensating for the reduction in the number of habitable planets you will encounter. The radiation level of a planet is chosen completely at random.

Adjusting the Habitable Range

If you click on  or  the entire range moves left or right. Holding down the SHIFT key while clicking moves the range in steps. Click and hold the colored bar to drag it back and forth freestyle.

Clicking  widens the habitable range. Clicking  narrows the habitable range. Holding down the SHIFT key while clicking narrows and widens the range in 20% increments.

Choosing an Extreme Range

Cons: The more extreme your habitability range, the more planets will be out of your habitable and terraformable range.

Pros: You get back advantage points. Also, planets with environments near the ends of the spectrum have a good chance of being super-rich in one or more minerals. For example, a planet with a flesh-searing radiation extreme of 97mR could easily have four times the concentration of each mineral as a mild-mannered vacation world.

Immunity

Selecting the **Immune to Radiation** checkbox allows you to ignore an environmental factor. This is very expensive and will require the selection of many disadvantages to bring advantage points back above zero. When you select immunity, the habitable range becomes irrelevant and disappears. If you select any kind of immunity, you may not want to spend points on the Total Terraforming advantage. Once you're in the game, you can research individual terraforming technologies that apply only to environmental factors that can affect you. If you are totally immune, you never need to terraform.

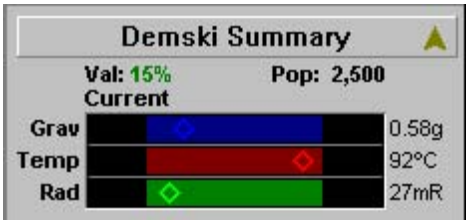
Selecting immunity is different than expanding the habitable range to fill the entire spectrum. Immunity treats every point in the spectrum as 100% ideal. A range widened to fill the spectrum treats only the mid-point as 100% ideal. The edges of the range are 0% ideal.

Maximum Population Growth

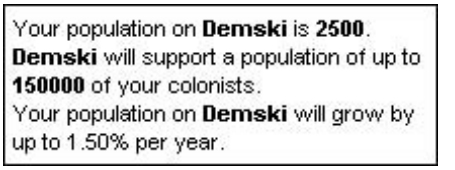
Set the maximum colonist growth rate between 1% and 20% per year. The colonists will grow at this rate only if the habitability value is 100%. If the habitability value is less than 100%, the colonist growth rate will fall proportionately.

For example:

If your people decide to colonize Demski, a rock with a habitability value of 15%.



Clicking on the Value in the Selection Summary pane for the planet Demski displays this popup:



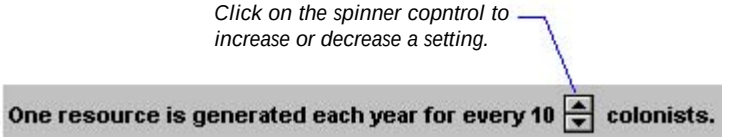
If you are immune to an environmental factor, every planet you explore will be 100% ideal for that factor. Immunity is expensive. You will have to choose many disadvantages in order to compensate and bring the advantage point value back above zero.

If you select both immunity and the advantage of Total Terraforming, some or all of the points used to obtain the Total Terraforming advantage will be wasted.

STEP 5: POPULATION EFFICIENCY

Specify/view the efficiency of your colonists, mines and factories for all the planets you inhabit.
If you are confused about whether increasing or decreasing a value is

If you choose the Alternate Reality primary trait most of these controls are disabled. Alternate Reality races can't build planetary installations.



providing an advantage, watch the advantage points box as you click on the controls. If the number of points decreases when you click on a control, you have given the race an advantage.

Sample Strategies

If you have a race with a high population growth, you may not care about being efficient with factories. In this case you would set the controls so colonists produce fewer and more expensive factories, thereby freeing up advantage points to use somewhere else.

If you don't plan on building a lot of mines, or if you have extra advantage points, consider increasing the mining production rate. This will NOT affect the rate at which the mineral concentration is reduced on your planets. It only makes you more efficient at squeezing minerals out of the rock. This can give you a competitive advantage over a player who operates more mines but is less efficient—they'll decrease their mineral concentration faster than you. The rate at which mineral concentration decreases (always stopping at 1) is determined by the number of mines on a planet and the number of years they've been in existence.

Keep in mind that when the mineral concentrations on both your planets and your opponent's planets reaches 1, the player with more mines can do as well, and possibly better, than the player who is very efficient at extraction. If you're very good at production and are creating resources like crazy, you may find you can easily make up for low mineral concentrations with Mineral Alchemy.

These are only simple examples of possible strategies—make the choices that suit your game the best, keeping in mind the rules determining the rate at which mineral concentration is reduced.

Next you'll specify the cost of research for your race.

STEP 6: RESEARCH COSTS

Specify/view how efficiently your scientists use planetary resources in their research. Changes are reflected in the advantage points box in the upper-right corner of the dialog.

Selecting Costs 75% Extra increases the available advantage points.

Selecting Costs 50% Less decreases the available advantage points.

If you check All 'Costs 75% Extra' Research Fields Start at Tech 3, then it is to your advantage to have as many research fields 'Costs 75% Extra' as makes sense, as this option costs a flat fee.

If you have chosen the Jack-of-All-Trades primary trait, this is '…start at Tech 4'.

FINISH

When you finish Stars! will ask you to save the race to a file, suggesting a file extension of .r1. This is just a default—you can name a race file anything you wish. If you are editing an existing race, you will be asked to save it to that file name or a new name.

21 PREDEFINED RACES

Stars! provides several predefined races you can use without modifying or as a basis for a race you wish to design. Each predefined race has specific strengths and weaknesses you can use in determining your playing style and strategies. Use the information provided in the Custom Race wizard along with the information provided in this chapter to learn about each predefined race.

To open the Customer Race wizard, choose **Custom Race wizard** from the **File** menu.

To learn about defining a race's attributes, read chapter 20, Designing Custom Races.

ANTETHEREALS

Physical Traits

Big foreheads, long dirty claws, baggy pants.

Social Traits

Fast growing, generally peaceable, good at research and mining.

Best Universe Size/Game Difficulty

Against AIs, Antethereals do their best in a small universe, in an easy or medium game. It suffers in a large universe, at any level of difficulty, and in a medium+ universe in a hard+ game.

Advantages

Reproduces fairly fast. Research is cheaper than for most races. Efficient in production and remote mining operations. Able to lay vast mine fields from the very start.

Disadvantages

Tiny survival range—you won't find many planets you can colonize. Can't use advanced war-related technology. Unable to use penetrating scanners and engine technology is sometimes unreliable.

Strategies

Research for defensive hull types, long range weapons, propulsion (fast engines), construction (large cargo capacity).

Auto-build factories, then mines, then factories, until you find a better production strategy.

Explore as fast as possible.

Lay lots of overlapping small mine fields. Remote detonate them when unsuspecting enemies get within their confines.

Build remote miners and freighters. Put ramscoops on the freighters to optimize fuel use and maximize speed.

Concentrate of remote mining. You can't be an Antethereal and environmentally conscientious at the same time. Strip-mine planets you can't colonize, using freighters to transport the minerals to your populated worlds. Be sure to assign the mining fleet itself as a waypoint, so freighters will follow the fleet

Put attack scout in orbit with remote miners, preventing easy colonization from opponents and an attack on your miner. Don't place the scout in the same fleet as the miner, though. Attach armed escorts to your freighters to protect them from attack as well.

On habitable planets, use remote miners for a few turns before colonizing, dumping all the mined minerals on the planet surface so the colonists have a large supply immediately available.

Win by out-researching your opponents. Since you'll concentrate on remote mining, invest in construction to build the biggest, most efficient remote miners possible.

Build very advanced, long range weapons. Avoid direct confrontations, building only as many warships as you need for defense.

HUMANOIDS

Physical Traits

Thin skin, rudimentary senses, efficient fat storage capabilities.

Social Traits

Over promoted. The absolute average race, with no special abilities or disabilities. Can swing either way, playing a defensive game that focuses on outgrowing and outproducing opponents, or an offensive game that focuses on crushing opponents through military might.

Best Universe/Game Size

Has the potential to do well in any size of universe.

Advantages

High growth rate, a pretty good habitable range. Lots of ships to start the game with. No serious disadvantages.

Disadvantages

They have no serious advantages, either. And they're dull.

Strategies

Try to determine the attributes of your opponents and adjust to counter them. You can adapt to compete against almost any kind of opponent.

INSECTOIDS

Physical Traits

Partial vestigal exoskeleton, male prefers a forward leaning orientation for faster mobility, female grows a whiplike sexual organ after initial mating.

Social Traits

Generally antisocial and cranky. Not invited to attend many gatherings because of a superfluous organ that sporadically vents an opaque gas which tarnishes silver and acts as a depilatory.

Primary Diet

Cellulose and Spackle.

Best Universe/Game Size

Large or better universe. You'll need time to increase your population size and develop powerful weapons.

Advantages

Immune to temperature. Good fighters, with top of the line warships and superior battle initiative. Cheap research for energy and weapons. Better than average with factories. Able to build cheaper starbases. Shields regenerate during battle.

Disadvantages

Need to find planets with gravity and radiation on the further ends of the spectrum. Limited to a few types of armor and even those are at fi strength. Engine technology is sometimes unreliable. Has no chance to build freighter transport routes cheaply. Terraforming research is expensive.

Strategies

Your best chance is probably to out-produce and aggressively attack your opponents. Build fast warships and colonizers. You colonize slowly so build remote miners and search for nearby planets with plentiful mineral contents. Be aggressive with your neighbors, and their neighbors: what you can't colonize, take away.

NUCLEOTIDS

Physical Traits

Resembles a scaly tree stump with attractive legs but far too many eyes. 12 types of glands discharge seasonal fluids for various hygenic and nutritional needs.

Social Traits

Gregarious but quick to take offense. As hard as it may be to resist, don't stick your fingers in their ooze holes. Always ask for a sample first.

Primary Diet

Anything burnt or injected with a summer discharge also used externally to accelerate tanning.

Best Universe/Game Size

Medium to large universe. This will give them time to grow and develop technology before encountering other races.

Advantages

Can live on almost any planet. Excellent at robotic mining. Good at fighting and building starbases. Able to sneak up on opponents and steal valuable minerals.

Disadvantages

Very low growth rate. Below average in building and using factories and mines. Abysmal at performing research.

Strategies

Expand as fast as your population growth will let you. Avoid conflict for as long as possible. Concentrate on expansion.

RABBITOIDS

Physical Traits

Similiar to humans except for that thing.

Social Traits

Swingers of the stars. A fast growing, generally peaceful race.

Primary Diet

That thing. They break it off, consume it then grow another. Nobody has ever seen them eat anything else.

Best Universe Size/Game Difficulty

Has the potential to do well in any size of universe.

Advantages

None of the other pre-made races grow faster (only the humanoids come close). Wide habitability range, as well as the ability to eventually terraform each environmental variable up to 30% makes proliferation highly likely. Although you are average at how many resources you create per person, your high growth rate will help increase the rate at which you create resources.

They are efficient with factories and terraforming planets. They start with Tech 5 in propulsion and construction giving them high speed engines and advanced hulls at the start of the game. In larger games their superior stargate technology gives them a definite edge in fleet deployment.

Disadvantages

Slightly below average miners. Unable to build penetrating scanners.

Strategies

Breed, breed, breed. With your habitable range, and terraforming advantages, you can inhabit a large portion of the universe.

SILICANOIDS

Physical Traits

Silicanoids resemble slow moving stacks of thousands of intricately oriented quartz scales that randomly shift and slide past one another as they submerge and surface within the body. When hurrying, Silicanoids produce a sound like metal rakes being drawn over rusted metal and leave a prismatic cloud of microfine sand in their wake.

Social Traits

Abrasive by nature, immune to all environmental factors, can populate any planet, slow growing, slow to research. Planets are a common commodity for this race. If you lose a few, it won't matter, because you can live anywhere.

Primary Diet

Grits.

Best Universe Size/Game Difficulty

Does better in a medium universe, even better in a large to huge universe, at any level of game.

Advantages

Immune to all environmental attributes, which means you can colonize any planet. Produces resources quickly. Has access to additional ram scoop engines. All engines use less fuel. The ultra flexible and powerful Metamorph hull is available only to your race.

Disadvantages

Low growth rate, which means you can't colonize at too fast of a rate. Poor research hampers a quick and explosive start.

Strategies

Don't waste your time on scouts. Build mini-colony ships, fill them up, and colonize all the planets you find (make sure to colonize the more mineral-rich planets first). Don't pull people off planets faster than you can grow them, though. Otherwise you'll have thinly populated worlds ripe for takeover.

If the universe is large, you'll have many planets colonized by the time you encounter your opponents.

No need for remote mining, since you can colonize anything.

Auto-build factories, then mines, then factories, until you find a better production strategy.

Build starbases whenever you have enough resources.

Build big bombers to clear your opponent's planets.

Build defensive fleets and park them near your starbases, holding off bombing raids by AIs.

22 ALTERNATE REALITY RACES

Although Alternate Reality is really a primary trait, it's responsible for races so unusual it deserves its own chapter.

POPULATION AND GROWTH

Alternate Reality races are highly developed energy-based life forms. Their bodies are fragile, flattening like paper under any but the lightest gravitational conditions. As a result they have adapted to living in starbases instead, controlling their planets from orbit. Their growth rates are still determined by the planet's value as these numbers indicate their tolerance to such factors as solar radiation and planetary gravity wells. Their maximum population per planet is determined by the starbase size. This ranges from 250,000 for starter colonies to 3,000,000 for their Death Star. Living on the starbase has a downside: if the starbase is destroyed, the population goes with it.

SCANNERS

Alternate Reality colonists perform scanning duty from the starbase. They distance they scan is determined by the following formula:

Scanning Distance = SQRT(Population / 10)

The Ultra Station and Death Star come with equipment that allows the colonists to also perform penetrating scans at half that distance as long as you don't select the No_Advanced Scanners trait when defining the race.

FACTORIES

Since Alternative lifestylers aren't suited to planetary operations, they can't build factories either. However, due to their energy-based nature, the number of resources available at each planet is calculated as:

Resources = Habitability_Value x
SQRT(Population x Energy_Tech_Level / Efficiency_Coefficient)

The Efficiency Coefficient is specified in the Custom Race wizard. As the Energy tech level increases, so the efficiency.

MINING

These folks can't build mines. Using energy powers alone, they can do a limited amount of mining equal to this formula:

Mining = SQRT(Population/10)

However, since they don't actually inhabit the planet, there is nothing to stop them from remote mining worlds they own as well as uncolonized worlds.

DEFENSES

Likewise, they can't build defenses. Since they live and die with their starbase, defenses don't have any meaning to them. People can't bomb Alternate Reality planets, and mineral packets flung from other planets don't kill Alternate Reality colonists.

The best defenses are advanced armor and weapons for the starbases, and minefields.

STARBASES

Starbases costs Alternators 20% less than other races (though this is not cumulative with advantages provided by the Improved Starbases trait). They are also able to build the Death Star, the biggest, baddest thing in the sky.

COLONIZATION

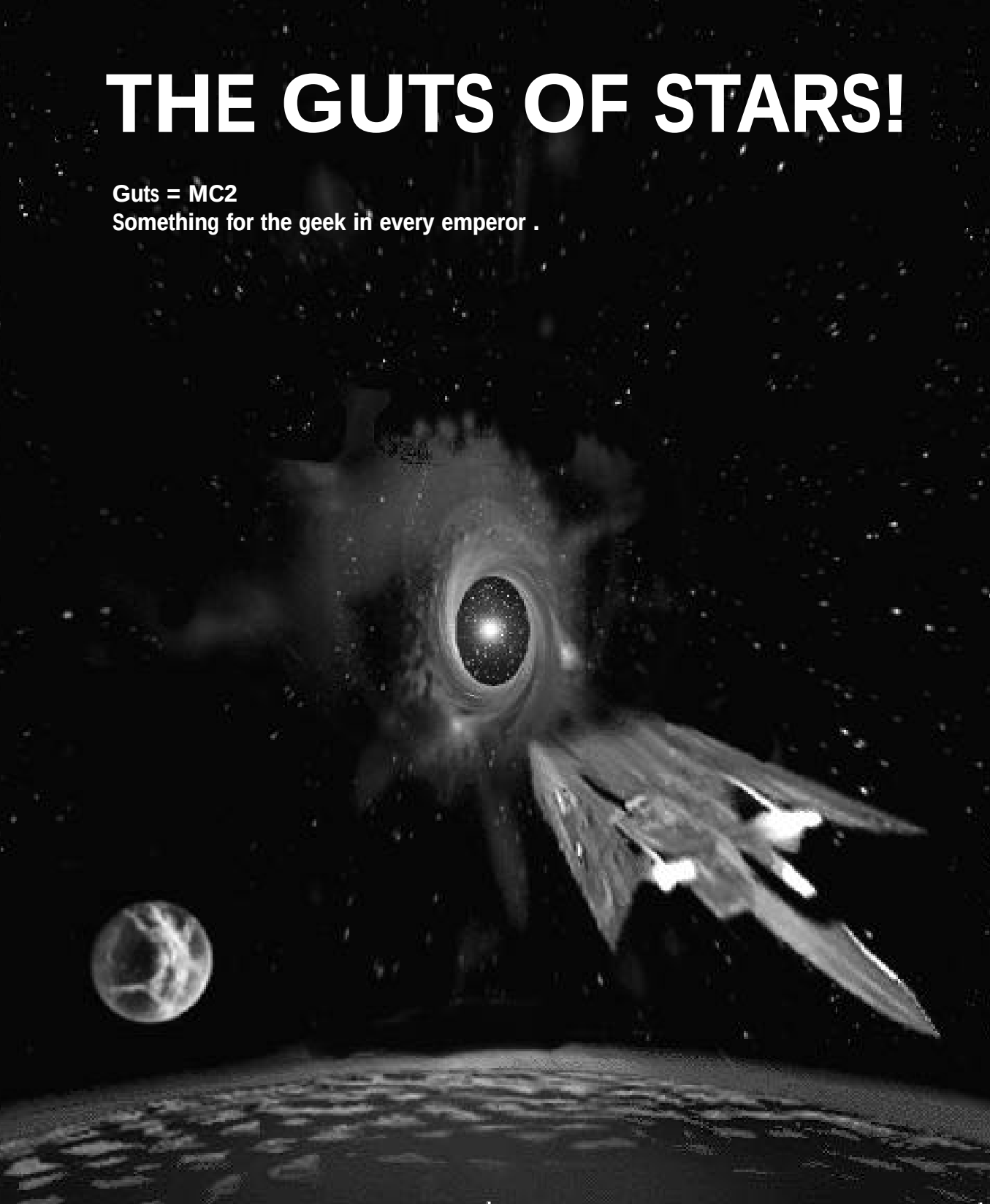
Alternators can't build normal colonization modules. They must build the more expensive Orbital Colonization modules capable of deploying as an Orbital Fort at the target world. This module can be mounted only on the colonizer hull. The hull is also capable of limited bombing to get rid of any pesky enemy startup colonies. An Orbital Colonization module can kill 2000 enemy colonists each year that it bombs.

There is a cost for traveling to other worlds. Interstellar travel kills 3% of any colonists in the fleet per year.

Alternators cannot drop colonists on worlds in order to take them over (no ground combat).

THE GUTS OF STARS!

Guts = MC2
Something for the geek in every emperor .



23 THE GUTS OF COMBAT

Here's some information to help you understand the behavior of fleets in battle. You may find it useful in planning battle strategies. It may also help satisfy your drive to collect Stars! military trivia.

ABOUT THE BATTLE BOARD

The battle board is the grid you see in the Battle VCR. The fleets are distributed on the board as tokens. Each token is a stack of identical ships from a single fleet. The individual tokens move around the board targeting enemy tokens, following the tactics specified in their battle plan. Each location can contain any number of tokens.

Battles last up to 16 rounds. One round of battle is each token getting a chance to move and fire. A round is broken into phases, where one phase is a single token moving or firing.

Each round has three parts:

First, all tokens target an enemy token that best meets their battle plan criteria.

Second, all ships move, in order from heaviest to lightest. Ships'weights are randomly adjusted by up to 15% each turn, giving ships that are nearly identical a chance to alternate going first. All ships that can move three squares this round move one square first, then all ships that can move two squares move one square, then all ships that can move at least one square move a square.

Third, weapons fire, in order from highest initiative to lowest.

ARMOR, SHIELDS AND DAMAGE

Read this section with the following section on Weapon Properties for a fuller understanding of how armor, shields and specific weapon types interact in Stars!.

Armor and Shields

Hulls have a base armor value. Additional armor is added to this value.

Shields will take damage and fail before enemy weapons attack your armor. In a token the shields overlap. For example, if your fleet has 20 scouts with shields valued at 20 each, you have a pool of 400 shields points that must be destroyed before the armor on any of those ships is damaged—unless your opponent is using torpedoes. Torpedoes damage both shields and armor, taking shield points and armor points from the token with each successful attack..

Shields are at full strength at the start of each battle. This means if you leave a battle one turn and enter a battle the next turn, your shields will be back at full strength. If you have the Regenerating Shields trait then your shields will regenerate 10% of their base value at the start of every round.

If you are using beam weapons and the damage your token can inflict on an enemy's token is more than enough to destroy the enemy token, the remainder is used on additional enemy tokens in the same location, limited only by the number of ships in the attacking token.

For example, one token does a total of 1000 dp of beam weapon damage. The primary target is destroyed after taking 500 damage. If there are 10 other tokens at the same location, each consisting of a single ship with 150 dp of armor, three tokens would be destroyed and one would take 33% damage.

If those 10 tokens had been a single token of 10 ships they would have still lost three ships, but each of the remaining seven ships would have taken less than 5% damage. If the ships had 100 dp armor and 50 dp shields each, then stacked together the shields would have absorbed all 500dp and no ships would have been lost. No combination of shields and armor would have saved those three ships with each ship in a separate token.

Damage

Damage is applied as follows: If the damage applied to a token's armor exceeds the remaining armor of one or more of the ships in the token, then those ships are destroyed. Any remaining damage is spread over the ENTIRE token, with the damage being divided up equally among the remaining ships.

A separate damage value is stored for each token in the battle. Stars! stores the percentage of ships in the token that are damaged, along with the percentage of damage to each ship.

Damage is displayed as C @ P%, where C is the count of damaged tokens in a fleet and P is the percentage of damage inflicted. For example, 10@33% says that 10 tokens are one-third damaged.

For the type of damage inflicted by beam weapons and torpedoes, read the following description of Weapons and Battle Devices.

WEAPONS AND BATTLE DEVICES

Read this section with the preceding section on Armor, Shields and Damage for a fuller understanding of how armor, shields and specific weapon types interact in Stars!.

Weapons and Starbases

All weapons mounted on Starbases get a +1 added to their range.

Beam Weapons

Beam weapons always hit their target, but decay in strength at a rate of 10% pro-rated over their maximum range. For example, a weapon that will do 100 dp to a target in the same square and has a maximum range of 3 will only do 94 dp to a target two squares away. All damage from beam weapons is applied to shields first. Any damage not absorbed by the shields is applied to armor.

If an attacking token has more than one ship and its beam weapon strike destroys the target token, then the remaining damage is applied to other tokens in range. The maximum number of tokens targeted is the number of ships in the attacking token.

The following beam weapon information is provided for comparison purposes. See the Beam Weapons section of the Technology Browser for the exact statistics of a specific weapon.

Normal Beam Weapons

Damage: From 10 to 430 damage points
Range: From 1 to 3 squares
Initiative: From 5 to 9

Range 0 Weapons

Damage: From 90 to 600 damage points
Range: Same square only
Initiative: 10 to 11

Gattling Weapons

Damage: From 13 to 200 damage points
Range: 2 squares
Initiative: 12 to 13

These are extremely powerful weapons that hit every enemy token in their range each time they fire. They also sweep minefields as if they were range 4.

Shield Sappers

Damage: From 82 to 541 damage points
Range: 3
Initiative: 14

These medium range weapons are very powerful but are only useful against shields. They have no effect on armor. They do have a higher initiative than any other weapon. This means that they will take out the enemy shields before your other weapons fire.

Shield Sappers cannot perform minesweeping.

Minesweeping

Each beam weapon automatically sweep up to (Damage x Range x Range) mines per year.

Torpedoes

Each torpedo fired has a chance of missing. For example: If a token has two ships, each with a weapon slot holding two normal torpedoes, then a single shot fires all four torpedoes. Each torpedo has a chance to hit or miss

according to its accuracy value. Normal torpedoes have an accuracy of 75%, which means that it is likely that three of the four torpedoes would hit. Torpedo accuracy can be improved using Battle Computers. Jammers can decrease the accuracy of enemy torpedoes.

Torpedoes that hit their primary target apply half of their damage directly to the armor of the target token. The other half of the damage is applied to the shields. Any damage that isn't absorbed by the shields is applied to the armor.

The maximum number of ships that can be killed by a torpedo strike is the number of torpedoes that hit. So in the preceding example the strike can kill up to 3 ships. If the target token has one ship in it and the hits caused more damage than was necessary to destroy it, then the damage is applied to other tokens in the same square. This type of damage is applied first to the shields; any damage not absorbed by the shields is applied to the armor. In no case can the number of ships destroyed exceed the number of torpedoes that hit.

Torpedoes that miss do collateral damage to the target token only. Collateral damage is 1/8th of the normal damage of the torpedo and works much like a Shield Buster beam weapon. In other words it only affects shields.

The following torpedo information is provided for comparison purposes. See the Torpedoes section of the Technology Browser for the exact statistics of a specific weapon.

Normal Torpedoes

Damage: From 5 to 300 damage points
Range: From 4 to 5 squares
Initiative: from 0 to 4
Accuracy: 35% to 80%

Capital Ship Missiles

Damage: From 85 to 525 damage points
Range: From 5 to 6 squares
Initiative: From 0 to 3
Accuracy: 20% to 30%

These powerful torpedoes do more damage than normal torpedoes and have a longer range than any other weapon. Due to their poor accuracy and the fact that a single torpedo can take out at most one enemy ship, these missiles are best mounted on starbases and battleships with a lot of Battle Computers. Their ideal use is against large ships and starbases.

Capital ship missiles do twice the stated damage if the enemy ship has no remaining shields.

Jammers

Jammers decrease torpedo accuracy. The Jammer 10 and 50 are available to Inner Strength players only. Jammer strength is additive. For example, a ship with three 20% Jammers reduces a normal torpedo's 75% accuracy by 20% three times:

75 x .8 x .8 x .8 = 38% torpedo accuracy

See the Electrical section of the Technology Browser for a descriptions of each Jammer.

Battle Computers

These devices increase the initiative of all weapons on the ship. The three different devices range from +1 to +3 initiative. They also decrease torpedo inaccuracy by 20 to 50%.

Decreasing the inaccuracy of a torpedo by a percentage is not the same as increasing the accuracy by that percentage. As torpedo accuracy becomes higher it becomes harder to improve it.

Computing the effects of a battle computer:

Example 1: A normal 75% accurate torpedo fired using a 50% battle computer.

Incorrect calculation**:** 75% x 1.5 = 112% accuracy.

Correct calculation: 100 - ((100 - 75) x .5) = 88% accuracy.

Example 2: A normal torpedo's 75% accuracy is modified by two 30% battle computers by decreasing its inaccuracy 30% twice.
100 - ((100 - 75) x .7 x .7) = %88 torpedo accuracy.

If the attacking token has battle computers and the target has jammers the devices cancel each other out on a 1% to 1% basis.

Examples:

Target token has Jammers totaling a 50% decrease in accuracy. Attacker's battle computers add up to a 45% decrease in inaccuracy. Result: 5% decrease in accuracy.

Target token has Jammers totaling a 30% decrease in accuracy. Attacker's battle computers add up to a 40% decrease in inaccuracy. Result: 10% decrease in inaccuracy.

Energy Dampener

This device slows down ALL ships in the entire battle board by 1 square of movement per round, for the duration of the battle. This is true even if the ship carrying the Dampener is destroyed before the end of the battle (the device has a lasting affect). The effect is not additive, so there is no advantage or penalty for having more than one Dampener in a battle.

Capacitors

Increase the damage caused by all beam weapons on board by a percentage. Capacitor values run from 10% to 20%. The maximum additional percentage increase in damage caused by multiple capacitors is 250%.

In this example, a ship has a beam weapon capable of 100 damage and three 10% capacitors:

100dp x 1.1 x 1.1 x 1.1 = 133dp

DAMAGE REPAIR

If after a battle your fleet has one or more ship types listed in red in the Fleet Composition tile, then you have taken damage. Click on a red ship name to display how much damage has been done.

Ship repair restores the armor value at an annual rate based on the ship's location:

Ship location	Annual rate
Moving through space	1%
Stopped in space	2%
Orbiting but not bombing an opponent's planet	3%
Orbiting a planet you own that has a space dock	20%
Orbiting a planet you own that has a starbase but not a space dock	8%
Orbiting a planet you own that does not have a starbase	5%
Orbiting a planet you're bombing	no repair (continued)

Ship location (cont)	Annual rate (cont)
Stopped or orbiting, with at least one Fuel Transport hull in the fleet	additional 5%
Stopped or orbiting, with at least one Super Fuel Xport hull in the fleet	additional 10%

For example, a ship with a base of 25 damage points (dp) plus armor with a value of 75 dp has a maximum armor value of 100 dp. It takes 10 dp of damage, it would take 2 years in deep space, or one year in orbit, to fully repair the armor.

If you're orbiting an opponent's planet and your fleet has Attack orders, repairs will not happen. Repairs also do not happen during the year a fleet is using a stargate.

During the years the starbase is under attack, the fleet will be repaired as if the starbase was not present.

Fuel Transport/XPort Hull Advantage

Notice that the table shows an advantage of using the Fuel Transport and Xport hulls: they repair other ships in the fleet, as well as collecting fuel. You only need one Fuel Transport hull in the fleet to gain the 5% increase in the repair rate, or one Super Fuel Xport to see a 10% increase. Adding extra Transport or Xport hulls doesn't increase the rate. And you always see the gain provided by the more advanced hull. Thus, if you have both Fuel Transport and Super Fuel Xport hulls in the same fleet, you gain only the 10% increase provided by the Super Fuel Xport hull.

Starbase Repair

For ordinary players, starbases are repaired at a rate of 10% a year. For players with the Inner Strength race trait, starbases are repaired at 15% a year.

MOVEMENT, INITIATIVE AND FIRING IN BATTLE

Movement

Movement is always between ½ and 2 ½ squares per round. The distance a ship can move per round is computed in ¼ squares, using the following formula:

The Formula for Movement

Movement = (Ideal_Speed_of_Engine - 4) ¼ 4
- weight ¼ 70 ¼ 4 ¼ Number_of_Engines
+/x Number_of_Maneuvering_Jets
+ ½ x Num_Overthrusters

When you calculate the formula for movement and other formulas, remember that all multiplies and divides happen before any addition or subtraction.

Movement in Squares per Round

	Round							
Movement	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
½	1	0	1	0	1	0	1	0
¾	1	1	0	1	1	1	0	1
1	1	1	1	1	1	1	1	1
1¼	2	1	1	1	2	1	1	1
1½	2	1	2	1	2	1	2	1
1¾	2	2	1	2	2	2	1	2
2	2	2	2	2	2	2	2	2
2¼	3	2	2	2	3	2	2	2
2½	3	2	3	2	3	2	3	2

Order of Movement

Movement happens in three phases:

Phase 1: All tokens that can move 3 squares this round get to move 1 square.

Phase 2: All tokens that can move 2 or more squares this round get to move 1 square.

Phase 3: All tokens that can move this round get to move 1 square.

In each phase tokens move in order from heaviest to lightest, with a margin of + ¼ - 15%.

Each token attempts to find the best square to move into that matches the tactic they've been assigned. For example, you have selected Maximize Net Damage and have a ship with a combination of range 1 and 2 weapons. Your enemy has a ship with a combination of range 1 and 2 weapons also, but

their range 1 weapons are much better than yours. You will stay at range 2 because that is where you will do the highest net damage.

Overthrusters, Maneuvering Jets and Movement

Multiple Overthrusters and Maneuvering Jets are additive. One Overthruster gives the token a speed bonus of ½ square of movement per round, with each extra Overthruster adding ½ square.

A Maneuvering Jet gives the token an extra ¼ square of movement per round of battle, with each extra Jet adding ¼ square.

Maximum movement is 2 ½ squares per round, regardless of how many Overthrusters and Maneuvering Jets the design may have.

Firing

Weapons fire in order from highest to lowest initiative. Weapons fire on a weapon slot-by-weapon slot basis, the shortest range weapons of a given initiative firing first. If the target token is destroyed, damage will stream over to other tokens in range.

Initiative

Initiative determines the *firing order* in battle. All ships have an innate hull initiative value, ranging from 0 to 18. Each battle computer increases initiative by 1, 2 or 3 points. Firing initiative is the sum of the hull initiative, battle computers, race modifiers (if you have the War Monger trait) and the weapon's initiative.

Highest initiative fires first. If a ship has a base initiative of 11 and beam weapons with an initiative of 5 for a total initiative of 16, and a second ship has a base initiative of 14 and a torpedo weapon with an initiative of 3 for a total initiative of 17, the second ship fires first. If the torpedo ship also had a second weapon with an initiative of 1 then the torpedo would fire first, the other ship's beams would fire, followed by the torpedo ship's second weapon.

24 THE GUTS OF CLOAKING

In order for matter to be cloaked, it requires a certain number of cloaking units per kT. When a ship is empty, its cloak provides the maximum amount of cloaking possible with that device. When the ship has cargo, the weight of the cargo reduces the number of cloak units per kT, and thus, the cloaking percentage.

CLOAKING WHEN THE SHIP IS EMPTY

To determine the total number of cloaking units for an unladen ship, read the following table:

Cloaking Device	Cloak Units/kT	Max Cloaking %
Transport Cloak*	300	75
Stealth Cloak	70	35
Super-Stealth Cloak	140	55
Ultra-Stealth Cloak*	540	85
Shadow Shield*	70	35
Depleted Neutronium Armor*	50	25
Chameleon Scanner*	40	20

Cloaks marked here with an * are available only to Super Stealth races.

For example, an empty ship with a Stealth Cloak has 70 cloak units/kT, or 35% cloaking. By itself, the ship is visible to enemy scanners at only 35% of their maximum range.

When a cloaked ship has cargo, we need to recalculate the number of cloak units/kT available. Let's say this ship is a small freighter with a Quick Jump 5 engine, Tritanium Armor, and a Stealth Cloak. Empty, it weighs 91kT, with 70 cloak units/kT, and is cloaked at 35%. If you completely fill this particular

freighter with cargo, it weighs 161kT. To calculate the new cloaking percentage:

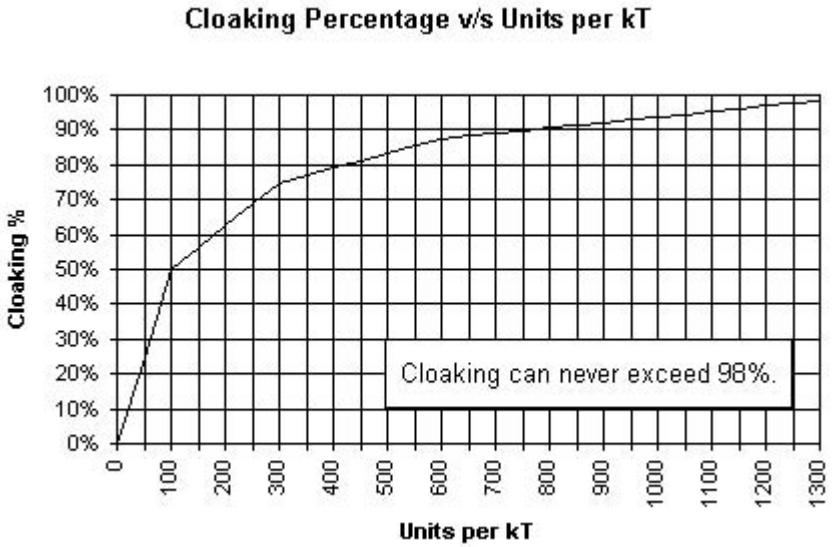
1. Calculate the total number of cloaking units for the ship:
   Max_cloak_units/kT x Ship_mass_empty.

   Example: 70 units/kT x 91kT = 6370 total cloak units

2. Calculate the actual units/kT:
   Total_units / Ship_mass_with_cargo

   Example: 6370 / 161 kT = ~40 units/kT

Use the following chart to learn how much coverage a given number of cloaking units provides.



At 40 cloak units/kT, the loaded freighter in our example is now only 20% cloaked. The following table provides exact numbers at certain points on the graph, allowing for more precise calculations.

100 units/kT	50% cloaked
300 units/kT	75% cloaked
600 units/kT	87.5% cloaked
1000 units/kT	93.75% cloaked

CLOAKING FOR A FLEET WITH MORE THAN ONE SHIP

In a fleet with more than one ship, uncloaked ships are counted as cargo when calculating units/kT. Let's place our empty freighter in a fleet with an empty scout that has a Quick Jump 5 engine, Laser, and a Bat Scanner, which weighs 15kT when empty. The entire fleet weighs 106kT, so traveling together, this fleet would be 6370 / 106 = ~60 units/kT, approximately 30% cloaked.

Cargo does not affect cloaking for races with the Super Stealth trait.

THE EFFECT OF MULTIPLE TACHYON DETECTORS

When a hull has more than one Tachyon Detector in its design, the effectiveness is calculated as follows:

95% ^ (SQRT(#_of_detectors) = Reduction in other player's cloaking

THE APPENDIX OF CLOAKING

Here's pseudo code you can use to determine cloaking percentage from cloaking points per kT.

```
if points <= 100
   percent = point / 2
else
   points = points - 100
   if points <= 200
      percent = 50 + points / 8
   else
      points = points - 200
      if points <= 312
         percent = 75 + points / 24
      else
         points = points - 312
         if points <= 512
            percent = 88 + points / 64
         else if points < 768
            percent = 96
         else if points < 1000
            percent = 97
         else
            percent = 98
         end if
      end if
   end if
end if
```

25 THE GUTS OF MASS DRIVERS

DAMAGE POTENTIAL OF MINERAL PACKETS

So you always wondered exactly what sort of damage a mineral packet was capable of doing? Here's the scoop on mass packets.

Mineral packets can be flung at speeds from Warp 5 to 3 Warp levels above the driver's rated speed. Exceeding the rated speed will form unstable packets that will disintegrate and lose minerals as they travel. Thus, with a top of the line Warp 13 mass accelerator, you can fling packets at speeds up to Warp 16.

Why would you want to fling packets slower than the rated speed? Simple: the planet you are sending packets to doesn't have an driver capable of catching the faster packets and you don't want to kill off your own colonists.

PACKET DECAY RATE

Packets thrown over the rated speed of the mass driver decay as follows:

+1 Warp 10% / year (turn)
+2 Warp 25% / year (turn)
+3 Warp 50% / year (turn)

There is a minimum decay of 10kT of each mineral in the packet each year.

Packets decay in both the year they are launched and the year they reach their destination by a prorated amount based on the distance they traveled that year. The decay rate is not of the original amount in the packet, but the current amount.

If you have the Interstellar Traveler trait, packets flung at or below the driver's rated speed decay at 10% per year. Overflung packets decay as if flung at one Warp speed higher.

If you have the Packet Physics trait, the decay rate is half the state stated rate; as is the minimum decay.

SPEED AND DISTANCE

Warp N means that something traveling at that speed will cover N x N light years per year. Thus, a Warp 16 packet will travel 256 light years each turn!

DAMAGE AND RECOVERY FORMULAS AND CALCULATION

When a packet hits a planet without a mass driver, or with a mass driver rated beneath the speed of the incoming packet, damage will be done. Damage is determined by the speed of the packet, not the rating of the driver sending the packet. For example, if a Warp 5 driver flings a packet at Warp 8 to another Warp 5 driver, damage will be done to the receiver.

Speed

spdPacket = Packet Warp ^ 2
spdReceiver = Rcvr Accel ^ 2

Percent Caught Safely

The percentage of the packet recovered intact.
%CaughtSafely = spdReceiver / spdPacket

Minerals Recovered

The receiver recovers 1/3 of the portion not caught safely.
(packetkT x %CaughtSafely + packetkT x %remaining x 1/3)

Raw Damage
dmgRaw = (spdPacket - spdReceiver) x wtPacket / 160

Raw Damage modified by planetary defenses

dmgRaw2 = dmgRaw x (100% - pctDefCoverage)

Colonists Killed

The number colonists killed is the larger (maximum) of the following:
dmgRaw2 x Population / 1000
dmgRaw2 x 100

Planetary Defenses Destroyed

#destroyed = #defenses x dmgRaw2 / 1000
If #destroyed is less than dmgRaw2 / 20, then it is that number.

Interstellar Traveller Trait Affects Catching Packets

Races with the Interstellar trait are only 1/2 as effective at catching packets. To calculate the damage taken, divide speed_received by two.

Example

You fling a 1000kT packet at Warp 10 at a planet with a Warp 5 driver, a population of 250,000 and 50 defenses preventing 60% of incoming damage.

spdPacket = 100
spdReceiver = 25
%CaughtSafely = 25%
minerals recovered = 1000kT x 25% + 1000kT x 75% x 1/3 = 250 + 250 = 500kT
dmgRaw = 75 x 1000 / 160 = 469
dmgRaw2 = 469 x 40% = 188
#colonists killed = Max. of (188 x 250,000 / 1000, 188 x 100)
= Max. of (47,000, 18800) = 47,000 colonists
#defenses destroyed = 50 * 188 / 1000 = 9 (rounded down)

If, however, the receiving planet had no mass driver or defenses, the damage is far greater:

minerals recovered = 1000kT x 0% + 1000kT x 100% x 1/3 = only 333kT
dmgRaw = 100 x 1000 / 160 = 625
dmgRaw2 = 625 x 100% = 625
#colonists killed = Max. of (625 x 250,000 / 1000, 625 x 100)
= Max. of (156,250, 62500) = 156,250.

If the packet increased speed up to Warp 13, then:

dmgRaw2 = dmgRaw = 169 x 1000 / 160 = 1056
#colonists killed = Max. of (1056 x 250,000 / 1000, 1056 x 100)
= Max. of (264,000, 105600) destroying the colony

Learn more about Mass Drivers, p 6-11

26 The Guts of Minefields

TYPES OF MINES

Normal

Effect: Blows up.

Maximum safe speed: Warp 4

Damage/ship: 100 (125 for ramscoops) for each engine

Minimum fleet damage: 500 points (600 for ramscoops)

Probability of hitting one: 0.3% per light year traveled for each warp over the safe speed.

Example: A fleet traveling Warp 9 has a 1.5% chance per light year traveled in a turn. Traveling 10 light years through the minefield that turn, the fleet has a 10.5% chance of triggering a mine.

Heavy

Effect: Blows up.

Maximum safe speed: Warp 6

Damage/ship: 500 (600 for ramscoops)

Minimum fleet damage points: 2000 (2500 for ramscoops)

Probability of hitting one: 1% per light year traveled for each warp over the safe speed.

Example: A fleet traveling Warp 9 has a 3% chance per light year traveled in a turn. Traveling 10 light years through the minefield that turn, the fleet has a 30% chance of triggering a mine.

Speed Trap

Effect: Halts the fleet, does no damage.

Maximum safe speed: Warp 5

Damage/ship: none

Minimum fleet damage: none

Probability of hitting one: 3% per light year traveled for each warp over the safe speed.

Example: A fleet traveling Warp 9 has a 15% chance per light year traveled in a turn. Traveling 10 light years through the minefield that turn, the fleet is going to trigger a mine.

DETECTING MINEFIELDS

Cloaked value of minefields

Penetrating Scanners: 0%

Non-Penetrating Scanners: 75%

Conditions for detecting an opponent's minefield

You can see both the center and radius of an opponent's minefields if:

- the center of the minefield is in range of your penetrating scanner, OR
- You have hit the minefield at least once and the center is in range of your normal scanners OR
- You are IN the mine field.

SHIP CLOAK EFFECTIVENESS IN MINEFIELDS

When a ship is in a minefield, and the mines are acting as scanners, the ship's cloak effectiveness is always an absolute value (90% cloak = 10% chance of detection). Only races with the Space Demolition trait can use minesfields as (non-penetrating) scanners.

RACE TRAITS AND MINEFIELDS

Special Capabilities

For Space demolition races, minefields act as normal scanners but do not detect fleets orbiting planets.

Mine Dispensers Available by Race

Space Demolition:

Mine Dispenser 40 (lays 40/year)
Mine Dispenser 50 (lays 50/year), available to all except War Monger
Mine Dispenser 80 (lays 80/year)
Mine Dispenser 130 (lays 100/year)
Heavy Dispenser 50 (lays 50/year)
Heavy Dispenser 110 (lays 110/year)
Heavy Dispenser 200 (lays 200/year)
Speed Trap 20 (lays 20/year), requires Space Demolition or Inner-Strength trait
Speed Trap 30 (lays 30/year)
Speed Trap 50 (lays 50/year)

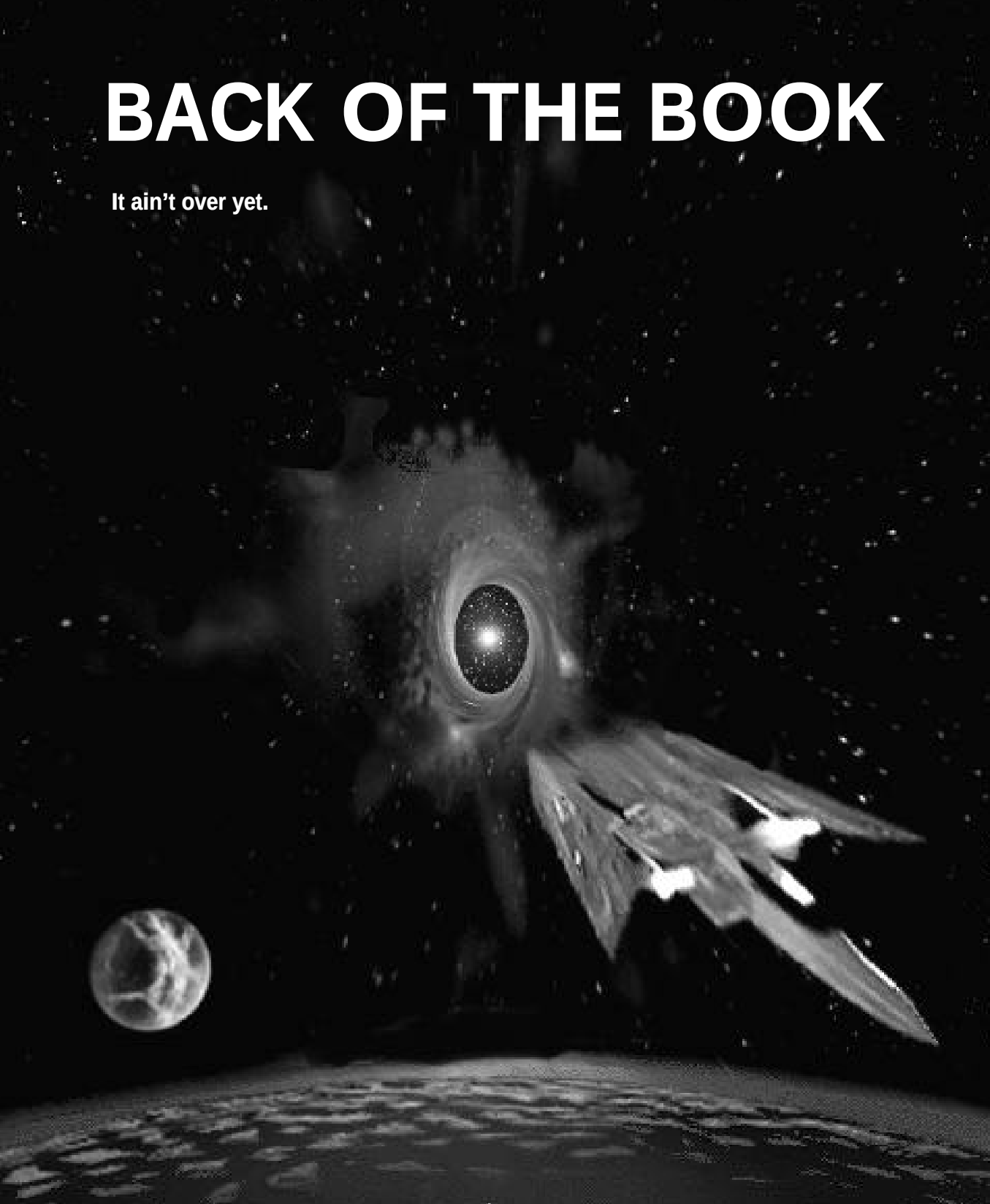
Inner Strength: Mine Dispenser 50 and Speed Trap 20

War Monger: War Monger races can't lay mines. No mine dispensers of any type for these bloodthirsty minions.

All Other Races: Mine Dispenser 50 only

BACK OF THE BOOK

It ain't over yet.



A KEYBOARD SHORTCUTS

Press	*To*
F1	Open the online help.
F2	Open the **Technology Browser**.
F3	First press opens the **Planet Summary Report** . Second press opens your **Fleet Summary Report** . Third press opens the **Other's Fleet Summary Report** . Fourth press opens the **Battle Report** . Fifth press closes the report window.
F4	Open the **Ship Design** dialog.
F5	Open the **Research** dialog.
F6	Open the **Battle Plans** dialog.
F7	Open the **Player Relations** dialog.
F8	Open the **View Race** dialog.
F9	Generate a **new turn**, immediately.
F10	Display your **score**.
1, **2**, **3**, **4**, **5**, **6**	Change the **Scanner view**: Normal (1), Surface Mineral (2), Mineral Concentration (3), Planet Value (4), Population (5), No Player Info (6).
7, **8**, **9**, **0**, **SHIFT-0**	Toggle these **Scanner overlays**: Radar Coverage (7), Mine Fields (8), Fleet Paths (9), Planet Names (0), Ship Count (SHIFT-0)
Esc	Close the displayed **report**.
CTRL F	**Find** a planet or fleet in the Scanner.
+ / **-**	**Zoom** in and out of the Scanner.
Up / **Down arrow**	Displays the previous message and next messages.
Home / **End**	Display the first and last messages in the Messages pane.
Enter	Go from the Messages pane to the **related dialog or location**
Backspace / **Delete**	Delete the selected waypoint.
p / **n**	Display the previous or next planet or fleet in the Command pane.
P / **N**	Display the previous or next planet with a starbase in the Command pane.
[/ **]**	Find previous or next fleet owned by another player. Requires the Other's Fleet Report to be open.
q	Open the Production dialog.
v	Find your location in the Scanner pane.
f	Display your fleet or planet with the lowest ID number in the Command pane. If the fleet is already selected the planet is displayed, and vice versa.
,	Decrease the selected fleet's warp speed to the current waypoint by one.
.	Increase the selected fleet's warp speed to the current waypoint by one.

B TECHNOLOGY TABLES

These tables list statistics on each piece of technology available in Stars! Use the following guide to determine the unit of measure for a statistic:

If the category is a technology, such as Energy, the unit is in levels of technology successfully researched.

If the category is weight or a mineral name, the unit is in kilotons (kT).

DP or Dmg measure damage in points or percentage to a hull, people or surface installations.

Range is number of squares on the battle board (displayed in the VCR).

Fuel # indicates the percentage of standard fuel usage for that engine at the warp speed indicated by the number.

Ability refers to different things for each type of technology. For a description of an ability, open the Technology Browser and view the page for that item.

ARMOR

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	DP
Tritanium	0	0	0	0	0	0	60	10	5	0	0	50
Crobmnium	0	0	0	3	0	0	56	13	6	0	0	75
Carbonic Armor	0	0	0	0	0	4	25	15	0	0	5	100
Strobnium	0	0	0	6	0	0	54	18	8	0	0	120
Organic Armor	0	0	0	0	0	7	15	20	0	0	6	175
Kelarium	0	0	0	9	0	0	50	25	9	1	0	180
Fielded Kelarium	4	0	0	10	0	0	50	28	10	0	2	175
Depleted Neutronium	0	0	0	10	3	0	50	28	10	0	2	200
Neutronium	0	0	0	12	0	0	45	30	11	2	1	275
Valanium	0	0	0	16	0	0	40	50	15	0	0	500
Superlatanium	0	0	0	24	0	0	30	100	25	0	0	1500

BEAM WEAPONS

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	Range	DP	Initiative
Laser	0	0	0	0	0	0	1	5	0	6	0	1	10	9
X-Ray Laser	0	3	0	0	0	0	1	6	0	6	0	1	16	9
Mini Gun	0	5	0	0	0	0	3	10	0	16	0	2	13	12
Yakimora Light Phaser	0	6	0	0	0	0	1	7	0	8	0	1	26	9
Blackjack	0	7	0	0	0	0	10	7	0	16	0	0	90	10
Phaser Bazooka	0	8	0	0	0	0	2	11	0	8	0	2	26	7
Pulsed Sapper	5	9	0	0	0	0	1	12	0	0	4	3	82	14
Colloidal Phaser	0	10	0	0	0	0	2	18	0	14	0	3	26	5
Gatling Gun	0	11	0	0	0	0	3	13	0	20	0	2	31	12
Mini Blaster	0	12	0	0	0	0	1	9	0	10	0	1	66	9
Bludgeon	0	13	0	0	0	0	10	9	0	22	0	0	231	10
Mark IV Blaster	0	14	0	0	0	0	2	15	0	12	0	2	66	7
Phased Sapper	8	15	0	0	0	0	1	16	0	0	6	3	211	14
Heavy Blaster	0	16	0	0	0	0	2	25	0	20	0	3	66	5
Gatling Neutrino Cannon	0	17	0	0	0	0	3	17	0	28	0	2	80	13
Myopic Disruptor	0	18	0	0	0	0	1	12	0	14	0	1	169	9
Blunderbuss	0	19	0	0	0	0	10	13	0	30	0	0	592	11
Disruptor	0	20	0	0	0	0	2	20	0	16	0	2	169	8
Syncro Sapper	11	21	0	0	0	0	1	21	0	0	8	3	541	14
Mega Disruptor	0	22	0	0	0	0	2	33	0	30	0	3	169	6
Big Mutha Cannon	0	23	0	0	0	0	3	23	0	36	0	2	204	13
Streaming Pulverizer	0	24	0	0	0	0	1	16	0	20	0	1	433	9
Anti-Matter Pulverizer	0	26	0	0	0	0	2	27	0	22	0	2	433	8

BOMBS

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	Kill	Destroy
Lady Finger Bomb	0	2	0	0	0	0	40	5	1	20	0	0.6	0.2
Black Cat Bomb	0	5	0	0	0	0	45	7	1	22	0	0.9	0.4
M-70 Bomb	0	8	0	0	0	0	50	9	1	24	0	1.2	0.6
M-80 Bomb	0	11	0	0	0	0	55	12	1	25	0	1.7	0.7
Cherry Bomb	0	14	0	0	0	0	52	11	1	25	0	2.5	1.0
LBU-17 Bomb	0	5	0	0	8	0	30	7	1	15	15	0.2	1.6
LBU-32 Bomb	0	10	0	0	10	0	35	10	1	24	15	0.3	2.8
LBU-74 Bomb	0	15	0	0	12	0	45	14	1	33	12	0.4	4.5
Retro Bomb	0	10	0	0	0	12	45	50	15	15	10	0.0	0.0
Smart Bomb	0	5	0	0	0	7	50	27	1	22	0	1.3	0.0
Neutron Bomb	0	10	0	0	0	10	57	30	1	30	0	2.2	0.0
Enriched Neutron Bomb	0	15	0	0	0	12	64	25	1	36	0	3.5	0.0
Peerless Bomb	0	22	0	0	0	15	55	32	1	33	0	5.0	0.0
Annihilator Bomb	0	26	0	0	0	17	50	28	1	30	0	7.0	0.0

ELECTRICAL

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	Ability
Transport Cloaking	0	0	0	0	0	0	1	3	2	0	2	300
Stealth Cloak	2	0	0	0	5	0	2	5	2	0	2	70
Super-Stealth Cloak	4	0	0	0	10	0	3	15	8	0	8	140
Ultra-Stealth Cloak	10	0	0	0	12	0	5	25	10	0	10	540
Battle Computer	0	0	0	0	0	0	1	6	0	0	15	20
Battle Super Computer	5	0	0	0	11	0	1	14	0	0	25	30
Battle Nexus	10	0	0	0	19	0	1	15	0	0	30	50
Jammer 10	2	0	0	0	6	0	1	6	0	0	2	10
Jammer 20	4	0	0	0	10	0	1	20	1	0	5	20
Jammer 30	8	0	0	0	16	0	1	20	1	0	6	30
Jammer 50	16	0	0	0	22	0	1	20	2	0	7	50
Energy Capacitor	7	0	0	0	4	0	1	5	0	0	8	10
Flux Capacitor	14	0	0	0	8	0	1	5	0	0	8	20
Energy Dampener	14	0	8	0	0	0	2	50	5	10	0	-4
Tachyon Detector	8	0	0	0	14	0	1	70	1	5	0	-5
Anti-matter Generator	0	12	0	0	0	7	10	10	8	3	3	200

ENGINES

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	Warp 1	Warp 2	Warp 3	Warp 4	Warp 5	Warp 6	Warp 7	Warp 8	Warp 9	Warp 10
Settler's Delight	0	0	0	0	0	0	2	2	1	0	1	0	0	0	0	0	0	140	275	480	576
Quick Jump 5	0	0	0	0	0	0	4	3	3	0	1	0	25	100	100	100	180	500	800	900	1080
Fuel Mizer	0	0	2	0	0	0	6	11	8	0	0	0	0	0	0	35	120	175	235	360	420
Long Hump 6	0	0	3	0	0	0	9	6	5	0	1	0	20	60	100	100	105	450	750	900	1080
Daddy Long Legs 7	0	0	5	0	0	0	13	12	11	0	3	0	20	60	70	100	100	110	600	750	900
Alpha Drive 8	0	0	7	0	0	0	17	28	16	0	3	0	15	50	60	70	100	100	115	700	840
Trans-Galactic Drive	0	0	9	0	0	0	25	50	20	20	9	0	15	35	45	55	70	80	90	100	120
Interspace-10	0	0	11	0	0	0	25	60	18	25	10	0	10	30	40	50	60	70	80	90	100
Trans-Star 10	0	0	23	0	0	0	5	10	3	0	3	0	5	15	20	25	30	35	40	45	50
Radiating Hydro-Ram Scoop	2	0	6	0	0	0	10	8	3	2	9	0	0	0	0	0	0	165	375	600	720
Sub-Galactic Fuel Scoop	2	0	8	0	0	0	20	12	4	4	7	0	0	0	0	0	85	105	210	380	456
Trans-Galactic Fuel Scoop	3	0	9	0	0	0	19	18	5	4	12	0	0	0	0	0	0	88	100	145	174
Trans-Galactic Super Scoop	4	0	12	0	0	0	18	24	6	4	16	0	0	0	0	0	0	0	65	90	108
Trans-Galactic Mizer Scoop	4	0	16	0	0	0	11	20	5	2	13	0	0	0	0	0	0	0	0	70	84
Galaxy Scoop	5	0	20	0	0	0	8	12	4	2	9	0	0	0	0	0	0	0	0	0	60

HULLS

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	Fuel	Cargo	DP	Initiative
Small Freighter	0	0	0	0	0	0	25	20	12	0	17	130	70	25	0
Medium Freighter	0	0	0	3	0	0	60	40	20	0	19	450	210	50	0
Large Freighter	0	0	0	8	0	0	125	100	35	0	21	2600	1200	150	0
Super Freighter	0	0	0	13	0	0	175	125	45	0	21	8000	3000	400	0
Scout	0	0	0	0	0	0	8	10	4	2	4	50	0	20	1
Frigate	0	0	0	6	0	0	8	12	4	2	4	125	0	45	4
Destroyer	0	0	0	3	0	0	30	35	15	3	5	280	0	200	3
Cruiser	0	0	0	9	0	0	90	85	40	5	8	600	0	700	5
Battle Cruiser	0	0	0	10	0	0	120	120	55	8	12	1400	0	1000	5
Battleship	0	0	0	13	0	0	222	225	120	25	20	2800	0	2000	10
Dreadnought	0	0	0	16	0	0	250	275	140	30	25	4500	0	4500	10
Privateer	0	0	0	4	0	0	65	50	50	3	2	650	250	150	3
Rogue	0	0	0	8	0	0	75	60	80	5	5	2250	500	450	4
Galleon	0	0	0	11	0	0	125	105	70	5	5	2500	1000	900	4
Mini-Colony Ship	0	0	0	0	0	0	8	3	2	0	2	150	10	10	0
Colony Ship	0	0	0	0	0	0	20	20	10	0	15	200	25	20	0
Mini Bomber	0	0	0	1	0	0	28	35	20	5	10	120	0	50	0
B-17 Bomber	0	0	0	6	0	0	69	150	55	10	10	400	0	175	0
Stealth Bomber	0	0	0	8	0	0	70	175	55	10	15	750	0	225	0
B-52 Bomber	0	0	0	15	0	0	110	280	90	15	10	750	0	450	0
Midget Miner	0	0	0	0	0	0	10	20	10	0	3	210	0	100	0
Mini-Miner	0	0	0	2	0	0	80	50	25	0	6	210	0	130	0
Miner	0	0	0	6	0	0	110	110	32	0	6	500	0	475	0
Maxi-Miner	0	0	0	11	0	0	110	140	32	0	6	850	0	1400	0
Ultra-Miner	0	0	0	14	0	0	100	130	30	0	6	1300	0	1500	0
Fuel Transport	0	0	0	4	0	0	12	50	10	0	5	750	0	5	0
Super-Fuel Xport	0	0	0	7	0	0	111	70	20	0	8	2250	0	12	0
Mini Mine Layer	0	0	0	0	0	0	10	20	8	2	5	400	0	60	0
Super Mine Layer	0	0	0	15	0	0	30	30	20	3	9	2200	0	1200	0
Nubian	0	0	0	26	0	0	100	150	75	12	12	5000	0	5000	2
Meta Morph	0	0	0	10	0	0	85	120	50	12	12	700	300	500	2

MECHANICAL

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	Ability
Colonization Module	0	0	0	0	0	0	32	10	12	10	10	0
Orbital Construction Module	0	0	0	0	0	0	50	20	20	15	15	20
Cargo Pod	0	0	0	3	0	0	5	10	5	0	2	50
Super Cargo Pod	3	0	0	9	0	0	7	15	8	0	2	100
Fuel Tank	0	0	0	0	0	0	3	4	6	0	0	250
Super Fuel Tank	6	0	4	14	0	0	8	8	8	0	0	500
Maneuvering Jet	2	0	3	0	0	0	5	10	5	0	5	1
Overthruster	5	0	12	0	0	0	5	20	10	0	8	2
Beam Deflector	6	6	0	6	6	0	1	8	0	0	10	-10

MINES

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	Mines/Year
Mine Dispenser 40	0	0	0	0	0	0	25	45	2	10	8	40
Mine Dispenser 50	2	0	0	0	0	4	30	55	2	12	10	50
Mine Dispenser 80	3	0	0	0	0	7	30	65	2	14	10	80
Mine Dispenser 130	6	0	0	0	0	12	30	80	2	18	10	130
Heavy Dispenser 50	5	0	0	0	0	3	10	50	2	20	5	50
Heavy Dispenser 110	9	0	0	0	0	5	15	70	2	30	5	110
Heavy Dispenser 200	14	0	0	0	0	7	20	90	2	45	5	200
Speed Trap 20	0	0	2	0	0	2	100	60	30	0	12	20
Speed Trap 30	0	0	3	0	0	6	135	72	32	0	14	30
Speed Trap 50	0	0	5	0	0	11	140	80	40	0	15	50

PLANETARY

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Resources	Ironium	Boranium	Germanium	Ability
Viewer 50	0	0	0	0	0	0	100	10	10	70	50
Viewer 90	0	0	0	0	1	0	100	10	10	70	90
Scoper 150	0	0	0	0	3	0	100	10	10	70	150
Scoper 220	0	0	0	0	6	0	100	10	10	70	220
Scoper 280	0	0	0	0	8	0	100	10	10	70	280
Snooper 320X	3	0	0	0	10	3	100	10	10	70	320
Snooper 400X	4	0	0	0	13	6	100	10	10	70	400
Snooper 500X	5	0	0	0	16	7	100	10	10	70	500
Snooper 620X	7	0	0	0	23	9	100	10	10	70	620
SDI	0	0	0	0	0	0	15	5	5	5	10
Missile Battery	5	0	0	0	0	0	15	5	5	5	20
Laser Battery	10	0	0	0	0	0	15	5	5	5	24
Planetary Shield	16	0	0	0	0	0	15	5	5	5	30
Neutron Shield	23	0	0	0	0	0	15	5	5	5	38

SCANNERS

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	Range
Bat Scanner	0	0	0	0	0	0	2	1	1	0	1	0
Rhino Scanner	0	0	0	0	1	0	5	3	3	0	2	50
Mole Scanner	0	0	0	0	4	0	2	9	2	0	2	100
DNA Scanner	0	0	3	0	0	6	2	5	1	1	1	125
Possum Scanner	0	0	0	0	5	0	3	18	3	0	3	150
Pick Pocket Scanner	4	0	0	0	4	4	15	35	8	10	6	80
Chameleon Scanner	3	0	0	0	6	0	6	25	4	6	4	160
Ferret Scanner	3	0	0	0	7	2	2	36	2	0	8	185
Dolphin Scanner	5	0	0	0	10	4	4	40	5	5	10	220
Gazelle Scanner	4	0	0	0	8	0	5	24	4	0	5	225
RNA Scanner	0	0	5	0	0	10	2	20	1	1	2	230
Cheetah Scanner	5	0	0	0	11	0	4	50	3	1	13	275
Elephant Scanner	6	0	0	0	16	7	6	70	8	5	14	300
Eagle Eye Scanner	6	0	0	0	14	0	3	64	3	2	21	335
Robber Baron Scanner	10	0	0	0	15	10	20	90	10	10	10	220
Peerless Scanner	7	0	0	0	24	0	4	90	3	2	30	500

SHIELDS

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	DP
Mole-skin Shield	0	0	0	0	0	0	1	4	1	0	1	25
Cow-hide Shield	3	0	0	0	0	0	1	5	2	0	2	40
Wolverine Diffuse Shield	6	0	0	0	0	0	1	6	3	0	3	60
Croby Sharmor	7	0	0	4	0	0	10	15	7	0	4	60
Shadow Shield	7	0	0	0	3	0	2	7	3	0	3	75
Bear Neutrino Barrier	10	0	0	0	0	0	1	8	4	0	4	100
Gorilla Delagator	14	0	0	0	0	0	1	11	5	0	6	175
Elephant Hide Fortress	18	0	0	0	0	0	1	15	8	0	10	300
Complete Phase Shield	22	0	0	0	0	0	1	20	12	0	15	500

STARBASE HULLS

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Resources	Ironium	Boranium	Germanium	Dock Capacity	DP	Initiative
Orbital Fort	0	0	0	0	0	0	80	24	0	34	0	100	10
Space Dock	0	0	0	4	0	0	200	40	10	50	200	250	12
Space Station	0	0	0	0	0	0	1200	240	160	500	-1	500	14
Ultra Station	0	0	0	12	0	0	1200	240	160	600	-1	1000	16
Death Star	0	0	0	17	0	0	1500	240	160	700	-1	1500	18

TERRAFORMING

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Resources	Ability
Total Terraform ±3	0	0	0	0	0	0	70	3
Total Terraform ±5	0	0	0	0	0	3	70	5
Total Terraform ±7	0	0	0	0	0	6	70	7
Total Terraform ±10	0	0	0	0	0	9	70	10
Total Terraform ±15	0	0	0	0	0	13	70	15
Total Terraform ±20	0	0	0	0	0	17	70	20
Total Terraform ±25	0	0	0	0	0	22	70	25
Total Terraform ±30	0	0	0	0	0	25	70	30
Gravity Terraform ±3	0	0	1	0	0	1	100	3
Gravity Terraform ±7	0	0	5	0	0	2	100	7
Gravity Terraform ±11	0	0	10	0	0	3	100	11
Gravity Terraform ±15	0	0	16	0	0	4	100	15
Temp Terraform ±3	1	0	0	0	0	1	100	3
Temp Terraform ±7	5	0	0	0	0	2	100	7
Temp Terraform ±11	10	0	0	0	0	3	100	11
Temp Terraform ±15	16	0	0	0	0	4	100	15
Radiation Terraform ±3	0	1	0	0	0	1	100	3
Radiation Terraform ±7	0	5	0	0	0	2	100	7
Radiation Terraform ±11	0	10	0	0	0	3	100	11
Radiation Terraform ±15	0	16	0	0	0	4	100	15

TORPEDOES

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	Range	DP	Initiative	Hit Chance
Alpha Torpedo	0	0	0	0	0	0	25	5	9	3	3	4	5	0	35
Beta Torpedo	0	5	1	0	0	0	25	6	18	6	4	4	12	1	45
Delta Torpedo	0	10	2	0	0	0	25	8	22	8	5	4	26	1	60
Epsilon Torpedo	0	14	3	0	0	0	25	10	30	10	6	5	48	2	65
Rho Torpedo	0	18	4	0	0	0	25	12	34	12	8	5	90	2	75
Upsilon Torpedo	0	22	5	0	0	0	25	15	40	14	9	5	169	3	75
Omega Torpedo	0	26	6	0	0	0	25	18	52	18	12	5	316	4	80
Anti Matter Torpedo	0	11	12	0	0	21	8	50	3	8	1	6	60	0	85
Jihad Missile	0	12	6	0	0	0	35	13	37	13	9	5	85	0	20
Juggernaut Missile	0	16	8	0	0	0	35	16	48	16	11	5	150	1	20
Doomsday Missile	0	20	10	0	0	0	35	20	60	20	13	6	280	2	25
Armageddon Missile	0	24	10	0	0	0	35	24	67	23	16	6	525	3	30

C FILES USED IN STARS!

HOST FILE — GAMENAME.HST

This is the file containing the information the host program needs for a specific game. This file should be available only to the person playing the host.

UNIVERSE FILE — GAMENAME.XY

This is the universe file, containing information about the positions of all the planets. It does not change over the course of the game. Individual players as well as the host program need to have this file available to them.

TURN FILE — GAMENAME.MN

These are the turn files. N is a number from 1 to 16, representing the player number. This is the individual file for each player, containing all the data about that player's race and state of the player's empire at the beginning of a turn.

RACE DESCRIPTION FILE — NAME.RN FILES

This file contains a race description created and saved using the Custom Race Wizard. N can be any number (you can actually use any extension, the default is r1.) You can specify a race file for each non-computer player in the game from step 2 of the New Advanced Game dialog. Once the universe has been created the race file is no longer needed. If you open this file using **File** (**Open**), the Custom Race Wizard opens.

The extension of .r1 is the default, and is not required.

LOG FILE —- GAMENAME.XN

These are the log files. N is a number from 1 to 16, representing the player number. This is the log of orders given by a player for the current turn. This file is submitted, either automatically or manually, to the host program. The host adds the changes to the player's .mN file, and returns that file to the player when the new turn is generated. The host needs these files to update the information about each player from the .hst file before turn generation.

Each time the player opens (or continues) a game, the .mN file is loaded. If a corresponding log file exists, it will also be loaded to update the game's current state.

HISTORY FILE —- GAMENAME.HN

These are history files. N is a number from 1 to 16, representing the player number. This file is created by the player as he sees universe data. It is a history of the things the player has seen or learned on previous turns. Typically, only the player maintains a copy of this file. If a player will be absent for a few turns, and wishes to be temporarily replaced by the Housekeeper AI, a copy of this file should be given to the host so the absent player's view of the universe can be updated.

If this file is lost, corrupted or moved to another directory, the player will not see what's been done in past turns.

INI FILE — STARS.INI

The stars.ini file is located in the windows directory. Stars! stores player options and current game information in this file. Most of the items in the file have to do with relatively unimportant stuff like the arrangement and windows, the current scanner view and overlays.

The following items in the stars.ini are user changeable:

Default Password

Set the password in the [Misc] section of stars.ini:

```
DefaultPassword=Foo
```

Where Foo is whatever password you generally use. If you are sure that your opponents will not have access to your stars.ini file you can set this to your

password. Whenever you open a game file that is protected by this password you will not be prompted to enter it.

Number of Backup Directories

Set this option in the [Misc] section of stars.ini:

```
Backups=N
```

Where N is a number between 1 and 999. Backup directories will be named Backup1 to BackupN and old game files will be stored there according to the turn number. For example with backups=4 then the first turn would be backed up to the directory backup1, the second to backup2, the third to backup3, the fourth to backup4, the fifth to backup1 and so on.

By default Stars! saves one previous turn's data in a directory it creates named Backup.

When the ini file is Written

The stars.ini file is written the first time you play Stars and save a game. If you start Stars! and exit from the splash screen without saving a game, the file isn't written. You can delete this file, if you find a need. This will cause Stars! to ask for your serial number again, however. An absent ini file is just one of the conditions that causes Stars! to ask you for your serial number.

Learn about:
Stars! Copy Protection, p 4-7

D Frequently Asked Questions

IS ANYONE OUT THERE?

Do the AIs (computer players) cheat?

Stars! is one of the few games where computer players do not cheat. The Stars! AIs are governed by the same code that governs human players, and receive the same information. Expert level AIs start with more race design advantage points than human players —that is the only difference. If you feel like you've been taken advantage of by an AI, let us know. We'll investigate and, if we find that the AI does have an unfair advantage, we'll take it behind the woodshed.

Will anyone listen if I have feedback for the authors?

IIf you didn't like something in particular or experience problems with the game, or if you have good ideas for the game, please let us know. We answer all our mail and value your feedback -- if it's something we can help you with, we will. If it's just a matter of not having a feature you want, let us know that, too -- it just might show up in the next version.

When you submit your ideas, please keep in mind that Stars! is turn-based, not real-time.

How do I get player and technical support?

If you haven't used the tutorial, you should take a run through it. You can learn a lot about game play there even if you aren't just starting out. The online player's guide (help) contains detailed documentation about virtually

every aspect of the game.

If these resources don't yield answers to your questions, you can send e-mail to support@webmap.com, or visit these web pages:

UK: http://www.empire.co.uk/support/support.htm

US: http://www.empire-us.com/support/support.htm

How do I submit bug reports?

1. Write a description of the suspected bug in a text file.
2. Zip all the relevant game files and the text file:

   pkzip gamename.zip gamename.* backup\gamename.* bugnotefile
3. Send us the zip file in one of the following ways:

   Mail the zip file to bugstars@webmap.com along with a description of the problem, or...

   FTP the zip file to beast.webmap.com/pub. Be sure to send e-mail to bugstars@webmap.com with a description of the problem and the name of the zip file uploaded.

We appreciate the time and effort it takes to send these files. It helps us a great deal to have the actual game files when trying to determine if a bug exists. Thanks for taking the time to help Stars! maintain it's reputation as one of the most stable and bug-free games on the market.

When I zip my game files, they don't get any smaller. Why not?

Stars! game files are already compressed.

DIFFERENT STROKES

Can several people play on the same computer using one copy?

Yes. Up to 16 people can play "hot-seat" on the same computer with one copy of Stars!. Just make sure that all players use the same copy. In other words make sure that there is only one copy of the game running.

To play one game with several players on one machine:

METHOD 1

Each player can submit their turn, saves, and then goes back to the splash screen using File (Close). You don't have to exit Stars! between players.

METHOD 2

If you have enough memory (about 2-4MB per player depending on the universe size) you can run multiple instances of the game. An "instance" is one running session of the game.

For Setup and Play details, see Chapter 2, Multi-Player Setup.

Can two or more people using the same machine, submit turns in the same e-mail game?

Yes. When your .x# file is created it is marked with both your serial number and a fingerprint of your machine. The host will only penalize two or more people playing with the same serial number and DIFFERENT machine fingerprints. Any number of people can submit turns from the same machine with the same serial number. If however, you had two machines at home and submitted one .x# file from each, then each one must have a unique serial number. This allows you to do cool things like take a friend's turn for them when they're out of town or have two family members play from the same machine and so on. We have tried to make sure that our copy protection mechanism is as non-intrusive as possible.

Where can I find hosted games and other players?

WWW Host Sites:

Visit the Stars! website at http://www.webmap.com/stars!. You'll find a waypoints page which lists a number of Stars! sites where you can join games and find player resources.

Learn about:
Stars! Copy Protection, p 4-7

Usenet Newsgroup:

rec.games.computer.stars

A HOST'S WORK IS NEVER DONE

Is it possible to Host Stars! in DOS?

It depends. If the machine cannot run Windows, then the answer is No. If the machine can run Windows but usually does not, then the answer is Yes. It is possible to launch Windows and Stars! from a DOS batch file in such a way that Stars! will generate turns for one or more games and then exit all the way out of Windows allowing the batch file to continue where you it left off.

Why is there any way for a host to retrieve a lost password?

Any utility which allowed hosts to remove or change passwords would remove all security from the game. All an unscrupulous host would have to do is copy the game files to another directory and remove the passwords from the player's files in that directory. They could then look at everybody's data in that copy of the universe and no matter what Stars! did, the real players would never know. In a network game ANY player could pull the same trick. Security is an all or nothing element. If we didn't provide at least the minimal level of security we do now, multi-player Stars! games would be a joke.

I have multiple licenses. How do I restore a turn ruined by installing the wrong serial number on a machine?

All you have to do is copy the game files from the backup directory to the game directory, open each affected player's turn and choose File (Save). This will save their .x# files with the correct serial numbers and machine IDs.

RACE DESIGN

How do I create and save a custom race?

Read Chapter 20 on Designing Custom Races.

Is there an ultimate race?

It depends on the type of universe and the placement and experience of the other players. Expert players can make any race an ultimate race (a few people have proven this). However, the same "ultimate race" in that game might get stomped into space dust in another game with a less hospitable mix of variables. Success breeds predictability.

Can I edit a race during play?

Once a game is started, you're stuck with the race you entered the game with.

All game files are compressed and encrypted to provide security for all players. Players cannot read or modify data files.

You can however, at any time, open a saved race file (including the file for a race currently in play) and make edits. As you are playing a race, you might discover a weakness you would like to correct for the next time you play that race.

To edit a race, open the race file using the File (Open) menu item. Read Chapter 20 on Designing Custom Races for more information.

WHILE I'M PLAYING

Can I design my own ship hulls?

You can design elaborate ship configurations, but you can't design your own hulls. This is a primary game-balancing restriction.

Can I use diplomacy in Stars!?

Stars! has features that allow you to practice simple diplomacy in multi-player games.

Use the Message pane to communicate with other players, arranging such things as alliances, rendezvous, trade agreements and non-aggression pacts.

When you're setting up the game, you can specify winning conditions that encourage diplomacy by allowing for multiple winners. Stars! does not require one winner.

You can declare neutral and friendly players using the Player Relations dialog. This prevents you from attacking the wrong people and allows you to automatically come to a friend's aid if they're under fire. Friends can also pass through each other's mine fields without harm. So it's worth while to set up alliances, even if they're temporary.

How can I print out a star chart of the universe?

Use the File (Print Map) menu item.

GLOSSARY

ADDED COST OF RESEARCH

The added cost of research represents the cost of such things as dilution of research efforts across more than one field, ramp up time to switch to entering a new fields of study, etc.

AI

An AI is a computer player. AIs always exist in single player games and can exist in multi-player games, if chosen.

AIS AND ADVANTAGE POINTS

The easy AIs receive substantially fewer advantage points than you do. The expert AIs receive more advantage points than you. The Standard and Hard AIs fall somewhere in between.

ANNUAL GROWTH RATE

This rate is calculated by multiplying the habitability value by the Maximum Colonist Growth Rate Per Year found on page 4 of the View Race dialog. For races with the Hyper-Expansion trait the actual maximum colonists growth rate is twice that displayed.

BATTLE SPEED

In computing movement in battle, the best speed for all engines is the figure for 120% fuel usage.

BEST WARP SPEED

This is the maximum warp speed that the engines on this ship design can go at 120% normal fuel consumption or less. For Ramscoop engines it is the maximum speed the engine can travel withut using fuel. This number appears in the Fleet Composition tile for the selected fleet.

This speed appies only to travel between waypoints, not battle.

CAPITAL SHIP

A ship with a power rating of at least 2000.

COLLATERAL DAMAGE

Damage taken by shield of targeted ships when torpedoes miss.

DEFENSES AND INVADING TROOPS

Defense percentage values are based on the installation's effectiveness against bombs. Planetary defenses are 75% effective against invading troops.

DISENGAGING

The token attempts to get out of battle (jump into hyperspace). It does not try to leave the square. Eventually, it will simply disappear from the board. Hopefully this means it has escaped and not been liberated to its component quarks.

ENERGY SOURCES FOR STARSHIPS

Standard starship engines use anti-matter created at starbases while Ramscoops simply scoop fuel from the surrounding universe

FACTORY

Factories produce resources. Resources are units of work created by people and factories for use in production, research and other tasks.

FIBONACCI SERIES

Fibonacci numbers are the unending sequence 1, 1, 2, 3, 5, 8, 13, 21, 34 ... where each term is defined as the sum of its two predecessors.

FLEET COLORS

A blue fleet belongs to you. A red fleet belongs to an opponent. A purple fleet indicates that both your fleet and an opponent's fleet are in the same, or nearly the same, location.

HOST FILE

gamename.hst — This is the file containing the information the host program needs for a specific game. This file should be available only to the person playing the host. If the file is password-protected, you will be asked for a password.

INITIATIVE

Initiative determines order of firing in battle. The ship with the highest initiative fires first.

LOAD OPTIMAL

Transport order. Load no more fuel than you need to reach the next waypoint. This option can only calculate the amount of fuel required for one waypoint. It will not attempt to load enough fuel to get you beyond your next waypoint.

MAXIMUM SHIP DESIGNS AND SHIPS

16 different ship designs at one time, and up to 32,000 ships of each design in a fleet.

MINE

Mines bring minerals to the surface of your planets, where they are used in production.

MINERAL ALCHEMY

You will be able to turn resources into minerals. One instance of mineral alchemy will use 100 resources to produce one kT of each mineral - or only 25 resources for players with the Mineral Alchemy trait. This item will be available in the production inventory and can be automated through the auto build feature of the production dialog.

MOVEMENT

Movement is speed in battle ranging from fi square to 2 fi squares per round.

ORBIT RING COLORS

A white circle indicates that one or more of your fleets are in orbit. A red circle indicates one or more of an opponent's fleets. A purple circles indicates that both your fleet(s) and an opponent's fleet(s) are in orbit.

PLANET-PENETRATING SCANNERS

These scanners can detect fleets in orbit around a planet. They also can tell you planetary stats from a distance.

PLAYER LOG FILE

gamename.m*N* —- *N* is a number from 1 to 16, representing the player number. This is the individual file for each player, containing all the data about that player's race and state of the player's empire at the beginning of a turn. Both the player and the host maintain copies of this file.

You can load the current turn in a game by opening the **.m** file which has your player number in the extension. If the file is password-protected, you will be asked for a password.

RACE FILE

name.r*N* — This file contains a race description created and saved using the Custom Race wizard. If you open this file from **File** (**Open**),

the Custom Race wizard. If the file is password-protected, you will be asked for a password. The .r extension is not required for a race file, so you may open race files saved using a different extension as well.

RATING

A ship's rating is a relative value of its offensive capability. They are useful only for general comparison of similar ship designs to help you decide which design might be more effective in battle.

RACE DESCRIPTION FILE — NAME.RN FILES

This file contains a race description created and saved using the Custom Race Wizard. *N* can be any number (you can actually use any extension, the default is r1.) If you open this file from **File** (**Open**), the Custom Race Wizard opens, allowing you to view or change the race's attributes.

The extension of .r1 is the default, and is not required.

RESOURCES

Resources are units of work created by people and factories. They represent the effort involved in performing a task or producing an item.

ROUND OF BATTLE

Battles last up to 16 rounds. One round of battle is each token getting a chance to move and fire. A round is broken into phases, where one phase is a single token moving and, if applicable, firing.

SHIP CLASSES

Unarmed ships — any design that has no weapons and poses no threat.

Utility ships – unarmed ship that pose a threat (a subset of Unarmed ships).

Scouts — ships based on the Scout, Super Scout, and Destroyer hulls.

Warships — all other armed ships, including armed freighters.

Bomber — any ship based on one of the Bomber hulls.

TOKEN

Each token is a stack of identical ships from a single fleet.

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