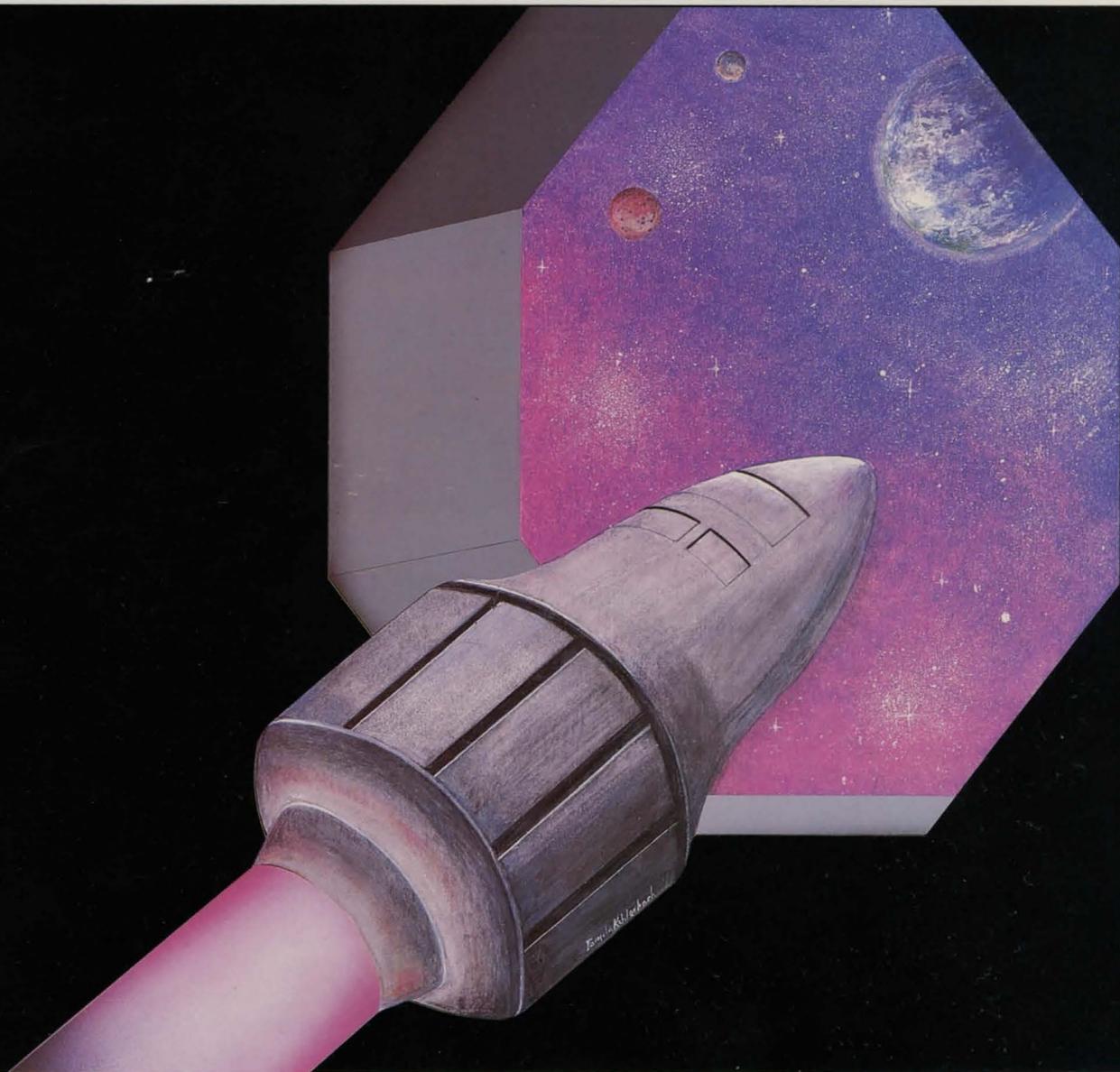# OMNITREND'S
UNIVERSE II

OMNITREND
SOFTWARE

Designed By
William G. M. Leslie III

Written By
Thomas R. Carbone & Kevin G. Zerber

Project Coordination & Marketing
Anthony J. Carbone

Manual By
William G. M. Leslie III

Cover Illustration By
Pamela Kehlenbach

Manual Printed By
The Repich Group, Inc.

Special Thanks To:

Fred Repich
Haywood "Woody" Nichols
Michael Gilchrist
Arlon Harris
Don and Hapy Mayer
All of Our Other Beta and Gamma Testers
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Patricia Carbone

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INTRODUCTION

History

During the latter part of the First Stellar Expansion, it became evident that the technology from planets in the Home Cluster could not support the ever expanding colonization effort.

The hyperdrive had opened an era of fast, economical travel between the stars. Journeys that used to consume decades could be made in a matter of days. However, the hyperdrive was not without its problems. Its unrefueled maximum range was a major limitation. After 3 or 4 hyperjumps, the ship would be completely out of the inhabited regions, with nowhere to refuel. Its fuel capacity was also part of the second hinderance: the so-called "Mass Limit." Stated simply, it sets a severe limit on the maximum size of a spacecraft that can enter hyperspace. Because of these problems, the experts were predicting an end to the rapid expansion that had previously characterized Earth's emergence as an interstellar civilization.

In 2105, a research ship travelling through the far reaches of the Tau Ceti starsystem discovered a huge alien artifact. Entire scientific communities came to study the artifact and, several years later, the purpose of the great machine was discovered. It was a hyperspace booster. It had the capability to "push" spacecraft not tens but thousands of lightyears. Since the booster itself did not enter hyperspace, ships up to the mass limit could travel a thousand lightyears with minimal power.

Years of research continued. Why had the aliens abandonded the booster? Where had they gone? The scientists were unable to say. The booster contained a mapping system depicting millions of stars but very few of them had received any special mention.

Finally, the control system was deciphered and test flights were made. They proved the machine to be fully functional and technician's knowledge of the control system adequate enough to allow regular use.

The Second Stellar Expansion started.

You are in a cluster of stars known as the Local Group. It is impossible to communicate with Earth because travel using the booster is strictly one-way. Up until 40 years ago, small capsules containing the latest news and technical examples used to arrive every month from the Home Cluster. Then one day they stopped. There was no indication that there was anything wrong in the Home Cluster. The ensuing panic and fear in the Local Group nearly destroyed civilization; as it is, the LG has been divided into two mutually hostile governments, set on the brink of war. Fortunately, 20 years ago, a second hyperspace booster was discovered at the planet Diftalpa, right in the Local Group. The second booster is currently being towed to Cetus Amicus, where it will be studied in greater detail. It is hoped that in the near future there will be two-way communication between the Local Group and the Home Cluster ... if the Local Group doesn't destroy itself first.

Who You Are

The Local Group has been divided into two governments, the Federated Worlds (FW) and the United Democratic Planets (UDP). Although trade and travel continue between the two governments, the situation is deteriorating rapidly.

Almost 8 years ago, you "retired" from the Federated Worlds Special Forces (FWSF), an organization whose function is to gather intelligence data and perform covert operations within the United Democratic Planets. Now you carry the personna of a free trader from Vromus Prime. Your cover is quite airtight. Occasionally, the FWSF provides you with money and special

THE STORY SO FAR ...

equipment, but only to send you out on a mission. Not all of your crew is even aware that you are anything else but a trader. So during your travels and missions, you're going to have to earn a living.

GETTING STARTED

Technical Questions

Should you experience a problem in running this software on your computer, Omnitrend Software, Inc. provides telephone assistance several times per week. You may call (203) 658-6917 to find out the current assistance schedule. We regret that we cannot answer any questions regarding the play of the game or provide hints.

Should you run across a bug in the program, please drop us a note. Be sure to include the version number of the game (this can be found on the title screen) as well as a description of the computer you are using. All correspondence regarding the game should be mailed to:

> Omnitrend Software, Inc.
> M/S 51
> P.O. Box 3
> West Simsbury, CT 06092

Limited Media Warranty

Omnitrend Software, Inc. warrants all media for a period of ninety (90) days from the date of purchase. Should you experience a problem within that period, return the defective disk along with dated proof-of-purchase. Should you have a problem out of warranty, Omnitrend Software, Inc. will replace a defective disk for $6.00. We regret that we will be unable to return any packing materials you use to ship your disk.

Defective disks should be returned to:

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> P.O. Box 3
> West Simsbury, CT 06092

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Limited Software Warranty

This software and the enclosed manual are sold "As is" without warranty to their performance. The entire risk as to the results and performance of the program is assumed by you.

The Limited Software Warranty is the only warranty of any kind, either expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose that is made by Omnitrend Software, Inc.

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GAME WARRANTY & REPAIR

Copyright

The enclosed software is copyrighted and all rights are reserved by Omnitrend Software, Inc. Copying (except for one backup for those disks that provide for it), duplicating, selling, renting, or otherwise distributing this product is a violation of the law.

The enclosed manual is copyrighted and all rights are reserved by Omnitrend Software, Inc. The manual may not, in whole or part, be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form.

Willful violations of the Copyright Law of the United States can result in civil damages of up to $50,000 in addition to actual damages, plus criminal penalties of up to one year imprisonment and/or a $10,000 fine.

This manual is broken up into 8 major sections. They are: **Introduction**, **Getting Started**, **Playing Universe II**, **File Control**, **Flight**, **Starport**, **Drydock**, and **Appendix**.

Introduction contains the background history on which the game is based.

Getting Started explains the game warranty and repair policies, how to boot the program and get it running on your particular computer, how to operate the user interface (pull down menus, buttons, mouse, etc.), and playing tips to help you jump right into the game without having to go through the whole manual.

Playing Universe II is a guide to the way the systems on your ship work in concert. It details the functions of the various systems availible for your spacecraft, your crew and what to do with them, interstellar commerce, the on-board computer, astrogation, warfare, energy and time, and your mission as a deep-cover agent for the Federated Worlds.

File Control explains how to create a new player file, check the your disks for any errors, delete old player files, and save current player files.

Flight describes the workings of each of the various sections involved in operating your spacecraft.

Drydock describes all of the services availible at the orbital drydocks, including the Labor Mart, new parts, new supplies, and even purchasing a totally new spacecraft.

Starport explains how to use the text parser, a user interface which allows you to: type in sentences to move about the starports, talk with other characters in the game, and find special clues to help you finish successfully. It also describes the Transaction Terminal, which enables you to buy and sell products, exchanges ores for currency, accept and discharge passengers, and send your crew to a technical school to increase their grade.

Appendix is a convenient collection of tables and data needed to play Universe II. It also includes a glossary, instructions on using the Universe electronic bulletin board, and an index.

We suggest that you read *The Story So Far ...* and *Playing Tips*. Following that, you should read the entire **Playing Universe II** chapter to understand the ideas behind each of the program sections. Then, you only need to read the sections in **Flight**, **Drydock**, and **Starport** as you need them.

Enjoy!

RUNNING UNIVERSE II ON YOUR COMPUTER

Apple Macintosh

System Requirements

Macintosh 512, or Macintosh XL computer, optional second disk drive.

Starting Omnitrend's Universe II

Omnitrend's Universe II comes on 3 disks labeled A, B, and C. Make sure that your three disks are not write protected. The tab on the disk should be visible through the hole. If you have a Macintosh XL, you will first need to run the Macworks XL program. To run Universe II, place disk A in your internal disk drive. If you have a second disk drive connected, place disk B in this drive. Turn on your computer (unless you have a Macintosh XL, in which case your computer should be on already). Open up the "Universe II Disk A" icon, and run the application "Universe II".

Universe II is copy protected, but you can run it off of a hard disk. You may move all the files from any or all of the three disks onto the hard disk. Be sure that if you move any files from a disk, you move all the files on that disk. Before running "Universe II" from the hard disk, you will need to place disk A in the internal drive. Do *not* place this disk in the external drive. Your game will not operate properly with disk A in the external drive.

If you need help using the menus, refer to your Macintosh or Macworks manual.

Making Backups

We suggest that you make backups of disks B and C. Disk A is copy protected, so you will need to contact Omnitrend Software, Inc. if you should have a problem with that disk. You may use Finder to copy the files from disks B and C to your backup disks.

Apple //

System Requirements

Apple //e with a 128K 80 column board or Apple //c, 2 disk drives, optional Apple Mouse.

Starting Omnitrend's Universe II

Universe II is distributed on five disk sides labeled A, B, C, D, and E. To run Universe II, place disk side A into drive 1 and turn on the computer. Disk A must not be write-protected.

The 128K 80 column board must be enabled so that the double hi-resolution graphics are active. See the 80 column text card manual for more information on enabling the double hi-resolution graphics.

Using the Menus With a Mouse

If you have a mouse connected to your computer, you can use it for selecting menu entries. To display a menu, point to its name on the white bar at the top of the screen and press the mouse button. Hold the button down and move the pointer to highlight the entry you wish to select. Once the pointer is positioned correctly, release the button.

You may often see a window on the screen in which there will be one or two buttons. A button is a rectangle with a word in it such as "Continue". You may click that button by pointing to it with the mouse and pressing the button.

Using the Menus Without a Mouse

To use the menus without a mouse, press the ESC (escape) key in the upper left corner of the keyboard. This will enable you to use the arrow keys to select the items in the menus. To move the pointer in a certain direction, just use the four arrow keys. When the item you want is highlighted, press the RETURN key.

You may also use the key equivalents to select menu entries in the game. When you pull down a menu, you will see the apple character followed by a letter next to every menu entry. This is the *key equivalent* for the entry. To select an entry, press either apple key (located on either side of the space bar) and the letter for that function. The apple key works in the same way that the shift key works, so you should press the apple key first and hold it down while you press the letter. It is not necessary to pull down a menu to use the key equivalents.

You may often see a window on the screen in which there will be one or two buttons. A button is a rectangle with a word in it such as "Continue". To press a button with the keyboard, just press the key that corresponds to the first letter of the work in the button. For example if the word in the button is "Continue" then you may press the 'C' key on the keyboard to press it. Note that buttons override menu entries, so if a menu function's key equivalent was "C" and the button "Continue" were on the screen, pressing "C" would "click" the button instead of selecting the menu function.

You may use either upper or lower case letters when using the keyboard.

Making Backups

We suggest that you make backups of disk sides B, C, D, and E. The disk with side A is copy protected, so you will need to contact Omnitrend Software, Inc. if you should have a problem with that disk.

Using the UniDisk 3.5

Omnitrend Software is offering a free game update for UniDisk 3.5 Owners. When your original game disks have been received, we will mail you a 3.5" version of the game, which fits entirely on one disk.

Send all of the original game disks to:

> Omnitrend Software, Inc.
> M/S 52
> PO Box 3
> West Simsbury, CT 06092

Be sure to include $6.00 for postage and handling. We regret that we are unable to return any packing materials you use to ship your disks.

Your current player files will not be transfered to the new (3.5") disk.

IBM / Zenith

System Requirements

IBM-PC, IBM-XT, IBM-PCjr, IBM-AT, IBM Compatible, or Zenith Z-100 series computer with at least 256K of memory, 80 column display, MS-DOS (or PC-DOS) 2.0 or higher, and at least 1 disk drive. IBM or IBM compatible requires the Color Graphics Adapter or Enhanced Graphics Adapter, optional Microsoft Mouse.

Starting Omnitrend's Universe II

Universe II is distributed on three disks labeled A, B, and C. None of these disks contain an operating system, so you will need to start your computer off another floppy disk or your hard disk. They should not have a sticker over the write protect notch. Your game will not work properly with disks that are write protected. You will also need to copy the file COMMAND.COM from your DOS disk onto the Universe II Disk A. If you plan on using a mouse, be sure that your DOS disk has the mouse driver installed according to your mouse manual.

RUNNING UNIVERSE II ON YOUR COMPUTER

Start your computer using your DOS disk or hard disk. Once you have an operating system prompt (for example "A>"), you may continue with one of the procedures below. Follow one of the three procedures below for your particular configuration. Universe II is copy protected, but you can still use it on a hard disk.

Single or Dual Floppy Disks

Insert disk A into drive A. If you have a second drive, place disk B into drive B. Type "UNIVERS2" and press return.

Hard Disks

Copy all the files from any or all disks onto your hard disk. If you copy any files from a given disk, you must copy all the files from that disk. Place disk A into floppy drive A. Make sure the default drive is set to your hard disk. For example, if your hard disk is drive C, type "C:" and return. You will then see a "C>". Type "UNIVERS2" and press return.

RAM (Electronic) Disk

Copy all the files from any or all disks onto your RAM disk. You must at minimum copy the entire contents of disk A. If you have room left, you can copy disks B and/or C onto the RAM drive. If you copy any files from a given disk, you must copy all the files from that disk. Place disk A into floppy drive A. Make sure the default drive is set to your RAM disk. For example, if your RAM disk is drive C, type "C:" and return. You will then see a "C>". Type "UNIVERS2" and press return.

Using the Menus Without a Mouse

If you do not have a mouse, you may still use the menus. Menus are displayed at the top of the screen in a white bar. The leftmost menu can be displayed by pressing "1". The menu to the right of that may be displayed by pressing "2", and so on.

When a menu is displayed, you can see the names of the entries that menu contains, as well as the key equivalent. Key equivalents are displayed to the right of the entry following the ">". A menu entry may be executed by pressing the proper key. For instance, if the menu entry looks like "End Phase >E", you may select it by pressing "E". It is not necessary to display a menu in order to select one of its entry.

Often you will see a window on the screen that has a button. A button is a rectangle with a word in it such as "Continue". You may "click" that button by pressing the key corresponding to the first letter of the word. In our example, you would press "C". Note that buttons override menu entries, so if a menu function's key equivalent was "C" and the button "Continue" were on the screen, pressing "C" would click the button instead of selecting the menu function.

Using the Menus With a Mouse

If you have a mouse connected to your computer (which must be installed according to your mouse manual), you can use it for selecting menu entries. To display a menu, point to its name on the white bar at the top of the screen and press the mouse button (if your mouse has two buttons, either will do). Hold the button down and move the pointer to highlight the entry you wish to select. Once the pointer is positioned correctly, release the button.

Often you will see a window on the screen that has a button. A button is a rectangle with a word in it such as "Continue". You may "click" that button by pointing to it with the mouse and pressing the button.

RUNNING UNIVERSE II ON YOUR COMPUTER

Making Backups

We suggest that you make backups of disks B and C. Disk A is copy protected, so you will need to contact Omnitrend Software, Inc. if you should have a problem with that disk. You may use the DOS program DISKCOPY to copy disks B and C.

Using GEM or Microsoft Windows

You may use the Digital Research GEM Desktop with Universe II. The Universe II disks also contain a Program Information File (PIF) for use with Microsoft Windows.

Atari ST

System Requirements

Atari 520ST or 1040ST Computer, 1 or more disk drives, color or monochrome monitor, and TOS in ROM.

Important: Universe II will not operate properly if you do not have TOS in ROM. If you have to boot your computer with the operating system on disk, you do not have TOS in ROM.

Starting Omnitrend's Universe II

Omnitrend's Universe II comes on 3 disks labeled A, B, and C. Make sure that your three disks are not write protected. The write-protect tab on the disk should be visible through the hole. To run Universe II, place disk A into your internal disk drive. If you have a second disk drive connected, place disk B into this drive. Turn the computer on. Open up the disk icon labled floppy disk A. Double click on the icon "UNIVERS2.PRG" to start the game.

Universe II is copy protected, but you can run it off of a hard disk. You may move all the files from any or all of the three disks onto the hard disk.

Be sure that if you move any files from a disk, you move all the files on that disk. Before running "UNIVERS2.PRG" from the hard disk, you must place disk A into drive A. Do *not* place this disk into drive B. Your game will not operate properly with disk A in drive B.

If you need help using the menus, refer to your Atari ST manual.

Making Backups

We suggest that you make backups of disks B and C. Disk A is copy protected, so you will need to contact Omnitrend Software, Inc. if you should have a problem with that disk. You may use TOS to copy disks B and C.

These are a few playing tips to help you get started with Universe II.

• *Check the vidcomm frequently.* Many of your assignments and clues will come from listening to vidcomm messages. Don't forget that the government affiliation of the planet you are orbiting will determine which vidcomm messages you receive.

• *There is a drydock nearby.* When you are starting the game, take advantage of the drydock above Axia to obtain additional supplies and parts.

• *There is a starport nearby.* When you are starting the game, go down to the Axia starport and pick up some products. Check the planet chart and the culture chart so you will know what products to buy and where to bring them. Hint: Zeath is a good place to bring products from Axia.

• *Be patient!* It takes some time to become familiar with Universe II.

• *Use the Save & Continue feature.* By frequently backing-up your game, you can see whether a particular strategy works before committing yourself to it.

• *Check your ship's status frequently.* Go into C&S every so often and check your ship's damage levels, supplies, and the crew. Chances are someone will get a promotion.

• *Check if anyone is locked-on.* When you are orbiting a planet and ready to send shuttles or ore processors down to the surface, you are rather vulnerable to enemy attacks. Make sure that no one is shooting at you before launching landers.

• *Talk to people.* It's a good idea to talk to everyone you meet in a starport.

• *Check in.* Check into the FWSF headquarters on Vromus Prime every so often. Admiral Bresheliah may have something important.

• *Plan ahead with crew.* You may find that it will save you money to purchase low grade crew early in the game, so that when you need high grades, you won't have to send anyone to an expensive technical school.

• *Don't purchase too quickly.* When you are at a starport waiting to buy something, watch a single brand of product to get an idea of what a good price is. Many times, buying the first product you see won't yield much profit, especially when you are paying premium price for it.

• *Check part requirements.* When purchasing a complicated system such as an ore processor, make sure that you have all of the accesories for using it (ex., pilots, marines, energy, resource scanner, programs, etc.) before leaving the drydock. This will eliminate many unnecessary trips.

• *What to do first.* When you begin the game, your Agora class spacecraft is in the Hope starsystem, but not around any planet. Do a solar transfer to Axia, get into a low orbit, take the orbital shuttle down to the starport, get products and passengers for the planet Zeath, and then go there. From there, it's up to you!

PLAYING UNIVERSE II

This section of the manual illustrates the functions of the various components (or *systems*) of a state-of-the-art spacecraft. There are seven different types of systems. They are: Drive, Energy, Command & Support (C&S), Scanning, Lander, Weapon, and Mining. Notice that each spacecraft design availible to you has these seven sections in it. The capacity of each of the sections determines the spacecraft design's primary role. For example, ore processors and the ramscoop may only be placed in the mining section. If a spacecraft has a large mining section, such as the Sutter, then it is primarily suited for mining.

All systems have several common characteristics. They are:

Damage Points (DP) – This is a measure of the amount of damage that a part can take before it is destroyed. The higher the damage point level, the more likely the part will survive an attack. Damaged parts can be brought back to their original damage point level by an engineer or by the repair crew at a drydock.

Size – The measurement of a part's bulk. The larger the part, the more room it will take to fit it in a section.

Visibility – The measurement of how likely a part is to be hit during an attack. This is based upon two factors, the part's size and the visibility modifier of the spacecraft section the part is inside. To calculate the part's visibility, the appropriate section's visibility modifier is added to the part's size. For example, if you have a hyperdrive of size 5 in an Agora class spacecraft, its visibility would be 3, because the visibility modifier for the drive section is -2. This means that the drive section is concealed enough so that anything inside of it "appears" smaller to the outside than it really is and thus presents less of a target. The actual visibility of a part may never go below 1.

Sophistication – This is the same as the sophistication of the drydock where the part was purchased. Only high-grade engineers and high sophistication drydocks can repair the most sophisticated parts. Typically, the high sophistications parts are the best (and costliest).

In addition, some systems have the following characteristics:

Partial Operation – Any system marked as such will operate at a fraction of its normal efficiency if damaged. The percentage of efficiency is is calculated by dividing the current dp level of the part by its maximum dp level. For example, if a sub-light drive with 15 dp maximum and 500 gravities of acceleration is reduced to 11 dp, then its top acceleration is reduced to 367 gravities (11 / 15 = .734 and .734 * 500 = 367). Note: partial operation will affect all of a part's functions adversely.

Constant Drain – If a system has the note "constant drain" in the Parts List, it will consume power at the rate of 3.038 energy units per minute *constantly*. The system will consume power even if has been severely damaged, although it will stop draining if is removed or destroyed.

Drive Systems

Hyperdrive – Used for interstellar travel. The only way to move from one starsystem to another is to use the hyperdrive. The hyperdrive is too inaccurate to use for moving from planet to planet.

Sub-light Drive – Used to travel between planets within a starsystem. Unable to propel your spacecraft faster than light, the sub-light drive is too slow to be used for moving between starsystems.

SPACECRAFT SYSTEMS

Gravity Generator – Generates gravity for environmental and protective purposes. The gravity generator will also protect you from acceleration caused by the sub-light drive.

Energy Systems

Converter – A power generator that transforms Ore IV into energy units.

Accumulators – Stores energy units made by the converter. This system is primarily used when another system, such as the hyperdrive, requires a large amount of energy at a rate much faster than the converter can produce. Essentially a large collection of batteries.

Ore Storage – Holds the 4 different types of ore (I - IV).

Command & Support Systems (C&S)

Bridge – The command center of your ship. If the bridge is destroyed, the game ends.

Crew Quarters – The living quarters and off-duty stations for your crew.

Computer – The central computer for your spacecraft. It is very powerful, but not a true machine intelligence.

Autodoctor – An automatic medical repair unit, used for raising you and your crew's health percentage.

Hibernaculum – A cold-storage unit for transporting passengers. The process is dangerous and you should expect to lose a certain percentage of the passengers upon revival.

Vidcomm – The video communications device for your spacecraft. In this game it is limited to receive only. Messages are stored by repreater units in orbit around all of the habitable planets, so you won't miss any messages that you might need.

Cargo Hold – Stores cargo that you purchase down at the ·starports or that you capture from enemy vessels.

Atmospherics – The environmental control for your spacecraft. If this system is destroyed, everyone on the spacecraft will die.

Scanning Systems

Solar/Planetal Scanner – Scans the starsystem that you are in or the planet that you are currently orbiting.

Resource Scanner – Scans the surface of habitable or airless planets for the best available mining site.

High Definition Scanner – Provides a detailed scan of any spacecraft within your range.

Lander Systems

Orbital Shuttle – Used to travel to and from starports, which are found on the surface of almost all of the habitable planets.

Weapon Systems

Missile Launcher – Powers and launches missiles at enemy ships.

Missile Rack – The system of racks and conveyors used to store missiles and load them in the Missile Launcher.

Enhanced Beam Weapon (EBW) – A type of highly destructive particle-beam weapon.

Shield Generator – Generates a sphere of disruptive gravity waves around your spacecraft, lessening the effects EBW or missiles hits upon your spacecraft.

Docking Adapter – Used only for docking and boarding an enemy spacecraft. It will adhere to the other spacecraft's hull and, if marines are deployed, burns a breach right through the outer hull.

Electronic Countermeasure (ECM) – A variety of jamming equipment which renders your ship invisible to enemy scanners.

Assault Capsule – A lander used on habitable planets with a population sophistication of 40 or greater when you wish to mine ores illegally. The capsules are similar to the orbital shuttles, but they carry marines, are covered with armor, have a cannon mounted on top, and can land almost anywhere.

Mining Systems

Ore Processor – Another lander, this one greatly resembles a flying off-shore oil rig of the 20th century. Used to mine ores on habitable and airless planets.

Ramscoop – A recently invented device which allows you to collect Ore IV directly from the atmosphere of a gaseous planet.

CREW: USE AND MAINTAINENCE

Running a complex starship of the 24th century requires the aid of many skilled technicians. Although you are initially provided with a few crewmen, as you expand your ship you will find the need to hire more. Each crewman has a number characteristics on which they should be judged. Hiring the right crewman can make the difference between winning and losing.

The characteristics for each crewman are:

Health – A measurement of a crewmember's ability to perform his duty. If the health percentage reaches 0, the crewmember dies. Reduced health may result from battle damage, injury when moving dangerous cargo, and changing watch. A crewman with a health percentage of less than 70%, may die of untreated injuries during any given watch. This is especially true for the older crewmen.

Age – In the time period that Universe II depicts, a crewman's age runs from 20 to 130. All crewman automatically retire when they reach 130. On a dossier, the promotion date is also the birthdate. Age primarily determines a crewman's ability to resist death from injuries. Older crewmembers are more likely to die from untreated (below 70% health) injuries.

Specialty – Every crewman has a specialty, which they may not switch. They are:

Captain – The supreme authority on a spacecraft. Captains are invariably asomnigenated and technically always on duty.

Astrogator – The person responsible for getting the spacecraft from one place to another. An astrogator's grade is especially important for hyperspace jumps. The higher grade astrogators will break the ship out of hyperspace much closer to the habitable zone of a

starsystem, thus saving a great deal of time and energy.

Gunner – The gunner is an expert on all the various forms of weaponry that your ship may carry. A superior gunner has a greater accuracy with missiles and more skill in using ECM's.

Pilot – The pilot is the person who flies the orbital shuttles, ore processors, and the assault capsules. All lander-type vehicles require one pilot to operate. The higher-grade pilots' ships will receive less damage when descending through the atmosphere. In addition, when an assault capsule is on the ground, the pilot mans the cannon and the higher grades are better shots. Pilots also move cargo to and from the cargo hold.

Miner – They are the crewmen who land on habitable and airless worlds to mine the various ores. They are required to launch ore processors. The higher-grade miners (15 and above) will recover even more ore than the resource scanner indicated for the mining site. Since miners work in gangs, it is important to realize that their grades are averaged and that it is the average which determines a particular ore processor's ore recovery rate.

Marine – Marines are used in two circumstances: boarding and ground assaults. When boarding an enemy spacecraft, the marine works as an individual, nuetralizing enemy marines, providing cover fire, or capturing control panels. During ground assaults, the marines move as a squad, nuetralizing enemy ground squads and attacking enemy defense stations. All marines are

outfitted with various types of exosuit armor and portable cannons. As a marine's grade rises, his ability to move and his accuracy of fire improve.

Engineer – The fix-it man for your ship. Engineers are very expensive to keep, being the highest paid of all the specialties. As an engineer's grade rises, his speed and ability to repair the various ship-board systems improves.

Grade – A measurement of a crewman's knowledge of his specialty. Grades run from 1 to 20, grade 20 being the highest. Once a crewmember has been hired, his grade will rise once a year. To speed things up, a crewman can be left at a technical school, where it will take much less than a year per grade (and several thousand credits!).

Promotions – Promotions happen once a year, on the crewman's birthday. A promotion increases the crewman's grade and income. Once a crewmember's grade reaches 20, promotion day only signifies his next birthday.

Income – Income is based on the crewman's grade and specialty. The pay scales are:

Specialty	Base Income	Raise per Grade
Captain	N/A	N/A
Astrogator	15,000	750
Gunner	10,000	600
Pilot	7,000	250
Miner	8,000	300
Marine	4,000	1300
Engineer	19,000	1000

Crew can be paid when entering a drydock, in the Pay Day section. Any crew member which has not been paid in over 60 days will quit.

Watch – Watch determines which part of the day the crewman is on duty. The day is broken up into three 8-hour watches. Astrogators and gunners stand regular watches. Pilots, miners, marines, and engineers have special watches: they only work when their duties are needed. You, as the captain, have undergone a process called asomnigenation. Asomnigenation alters the body's chemistry and makes it unecessary for you to sleep. Astrogators and gunners can also be asomnigenated. Anyone who is asomnigenated is on a "full" watch and are always available.

Provisions

One provision includes enough food, water, etc., to keep one person alive for one day. Usually it is convenient to think of the provisions supply in terms of days, that is, with the current complement of crew, how long before they starve. To calculate the number of *provision/days*, divide the number of provisions by the current number of crew.

COMMERCE IN THE LOCAL GROUP

In the Local Group, the basic unit of currency is the credit. The credit has been fixed by the Interworld Trade Commision, at the famous Meeting of 2167, as being equivalent in value to one unit of Ore IV. Since Ore IV is a common substance, but tedious to refine, it provides a stable monetary base.

Your primary goal, as an interstellar merchant, is to earn money. The four sources of revenue availible to you are: trading, passenger transport, mining, and orbital piracy.

Trading

The object of trading is to buy an item on a world where it is commonplace and relatively inexpensive and bring it to a world whose sophistication is from 1 to 10 points lower. Suddenly, your product becomes state-of-the-art and highly desirable. Multiply your profit times the 10 products you can carry per trip and you have a sizable amount of credits.

Certain products are even more marketable. Not only will food/spice, lifeforms, narcotics, and jewelry sell at a starport 10 sophistication points lower than the point of purchase, they can be sold at starports up to 10 sophistication points *higher* than the point of purchase. This reflects the fact that these product types have a more universal appeal and that they are not as dependent on local technology.

Products have several characteristics. They are:

Name – This is the product's brand name.

Type – The product's classification. Almost every culture has product types which are illegal to import. In the appendix is a list of the cultures and their illegal products types.

Cargo Size – A measurement of the product's bulk.

Sophistication – A measurement of the product's complexity. This figure is always the same as the product's planet of origin. At best, products appeal to a range of 20 sophistication points. This reflects the fact that products too simple for the buyer have been out-moded (no one buys grindstones anymore) and products that are too complex do not have the other supporting technologies required (an ancient Egyptian would not have any use for a television set).

Price – The value of a product is based upon its sophistication and its original manufacturer's price (a figure you will never know exactly). Note that products up for sale at their planet of origin or on planets outside of the sophistication's range of appeal will be worth 0 credits.

Mining

Mining is a fairly straightforward way of earning money. It requires at least one ore processor, a mining squad, a resource scanner, a scanner program, and patience. In addtion, depending on how intent you are in the pursuit of ore, you made need some assault capsules and their paraphenalia.

Once the ore has been collected and refined, it is brought to a starport, where it can be exchanged for credits.

The disadvantages of mining are numerous. High concentrations of ore are difficult to find. Landing on airless worlds is usually very dangerous. The start-up costs in mining are very high, typically above 50,000 credits.

COMMERCE IN THE LOCAL GROUP

Passenger Transport

At every starport in the Local Group there are people waiting for flights to other planets. You, as a merchant, are continually hopping from planet to planet. Equipped with a hibernaculum, you can carry these people for a fair amount of profit, which is based on the distance and sophistication of the destination from your current starport.

Orbital Piracy

In many of the less-developed starsystems, complete anarchy in orbit is the rule. Properly outfitted, you can profit from this situation.

Capturing another spacecraft, though, is not a simple process. You need to select a suitable target, scan it, and destroy its entire complement of crew and marines, all without destroying the ship. If it isn't possible to destroy all of the marines, you will have to send over some of your own and hope they can secure the ship.

Once the target ship is captured, you will be able to take all of the credits, ore, and products on board ... if you survive.

THE ON-BOARD COMPUTER

In order to operate, your spacecraft must be equipped with an on-board computer. The computer controls many of the other systems on your ship.

The speed of the computer is measured in *tevops per minute* (trillions of operations per minute). Program size is measured in the number of operations which must be executed in a complete run. So, to find the amount of time it takes for a program to completely run, divide the program's size (tevops) by the computer's tevops per minute figure. This will give you the time in minutes.

The following is a list of the programs available for your computer:

Hyperspace Navigation – Calculates the course, energy, time, and distance required to make a hyperspace jump. This program must be available for the hyperdrive to work.

Normalspace Navigation – Calculates the course, energy, and time required to move your ship anywhere within a starsystem. This program must be available for the sub-light drive to work.

Autodoctor – Controls the autodoctor. This program must be available for the autodoctor to work.

Hibernaculum – Controls the freezing and thawing of passengers in the hibernaculum. This program must be available for the hibernaculum to work.

Solar/Planetal Scanner – Interprets the data gathered by the solar/planetal scanner. This program must be available for the solar/planetal scanner to work.

Resource Scan – Interprets the data gathered by the resource scanner. This program must be available for the resource scanner to work.

High Definition Scan – Interprets the data gathered by the high definition scanner. This program must be available for the high definition scanner to work.

Shuttle Guidance – Controls the ascent and descent of orbital shuttles. This program must be available to launch orbital shuttles.

Ore Processor Guidance – Controls the ascent and descent of ore processors. This program must be available to launch ore processors.

Assault Capsule Guidance – Controls the ascent and descent of assault capsules. This program must be available to launch assault capsules.

Missile Track – Aims and launches missiles at a target object. This program must be available to launch missiles.

EBW Track – Aims and fires the EBW at a target object. This program must be available to fire the EBW.

ECM – Controls the ECM unit. The program must be available for the ECM to function.

Athena IRS – The information retrieval system program. This program contains hundreds of important facts and figures which can be recalled by typing in a key word.

When you sell a computer, all of the programs you have purchased for it will be lost. Once a program has been purchased, there is no way to remove it short of selling the computer.

Astrogation is the art of steering a spacecraft from planet to planet. Yours comes equipped with two types of engines: the hyperdrive and the sub-light drive.

Hyperdrive

The hyperdrive uses multi-dimensional physics to propel your spacecraft faster than light. The hyperdrive "kicks" the spacecraft into another continuum called hyperspace. From hyperspace, all points in normalspace are equidistant. So, no matter the length of a hyperspace jump, it always takes 6.8 days to do.

When a ship in hyperspace "breaks-out" and reenters normalspace, there is some positioning error, such that you can aim for a particular starsystem, but not a particular planet. The hyperdrive is too inaccurate to use for travelling from one planet to another.

Sub-light Drive

The sub-light drive is used for travelling from planet to planet within a starsystem. Since it operates at entirely sub-light speeds, travelling from one starsystem to another would take decades. Moving from one object or planet to another using the sub-light drive is called a *transfer*.

A sub-light drive's ability to accelerate your spacecraft is measured in *gravities* (gravs). A grav is an acceleration of 9.8 meters/second^2. The drives with higher accelerations will move your ship faster.

A transfer calculcation, or course plot, is very complicated. Usually the ship is moving to a target, which is also moving. This means that many times there is only one "best course" to follow at a certain acceleration, seldom the maximum acceleration of the drive.

In short, although the more powerful sub-light drives will often move the ship from one point to another the fastest, that isn't always the case.

Scales

There are two different scales used when operating the sub-light drive. One is the *solar* scale, which gives a view of the entire starsystem, with the sun in the center and the planets orbiting it. The other view is the *planetal* scale. This shows the planet that you are currently orbiting and all the objects in orbit about it. The objects include other spacecraft, orbital drydocks, and the hyperspace booster. If you are currently not orbiting a planet, then the planetal scale is not availible.

Solar Scale

The solar scale is used to move from one planet in a starsystem to another or, after a hyperspace jump, move from an empty point within the starsystem to a planet. There is only one kind of transfer that you can make in the solar scale.

Planetal Scale

There are a variety of transfers which can be made in the planetal scale. They are:

Escape Orbit – To use the hyperdrive around a planet, your ship must be sufficiently far away from the planet's center. Escape orbit will move you to that point.

Low Orbit – The lowest possible orbit your ship can make under ordinary circumstances. This is the ideal spot from which to launch orbital shuttle, ore processors, and assault capsules, as it allows the landers to use the least amount of energy necessary.

ASTROGATION

Approach Orbit – Used for moving close to other ships and drydocks. Approaches require that you enter a distance from 1 to 17,000 kilometers, which will be the distance between your ship and the target ship. To dock with an object such as a drydock, you must use approach orbit to move within 100 kilometers first.

Skim Orbit – This is a special orbit which can only be used around gaseous type planets. Move into this orbit when you wish to use an orbital ramscoop to mine ore IV.

Dock Orbit – When you are within 100 kilometers of another object in orbit, use this orbit to dock with it. You ship must have a docking adapter and the other ship must not have a working shield generator. In addition, there cannot be any crew alive (but their may be marines) or the target ship's sub-light drive has been destroyed. Your ship does not need a docking adapter to dock with a drydock.

Warfare in the 24th Century is mainly limited to conflicts between individual spacecraft owners. Weaponry is openly available through out the Local Group and can be aquired without trouble.

The systems of defense are the ECM and the shield generator. For offensive purposes, there are missiles, EBW's, boarding squads, and assault capsules.

ECM & ECCM

The electronic countermeasure system (ECM) is a sophisticated sensor-jammer which renders your ship "invisible" to other ships' scanners. The advantage of using this system is that the rate of unprovoked attacks upon your ship is reduced. In addition, you can make a high definition scan of another ship, without the possiblity of drawing enemy fire.

Other ships that you meet may also have an ECM. This means that in orbit around a planet, there may be spacecraft which *you* cannot detect. Jamming a ship is not simply a matter of using the ECM, however. Every solar/planetal scanner has electronic counter-countermeasure (ECCM) capability. This means that even if you jam a target, it has a small chance of *un-jamming*. The warships and the more powerful private designs have a high level of ECCM, which means that it is very difficult to jam them.

Shield Generator

Your primary defense against enemy ships is the shield generator. The shield generator prevents other ships from forcibly docking and it reduces the amount of damage caused by EBW and missile hits. The shield can only be damaged by a direct hit on the shield generator or by a PN Pritchard SBR missile.

Under the shield generator entry in the *Parts List* section of the Appendix, there is a column labeled "Maximum Damage Points Blocked." This is the amount of damage which the shield will subtract from any incoming attack. Any damage that is received above that amount will pass through and damage systems on the ship. For example, your ship is equipped with a Deflect Technologies shield generator and it receives a 30 unit hit. Since the shield blocks up to 26 damage points, the systems on your ship will only be hit with 4.

EBW

The EBW is useful for destroying enemy ships and inflicting partial damage. It is difficult to use the EBW to destroy the shields and crew without destroying the entire ship. This, however, is not a disadvantage if you don't intend on boarding the attacking ship.

The EBW only needs energy to operate. This means that you have a virtually unlimited supply of shots. Unfortunately, the strength of the EBW may not be varied, which means the your EBW shots may not be powerful enough to penetrate the target's shields.

Every EBW has a *pre-heat* time. This is the number of minutes required to build up sufficient particle density for firing. In practical terms, the EBW preheat time is the delay between firings. With the"fast" EBW's, it may be possible to strike a target twice for every shot received.

An EBW may not be deployed against the drydock or the hyperspace booster due to a programmed inhibition.

Missiles

There are a wide variety of missiles which fall into three major catagories. They are: SBR, Field Effect, and General Damage.

SBR – This type of missile attacks the shield generator directly. The shield will not block this type of missile. For example, if your shield generator is has 13 damage points and you are hit with a SBR which does 3 points of damage (it can do up to 5), the generator will be left with 10 damage points. If an SBR hits a ship without shields, nothing happens.

Field Effect – Field Effect missiles are the perfection of a raider's dream: how to kill people without hurting the loot. Field Effects will only damage crew and marines. The disadvantage of FE's is that the target ship's shields must be below a certain level in order to work. For a Woden FE to work, for example, the target ship's shield must be at 9 dp or lower. Otherwise, the missile is considered completely deflected. If an FE is fired at an unpopulated ship, nothing happens.

General Effect – This type of missile will destroys any system and damage crew as well. It is not as specific a weapon, and used in large quantity, it will invariably destroy the target ship. Note: Thiodyne P/PD missiles have a tendency to concentrate their effects upon sub-light drives although they will damage other systems as well.

Missiles can be fired in groups, or salvos. It is much more effective to fire missiles in a salvo, because their destructive forces are combined. For example, if the target ship has a shield level of 15 and you were to fire 3 salvos of missiles that inflicted 8 dp each, none of the damage would get through. But if you were to fire all three missiles in one salvo, they would strike with 24 dp, and 9 dp would pass through the target ship's shields.

All missiles have a base accuracy (which may be found in *Weapons List* of the Appendix). This accuracy is further modified by the gunner's grade and the distance to the target. Long range shots will dramatically reduce missile accuracy. A low gunner grade will also reduce the missile's accuracy. Each missile within a salvo has an individual hit/miss determination, which means that partial salvo hits are possible.

Missiles may not be deployed against the drydock or the hyperspace booster due to a programmed inhibition.

Boarding Squad

The boarding squad is used when you have destroyed a target ship's shields and killed all of the regular crew, although not necessarily all of the marines. Your marines enter through a breach created by a docking adapter, which is used only for this purpose. Once on board the target ship, your marines must either destroy the enemy marines or capture at least 30% of the ship's control panels. If this has been successfully done, you will collect the credits, ore, and products on the ship.

Each marine carries a *portable*, which is a hand-held energy cannon, and each marine wears an *exosuit*, which is powered exoskeletal armor.

A marine's accuracy with a portable is based upon his grade and health. As a marine takes health damage, his accuracy will go down.

A portable's *health damage* indicates the amount of damage an unprotected human would receive if hit.

The portable's range indicates the maximum target distance in board screen squares (approx. 1 meter square).

Exosuits are important for their *movement bonuses* and *health damage protection*.

The number of movement points availible to a marine determines the distance he can travel in one turn. Different types of terrain (clear squares, doors, diagonal movement, etc.) require different amounts of movement points and thus affect the speed of travel. The movement factor is dependent upon the marine's health, his grade, and the exosuit movement bonus (some suits are "faster" than others and give correspondingly greater movement bonuses). For example, a marine with a base movement factor of 4 has an exosuit with a movement bonus of 4. This means that the marine could expend a maximum of 8 movements points in a turn.

The exosuit's health damage protection measures the amount of incoming health damage blocked by the exosuit. It works in much the same way as the ship's shield generator. For example, if a marine wearing an exosuit that protected 24% health damage were hit with a 50% damage portable shot, he would lose 26% health (50% damage - 24% blocked by the exosuit). An exosuit is not damaged by portable shots, just the contents. Frequently, an exosuit outlives its owner!

Assault Capsules

Assault capsules are used when it is desirable to mine on a planet with a population sophistication greater than 40. Assault capsules carry a squad of marines, which may move and attack seperately from the capsule once it is on the ground. Assault capsules also carry a Voigt-effect cannon, which is operated by the pilot.

After a site has been found by the resource scanner, the assault capsules are sent down. Once on the surface, they must destroy any and all *defense stations* found near the mining site.

Defense stations are fixed gun stations manned by the planet's militia. The number, strength, and range of the defense stations is directly proportional to the planet's sophistication.

Although towns near the landing site may not attack you directly, each is capable of sending out 2 militia squads. These squads are approximately equal in strength to your own assault squads.

The assault capsule's mission is to clear out all of the ground defense stations in the target area, so that ore processors may land there without interference from the natives.

Assault capsules may not be launched against starports or population centers, only mining sites.

Ground Combat

Any force on the battle grid may attack any other enemy force. This means that you can deploy your assault squads against a defense station, or your assault capsules against enemy militia squads.

When one of your assault squads attacks an enemy squad, each member of the enemy squad receives an equal portion of the damage. The damage your squad inflicts is the sum of all of the marine's portable health damage. This damage is distributed evenly among all of the members in the enemy squad, of which there are usually 3 or 4. The enemy wears exosuits too.

When one of your assault squads attacks a defense station, the squad's health damage total is converted into damage points, at the rate of 1 damage point per 100% of health damage. This means that if your squad has a health damage total of 384%, it will damage a defense station for 4 damage points (round the percentage to the nearest 100).

Assault capsules work in the opposite fashion against enemy militia squads. Every point of damage the capsule's cannon inflicts is converted into 100% of health damage. This means that a capsule with a cannon strength of 5 dp will inflict 500% health damage against an enemy squad.

Energy

All of the systems on your ship need energy to operate. Energy is produced by transforming Ore IV into energy via the *converter*. The converter draws Ore IV directly from the ore storage system as needed.

Some systems need more energy at one time than the converter can produce. Your ship is also equipped with accumulators. These are essentially high-efficiency batteries, which can gradually store energy to release it all in one instant.

Constant Drain Rate is a measurement of the energy which some systems in your ship use constantly. For example, atmospherics is a constant drain system because it uses energy continuously to maintain the ship's climate. In the *Parts List* section of Appendix, all of the constant drain systems are marked as such under Notes. Each constant drain system on your ship draws 3.038 energy units per minute.

Converter part data

Energy in the accumulators

Constant Drain rate

Total energy available

```
Energy Resources
Converter:
Vromus MassCon 3          1 DamPt
17 eu Generated per unit Ore IV

         0 eu in Accumulators
Constant Drain:  6.076 eu/min
5978492 Available energy units
          [ Continue ]
```

Available energy units is the measurement of all the energy available on your ship. This is calculated by multiplying the total Ore IV reserves by the converter efficiency and adding it to the energy in the accumulators.

TIME AND ENERGY

Time

The Local Group uses the standard years, days, hours, and minutes of Earth. The calendar even includes the correct leap-years.

The minimum unit of time used in Universe II is the minute. Any event which takes less than one minute is considered one minute in length.

The ship's work day is divided into 3 equal sections, or *watches*, of 8 hours. In the program section **C&S**, you can advance the clock by waiting until the beginning of the next watch. Almost everything that you do, besides moving around the menus, takes up time.

Date ————————

Time (military format) ————

Watch number ————

```
Chronograph
08:09   28 Feb 2363
Watch  2
      ( Continue )
```
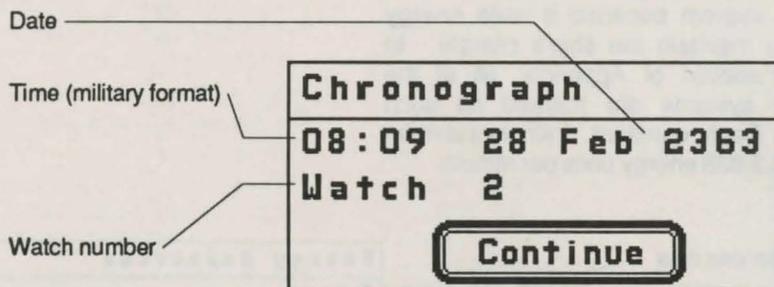
YOUR MISSION

You are a deep-cover operative of the Federated Worlds Special Forces (FWSF). As such, you have a responsibility to immediately respond to official communications and orders. In addition, you must maintain your Agora class spacecraft in a state of combat readiness.

The FWSF headquarters are located underneath the Vromus Prime starport. To enter the headquarters, type "Say Name" inside the transactions booth. Typically, missions will be given to you via coded vidcomm messages.

Your local Chief of Operations is Admiral Vikotor Bresheliah. He is your direct superior and the person who will assign you to most of your missions.

As a self-employed starship captain, it is in your interest to make as much money as possible. The FWSF asks that you restrict any orbital piracy to the United Democratic Planets.

FILE CONTROL

File Control is the program section for quitting Universe II, verifying the disks, starting a game, aborting a game, and saving a game in progress to the disk.

Quit

This functions ends the program.

Verify

Verify checks all of the disks to ensure you have a good copy of the program. This may take several minutes, so we suggest that you only use it if you are having a problem with the program. If the verification routine indicates that you have a bad disk, turn to the *Game Warranty and Repair* section of Getting Started for information on having your disk repaired.

New Game...

This function creates a new player file (if any player file space is availible). The computer will ask you to enter the following names:

Player – This is the name of the ship data file. When you start up the game at a later date, the new player file will have been saved under this name. The player file name may only be upper/lower case alphabetical characters (no numbers or punctuation).

Captain – The name of the captain of your ship. We suggest that you enter it with only the leading character in upper case (ex., Beowulf).

Ship – The name of your spacecraft. Again, only the leading character should be in upper case (ex., Skydiver).

Once this information has been entered, the player file name will appear at the bottom of the Game menu.

Old Game

To use a previously created player file, simply select it by name. Current player files will appear under the *New Game...* entry.

DELETE & SAVE MENUS

Delete Menu

All

This will delete all of the player files on the disk. Do not use this function if you still want any of your player files!

Specific File

To delete a specific file, select it by name from the Delete menu.

Save Menu

Save Game

Saves your current player file and returns the program to the Game and Delete menus.

Save As...

Saves your current game under a new name and returns the program to the Game and Delete menus. This function is not availible if there are already four (4) player files on the disk. The new player files name may only be in upper/lower case alphabetic characters (no numbers or punctuation).

Save & Continue

Saves your current player file but does not exit to the Game and Delete menus. This function is useful if you suddenly aquire a great deal of wealth or perform a particularly complicated maneuver. If your ship is destroyed after calling the function, it will be current up to the last *Save & Continue*.

Abort

Exits to the Game and Delete menus without saving your player file. The player file will remain the way it was before you started the current session. This function is useful if you end up in a position where you have run out of credits or fuel from an unwise maneuver and you want a second chance.

FLIGHT

Use the Logistics section to check supplies and move ore between the ore processsors, ore storage, and orbital shuttles.

Stores

Provisions – Shows the current amount of provisions and the number of days they will last before the crew starts starving. Since one provision will feed one crewmember for one day, the "day supply" figure is calculated by dividing the number of provisions by the number of crew.

Credits – The number of credits on hand and the number of credits owed to your crew.

Passengers – Displays the number of passengers you have in the hibernaculum, their destination, and the amount you will receive for each passenger successfully delivered.

Missiles – A list of all the missile types and the quantity of each in the missile rack.

Programs – A list of all the programs in the on-board computer.

Ores – Displays the location and quantity of all the ore on the ship.

Load/Unload

Load – Moves ore from the ore storage unit to the selected lander (either an ore processor or shuttle). Enter the ore type as an number from 1 to 4 and the quantity. To cancel a transfer, enter zero for the quantity.

Unload – Moves ore from the selected lander to the ore storage unit. This works the same way as Load.

CREW

Use the Crew section to examine a crewman's dossier, repair his health, and change his watch.

The Crew Data window shows all of the crew members, including the captain, and their watch, health percentage, and specialty.

The specialty abbreviations are:

Astr   Astrogator
Capt   Captain
Engr   Engineer
Gunr   Gunner
Mari   Marine
Minr   Miner
Pilt   Pilot

Crew

Dossier – A list of all of the crewman's personal characteristics, including his yearly income, grade, the number credits owed to him next pay day, and the date of his next promotion.

Autodoctor – If you own an autodoctor and the autodoctor program, the currently highlighted crewmember's health will be brought up to the autodoctor's maximum health repaired percentage. The autodoctor will not affect crew whose health is already above the maximum repaired level.

If a crewman's health is below 70%, there is a risk that he will die from untreated injuries.

Change Watch – This function is only for the crew that stand watches: astrogators and gunners. You may not change the watch of a crewman currently on duty. You may not change the watch of a crewman to the current watch. Changing watches always reduces the crewman's health by 10% of its current level. For example, Mesdee, an astrogator with 80% health, has his watch changed to Watch 3. His health after the change will be 72%.

ENGINEERING

The Engineering section gives you the capability to examine individual parts for damage and even repair them, if you have an engineer.

Only the parts that are on your ship will be listed. The *%Oper* column indicates the operational percentage of the part. For example, if a hyperdrive with 15 damage points (dp) maximum is at 12 dp, then its operational percentage is 80% (12 dp divided by 15 dp).

Detail

Displays the part's brand name, size, visibility, sophistication, and original cost.

Repair

This function is only available if you have an engineer. The engineer's grade determines the maximum sophistication of the parts he can repair. The maximum sophistication can be determined by the formula: (60 + (Engineer's Grade x 2).

Engineers cannot repair a part above its original catalog damage point level.

VIDCOMM

The Vidcomm is your main source of news and the primary system of contact for new mission assignments.

The vidcomm will operate automatically when you enter the section. If you receive the out of range error message, go into Drives and move the ship into a low orbit. This should put you within range.

You will only receive messages that originated on a planet of the same affiliation as the one you are above when trying to use the vidcomm. For example, messages left on the FW vidcomm network will not reach you if you only go to UDP planets.

Once you have read a message, you have option of marking it as read. If you do, the message will be "thrown away" and you will not receive it again. If you do not mark the message, it will appear next time you enter this section. Thus, you can save important messages for re-reading.

The Athena Information Retrieval System is a computerized catalog of facts and figures concerning the Local Group. You must have the Athena IRS program in order to use this section.

At the "Keyword" prompt, enter a subject of interest. Case (upper or lower) does not make a difference. The keyword can actually be many words (ex., airless planet).

If the keyword is found, the number of entries will appear, along with the first page of the first entry. A *next* button will appear, along with a *continue* button if there is more to the current entry. Continue will display the rest of the entry (if it runs more than one page). Next will go on to the next entry if more exist otherwise it will return you to the keyword prompt.

To exit this section, hit *return* at the keyword prompt.

SUB-LIGHT

The sub-light drive is used for travelling from planet to planet within a starsystem. Since it operates at entirely sub-light speeds, travelling from one starsystem to another would take decades. Moving from one object or planet to another using the sub-light drive is called a *transfer*.

There are two different scales used when operating the sub-light drive. One is the *solar* scale, which gives a view of the entire starsystem, with the star in the center and the planets orbiting it. The other view is the *planetal* scale. This shows the planet that you are currently orbiting and all the objects in orbit about it. These objects include other spacecraft, orbital drydocks, and the hyperspace booster. If you are not orbiting a planet, then the planetal scale is not available.

You must have an astrogator on-duty at the beginning of the transfer. Since the astrogator's services are called upon only at the beginning, you do not need to have an astrogator on each watch during a transfer. This is true for solar or planetal transfers.

Use the Scale menu to move between the solar and planetal views of the starsystem.

Solar Transfers

Object – Selects the object and charts a course for it. The transit time and energy use are shown in the Transit Data window. If an object's name is "greyed-out", then you are in orbit about it already.

Transfer – Once an orbit has been plotted, select Solar in the Transfer menu to execute the transfer.

Planetal Transfers

Object – Object selection works the same as in the solar scale. Ships are listed by their class, which means there may be several with the same class name on the object list. For example, the first two objects may both be listed as "Hideyoshi." They are not the same ship; merely two ships of the same design. The drydock and hyperspace booster will also appear on this menu.

Orbit – There are several different kinds of orbits your ship can take around a planet. They are:

Escape – This transfer will chart a course to a point where it is possible to use your hyperdrive. The Escape orbit does not require you to select an object first. If you have already selected an object, the Escape selection will ignore it.

Low – This function will chart the lowest possible normal orbit around a planet. The Low orbit does not require you to select an object first. If you have already selected an object, the Low selection will ignore it.

Skim – Skim will plot a course to a point just within the atmosphere of a gaseous type planet. It is not availible around habitable or airless planets. The Skim orbit does not require you to select an object first. If you have already selected an object, the Skim selection will ignore it.

Approach... – Approach will plot a course that will put you a specified number of kilometers behind the currently selected object. You will be asked to enter a range which can be between 1 and 17,000 kilometers. This is ideal for attacking other ships or moving into position to dock. You must select an object for this function to work.

Dock – This function will plot a docking orbit only if you are within 100 kilometers of another object in orbit and the object is currently selected. You ship must have a docking adapter and the other ship must not have a working shield generator. In addition, there cannot be any crew alive (but their may be marines) or the target ship's sub-light drive has been destroyed. Your ship does not need a docking adapter to dock with a drydock.

Transfer – Once an orbit has been plotted, select Planetal in the Transfer menu to execute the transfer.

Note

You can move directly from the Drives section to the Weapons section by selecting "Weapons" in the Misc menu.

HYPERDRIVE

The hyperdrive uses multi-dimensional physics to propel your spacecraft faster than light. The hyperdrive "kicks" the spacecraft into another continuum called hyperspace. From hyperspace, all points in normalspace are equidistant. So, no matter the length of a hyperspace jump, it always takes 6.8 days to do. Of course, if the trip requires more than one hyperjump, it will take the number of jumps times 6.8 days to complete.

When a ship in hyperspace "breaks-out" and reenters normalspace, there is some positioning error, such that you can aim for a particular starsystem, but not a particular planet. The hyperdrive is too inaccurate to use for travelling from one planet to another.

The accuracy of your reentry into normalspace is affected by your astrogator's grade. The better astrogators will make the ship reenter closer to the center of the starsystem. Since the transfer from the reentry point to your destination planet usually takes the largest chunk of time in travelling from a planet in one starsystem to a planet in another starsystem, a superior astrogator will dramatically reduce the total trip time.

The Transit Data window shows your origin, destination, the amount of energy the entire trip will consume, the number of jumps (if more than one is needed), the total distance in lightyears, the estimated time of departure, the estimated time of arrival, and the total transit time.

FW, UDP, and Other

These menus list the Federated World, United Democratic Planets, and the unafiliated starsystems respectively. Simply select the starsystem name to chart a course.

Use the *Manual...* function in the Other menu to travel to an empty point in interstellar space. Each coordinate (X, Y, and Z) may range from -25 to +25.

Hyperdrive

Engage – Once you have charted a course, use this function to make the hyperjump(s). You need only have an astrogator on duty at the beginning of the maneuver.

Note

You can move directly from the Drives section to the Weapons section by selecting "Weapons" in the Misc menu.

The Ship to Ship section allows you to scan and fire upon other ships in orbit. There are three steps to shooting at a target: target selection, target analysis, and weapon firing. The menus Target, Scan, and Fire handle these steps respectively.

The screen is broken up into four windows. They are: Planetal Scan, Ship In Orbit, Target Ship Data, and the Target Ship Schematic.

The Ships In Orbit window lists the spacecraft in orbit in the same order as the Sub-light Object menu and the Target menu at the top of the Weapons screen. *Status* indicates whether or not the other spacecraft can see your ship. *Range* is in kilometers.

The Target Ship Data window displays the damage point levels for the critical systems, the current crew count (excluding marines), and the current marine count, for the last ship you have examined using the high resolution scanner. The abbreviations for the dp levels are, from left to right, row by row: hyperdrive, sub-light drive, gravity generator, converter, accumulators, ore storage, bridge, crew quarters, computer, atmospherics, solar/planetal scanner, missile rack, missile launcher, EBW (!), and shield generator. Damage to these systems will affect the target ship in the same fashion as they would yours.

You must have an on-duty gunner in order to enter this section.

Target

To pick a target, select it from this menu. If you are using a mouse, you may select a target by "clicking" its class on the Ships In Orbit window.

Scan

This will make a high definition scan of the current target vessel. Scanning takes time, and it is not automatically updated, so you will have to use this function sparingly and carefully during combat. You must have a target selected in order to make a high definition scan. A high definition scan is not necessary to do prior to firing at a target ship.

Fire

Once a target has been selected, the Fire menu will list all of the weapons which are availible and in range of the target ship.

Missiles – When selecting a missile, the Missile Data window will appear, showing the type of missile, the quantity in the missile rack, energy to power-up each missile, the missile's base accuracy, the current gunner's grade, and the combined (final) accuracy of the missile, which is based on the missile's accuracy and the gunner's grade.

Next, enter the number of missiles in a salvo. It is more effective to fire missiles in a salvo, because their destructive forces are combined. For example, if the target ship has a shield level of 15 and you were to fire 3 salvos of missiles that inflicted 8 dp each, none of the damage would get through. But if you were to fire all three missiles in one salvo, the would strike with 24 dp, and 9 dp would pass through the target ship's shields.

After the salvo has been entered, the computer will confirm your firing one more time and then fire the salvo.

You will need to scan the target ship to observe the effects of your salvo.

SHIP TO SHIP

EBW – After the EBW has been selected, the EBW Data window will appear. It provides information on the EBW type, energy consumed per firing, dp level, range, dp inflicted, and preheat time (minutes between firing).

Next, the computer will confirm the EBW firing and then fire.

Note

You can move directly from the Weapons section to the Drives section by selecting "Drives" in the Misc menu.

The objective of deploying a boarding squad is to capture the target vessel and remove all of its valuables.

Preparing A Boarding Squad

Preparing the boarding squad can be important if some of the marines are much faster and skillful than the others. During the combat phase, the marines will move in the order of the boarding squad list. It may prove advantageous to put the faster, more powerful marines in front.

Marines

Next – Displays the next marines on the crew roster.

Previous – Moves to the previous marine on the roster.

Select – Places the marine currently in the Marine Data window onto the squad list.

Select All – Places all of the marines on the ship onto the the squad list.

Remove – Removes the marine currently in the Marine Data window from the squad list.

Deploy – Causes the docking adapter to burn a breach through the target ship's outer hull. All of the marines on the squad are moved into position, ready to board. Now the fight begins!

Boarding Squad Combat

The object of boarding is to capture 30% of control panels on the bridge or destroy the target ship's entire complement of marines.

The Combat Screen is divided into three sections: the Marine Data window, the Combat Status window, and the Bridge Layout window.
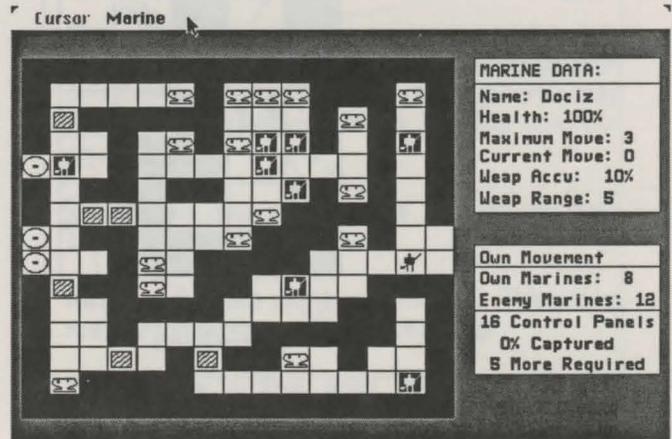
The Combat Screen

The Marine Data window shows the current marine's name, health, maximum movement allowance, expended movement allowance, combined weapon accuracy, and weapon range. The Combat Status window shows the current combat phase, the number of marines left in the boarding squad, the number of enemy marines, and the number control panels needed for a surrender.

Combat ends when: All of your marines in the squad have died, none of the squad is on the bridge at the end of the movement phase, 30% of the enemy control panels have been captured, or all of the enemy marines have been killed.

Your marines will enter from the extreme right of the bridge layout window. The breach is represented by two adjacent clear squares. It will appear in a random vertical position. All of your marines will enter throught the breach. Enemy marines may occupy breach squares but they may not enter your ship through them.

BOARDING

Own Marine
Empty Square
Wall
Enemy Marine
Access Hatch
Door
Control Panel
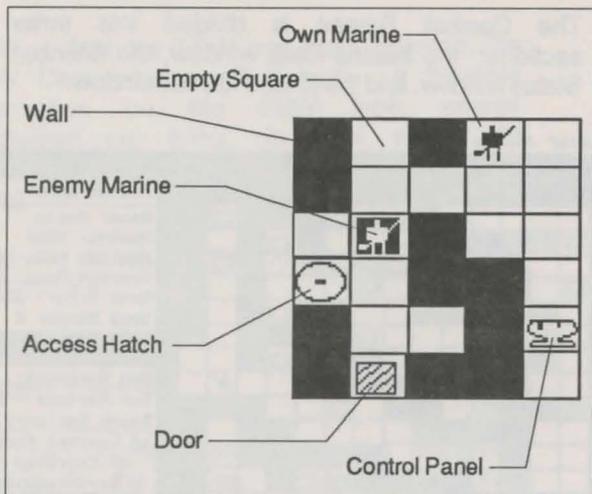
Graphic Elements of the Combat Screen

Combat takes place in phases. Each phase represents 1 minute of game time, although you make take as long as you wish to move or fire. The phases are:

Own Movement – You may move all, some, or none of the marines in your boarding squad. They will appear in the Marine Data window in the same order as on the boarding squad list. Once a marine has appeared in the Marine Data window, he will not reappear until the next phase. All living marines have an opportunity to move, even those not on the bridge.

Enemy Movement – The enemy moves his marines.

Own Attacks – You may have all, some, or none of your marines attack the enemy. Only marines on the bridge may attack. Once a marine has appeared in the Marine Data window, he will not reappear until the next phase. If all of the enemy marines are killed during this phase then you have successfully captured the target ship.

Enemy Attacks – If all of your marines on the bridge are killed during this phase then the boarding sequence ends. If 30% of the enemy control panel squares are occupied by your marines at the end of this phase then you have successfully captured the target ship.

Cursor

Left, Right, Up, and Down – Moves the cursor one square in the desired direction. The cursor will not move beyond the maximum movement allowance during the movement phase and it will not move beyond the portable range during the attack phase.

Marine

Move – Moves the current marine onto the square indicated by the cursor. If the marine has not yet entered the bridge, then Move will place him on one of the empty breach squares (if there are any). The function can be called until the current marine has insufficient movement points or you have finished moving him. Movement point costs per square are:

Empty Square – 2 movement points to enter.

Control Panel – 3 movement points to enter.

Door Square – 3 movement points.

Diagonal Movement – 1 additional movement point. For example, moving diagonally onto a door square would cost 4 movement points (3 for the door +1 for the diagonal move).

Movement onto wall squares, friendly or enemy marines, and accessway squares is not allowed.

If a marine ends his movement phase on a breach square, he is removed from the bridge.

Players using a mouse may simply "click" any legal adjacent square and the marine will move into it (given sufficient movement points).

Fire – Fires the current marine's portable into the square indicated by the cursor. You cannot shoot through walls or doors, although you may shoot an enemy marine that is standing *in* a door square.

Your shots will safely pass through squares containing friendly marines.

Next – Advances to the next marine. This works in either the Movement or Attack phase.

End Phase – This ends the current phase, Own Movement or Own Attack and skips any marines who have not yet participated in the phase.

Following a successful boarding, all of the target ship's ore, credits, and products will be moved onto your own ship after which the enemy ship will be destroyed by a converter overload.

ASSAULT CAPSULES

Assault capsules are used when it is desirable to mine on a planet with a population sophistication greater than 40.

After a site has been found by the resource scanner, the assault capsules are sent down. Once on the surface, they must destroy any and all *defense stations* found near the mining site.

Defense stations are fixed gun stations manned by the planet's militia. The number, strength, and range of the defense stations is directly proportional to the planet's sophistication.

Although towns near the landing site may not attack you directly, each is capable of sending out 2 militia squads. These squads are approximately equal in strength to your own assault squads.

Once your assault capsules have landed in the potential mining region, you can attack the enemy militia and defense stations with assault capsule cannons and assault squads.

Loading

Capsule

Capsule 1, 2, & 3 – Selects the assault capsule. The functions in the Load menu will affect this capsule.

Launch – Launches all capsules with a "go" launch status. For a "go" status, the capsule must be loaded with energy, have a pilot, and a full complement of marines.
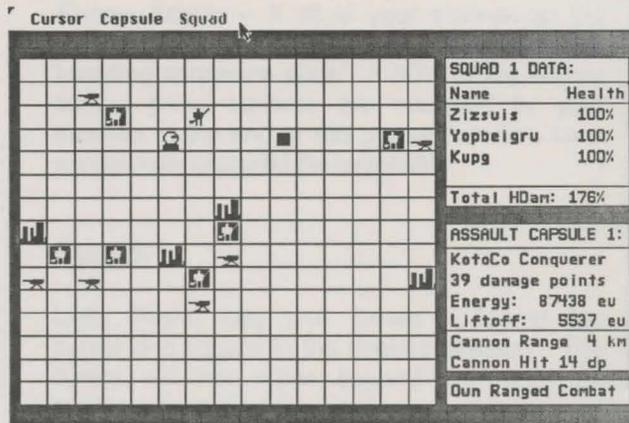
The Assault Screen

Cursor

The cursor appears for the capsule movement, squad movement, ranged combat, and close combat asault phases.

Left – Moves the cursor one square to the left.

Right – Moves the cursor one square to the right.

Up – Moves the cursor one square up.

Down – Moves the cursor one square down.

Capsule

Move – Moves the current assault capsule to the square indicated by the cursor. The assault capsule can move anywhere on the battle grid at an initial cost of 5,000 eu plus 1,000 eu for every kilometer (grid square). The assault capsule may only move onto empty squares. If you are using a mouse, you can simply click the square you wish to move onto. A beep indicates that your capsule has insufficient energy or the square is occupied.

Fire – Fires the current assault capsule's cannon at the square indicated by the cursor. This costs 3,000 eu. Your capsules have 100% accuracy against defense stations and a limited accuracy against enemy squads. Your assault capsules are equipped with shields which block enemy shots at the rate of 80 energy units per damage point, up to the assault capsule's shield maximum.

Retreat – The current assault capsule will leave the battle grid and return to the main ship. If the assault capsule's squad is not inside, then they are left behind. However, the abandoned squad will continue fighting until they die, the site is secured, or there are no more capsules on the battle grid. Retreating may only be done during the capsule movement phase.

End Phase – Ends the capsule's current phase *(capsule movement or ranged combat)*.

Graphic Elements of the Assault Screen

Squad

Move – Moves the current marine onto the square indicated by the cursor. A squad may only move 1 square per phase. The square must be unoccupied with exception of the base capsule. Squads enter the battle grid inside of their base capsules (ex., Squad 1 lands inside of Capsule 1). To reenter the base capsule, simply move the squad onto the same square. If you are using a mouse, simply click the square you wish to move into. The computer will beep if you try to move into an invalid square.

Fire – The squad will fire their weapons at the square indicated by the cursor. The square must be adjacent.

End Phase – Ends the current squad phase *(squad movement or close combat)*.

MANIFEST

The Cargo Manifest allows you to examine all of the cargo in the cargo hold and in the shuttles, and move cargo from area to area.

The screen is divided into two windows. The Shuttle/Hold Data window shows the total cargo size units (CSize) and the maximum cargo size units for each of the areas. Cargo size units are a measurement of an item's bulk. Some items are so bulky that only the largest orbital shuttle can carry them.

The second window is the actual manifest. It lists the product's name, type, csize, sophistication, price and location. The following table explains the cargo type abbreviations:

Type	Abbreviation
Food/Spice	Food
Art/Artifact	Arti
Lifeform	Life
Narcotic	Narc
Medicine	Medi
Jewelry	Jewl
Tool	Tool
Weapon	Weap
Transport	Tran
Entertainment	Entr
Clothing	Clth
Information	Info

Areas

Cargo Hold, Shuttles 1, 2, & 3 – Selects the destination area. For example, if you wish to move an product from the cargo hold to shuttle 2, select shuttle 2.

Products

Transfer – Transfers the currently selected cargo item (in the Cargo manifest window) to the currently selected area. The currently selected area will be inverted on the Shuttle/Hold Data window. Note: Products of the weapon (weap) or lifeform (life) type may occasionally injure one of the crewmembers moving them.

Unload All – If a shuttle is currently selected, unloads all of its contents into the cargo hold.

Next – Advances to the next item in the Cargo Manifest window.

Prev. – Moves to the previous item in the Cargo Manifest window.

Dump – Dumps the currently selected item into space. Note: Once an item has been dumped, it cannot be retrieved.

Shuttles is the section used for landing your orbital shuttles at starports.

There are three windows on the Shuttles screen. The Orbtial Shuttle Data window shows the energy status, damage points, pilot status, the amount of ore on the shuttle, the amount of passengers on the shuttle, and the launch status.

The Pilot Data window shows the current pilot's name, grade, health, and load status. If the pilot is already on a shuttle, the status will be "loaded" followed by shuttle number in parentheses.

The Passenger Data window shows the total number of passengers on the ship (either in a shuttle or the hibernaculum), the maximum number of passengers, their destination, and the fare to be collected for each one delivered.

If you cannot enter the Shuttles section, your spacecraft may be in too high an orbit. Make sure that you are in a *low orbit* around a *habitable* planet with a starport.

Shuttle

Shuttle 1, 2, & 3 – Selects the shuttle and makes it current. The current shuttle's number in the Orbital Shuttle Data window will be inverted.

Launch – Launches the orbital shuttles. Only those shuttles with a "go" launch status will be launched.

A shuttle must have energy and a pilot for a "go" status.

Shuttles may lose damage points during their descent, particularly over planets with a high natural hostility. If a shuttle's damage points go to zero, it is destroyed. Any shuttle destroyed on the descent to a starport is considered to be

the one you are in. So, if you lose a shuttle on the way down, the game ends.

If you successfully land at a starport, return to the Section menu and select *Starport* to enter the starport.

Loading

Load Energy – Loads the currently selected shuttle with energy.

Load Pilot – Loads the pilot in the Pilot Data window onto the currently selected shuttle. This will move the pilot even if he is already in another shuttle.

Next Pilot – Moves the next pilot on the crew roster into the Pilot Data window.

Passenger... – Enter the number of passengers to load into the currently selected orbital shuttle. It may not be more than the shuttle's capacity. This function adds the specified number of passengers to the shuttle's current count. For example, if a shuttle has a maximum capacity of 10, and 8 passengers have already been loaded, then the maximum number of passengers that could be added is 2.

Unload All – Unloads the energy, pilot, and passengers from the currently selected shuttle.

RESOURCE SCANNER

The Resource Scanner is used to find the best apparent mining site on either habitable or airless planets.

The Resource Scan Summary window shows the mining site's concentrations of Ores I-IV, the planet's natural hostility, the population sophistication, the number of defense stations, and the number of towns on the planet. The population sophistication, number of defense stations, and number of towns only apply to habitable planets.

What makes a good mining site are high ore concentrations. A good rule of thumb is that each type of ore is ten times as plentiful as the previous. For example, 1 unit of Ore I per tonne of rock is a good concentration. This means that for Ore II, 10 units of ore per tonne of rock is a good concentration and 20 units/tonne of Ore II is spectacular.

If you are out of the resources scanner's range, move into a *low orbit*. With some of the larger planets, even moving into a low orbit may not be close enough, because the low orbit is proportional to the planet's radius.

Ore processors are used for mining ore from the surface of airless and habitable planets.

There are three steps to mining: preparation, descent, and mining. The preparation and descent stages are almost identical to stages in Shuttles.

The first screen shows the Ore Processor Data window, the Pilot Data window, and the Miner Data window.

The Ore Processor Data window shows the energy status, damage points, hours per tonne of raw rock processed, energy units per tonne of rock processed, the pilot status, miners loaded, and the ore processor launch status.

The Pilot Data window shows the current pilot's name, grade, health, and load status. If the pilot is already on a ore processor, the status will be "loaded" followed by ore processor number in parentheses.

The Miner Data window shows the current miner's name, grade, health, and load status. If the miner is already on a ore processor, the status will be "loaded" followed by ore processor number in parentheses.

Mining Ore

Ore concentrations are measured in units per tonne. This means that, using miners with an average grade of 15, there are x units of Ore for every tonne of raw rock processed. With higher grade miners, you will recover even more ore than the resource scanner indicated.

Depending on the hostility of the planet, your mining crew(s) will be subjected to attacks by natural forces. These attacks range from sandstorms to crushing plant vines. Attacks affect the ore processors and their associated miners.

Processor

Processor 1, 2, & 3 – Selects the ore processor and makes it current. The current ore processor's number in the Ore Processor Data window will be inverted.

Launch – Launches the ore processors. Only those ore processors with a "go" launch status will be launched.

An ore processor must have energy, a pilot and the required number of miners for a "go" status.

Ore processors may lose damage points during their descent, particularly over planets with a high natural hostility. If an ore processor's damage points go to zero, it is destroyed.

Loading

Load Energy – Loads the currently selected ore processor with energy.

Load Pilot – Loads the pilot in the Pilot Data window onto the currently selected ore processor. This will move the pilot even if he is already in another ore processor.

Next Pilot – Moves the next pilot on the crew roster into the Pilot Data window.

Load Miner – Loads the miner in the Miner Data window onto the currently selected ore processor. This will move the miner even if he is already in another ore processor.

Next Miner – Moves the next miner on the crew roster into the Miner Data window.

Unload All – Unloads the energy, pilot, and miners from the currently selected ore processor.

ORE PROCESSORS

After a brief landing sequence, you will be on the surface of the planet. Each ore processor has a separate window. The window is divided into several sections. They are for the processor data, the ore collected data, and the miner data.

Processor

Processor 1, 2, & 3 – Selects the ore processor and makes it current. All commands issued from the Mine and Liftoff menus will affect the selected ore processor.

Mine

Ore I, II, III, IV – The current ore processor begins mining the selected ore type. Any ore collected will appear in the Ore Data window.

Idle – Makes the current ore processor stand idle. All ore processors consume energy, even when standing idle.

Liftoff

Liftoff – Sends the currently selected ore processor back to the main ship. If the ore processor's energy level falls below the liftoff minimum, then the ore processor is considered lost.

Once the ore has been collected and refined, bring it to a starport, where it can be exchanged for credits.

The ramscoop is designed to collect Ore IV from the atmospheres of gaseous planets. To use the ramscoop, your ship must be in a *skim* orbit above a gaseous planet and there must be one astrogator and one miner available.

If these conditions are met, the shield generator will shut down and the ramscoop will immediately begin mining.

As the ramscoop collects ore, there is a slight chance that the ship will be damaged by the friction of the atmosphere. If any damage does occur, a standard damage warning will appear.

In the Ramscoop window, the total reserve of Ore IV, the collected Ore IV, the collection rate, elapsed time, and maintenance energy are shown. Maintenance energy is the number of energy units per minute required to hold your ship in the proper orbit while the ramscoop is operating.

To stop the ramscoop, "click" the Stop button.

DRYDOCK

Pay Day is encountered every time you enter a drydock. At your option, you can pay all, some, or none of your crew. Any crewmembers that are owed more than 59 days pay will quit when you exit the section.

Pay... – Pays the currently selected crewmember the amount you enter.

Pay-up All – Pays all of the crew the amount they are owed.

Note: When crewmembers quit because they haven't been paid, you will be unable to hire new crewmembers at the drydock. Always be sure to pay at least one of your astrogators!

SUPPLIES

Use Supplies to purchase provisions, Ore IV, programs, and missiles for your spacecraft.

Cursor

Next – Used in conjunction with the Programs and Missiles menus. Moves the highlight to the next program or missile on the list.

Prev. – Used in conjunction with the Programs and Missiles menus. Moves the highlight to the previous program or missile on the list.

Option

Purchase – Used in conjunction with the Programs and Missiles menus. Purchases the currently highlighted missile or program.

Done – Used in conjunction with the Programs and Missiles menus. Removes the missile or program list and allows you to select another supply or exit the section.

Supply

Provision – Displays the total number of provisions on your ship, the number of days the supply will last, and the amount the drydock is charging per provision/day. Provisions are purchased in terms of provision days.

Ore IV – Shows the amount of Ore IV on the ship (which includes any Ore IV on the shuttles or ore processors). Enter the number of units you wish to purchase. 1 unit of Ore IV costs 1 credit.

Programs – Displays all of the programs available. Any programs that you already own are marked "have" under the Cost column. With the mouse, a program type can be selected by simply "clicking" its name.

Missiles – Lists all of the available missiles, their cost, the amount you already own, available missile rack space, and your on-hand credits. With the mouse, a missile type can be selected by simply "clicking" its name.

Use the Parts section to purchase new parts, repair old parts, or sell off parts for some quick cash.

The screen is divided into three windows. They are: the Part Data window, the Details window, and the Credits Data window.

Part Data lists all of the parts that you have or are available for your spacecraft. If you do own a particular part, it will have its operational percentage listed next to it. This is calculated by dividing the part's current damage point level by its maximum damage point level. For example, a part at 13 dp's with a maximum of 15 dp's would have a 87 operational percentage.

The Details window shows the currently highlighted part's name and resale value if you happen to own the part.

A quick reminder: *part* and *system* are synonymous terms.

Parts

Next – Highlights the next system on the Parts Data list.

Prev. – Highlights the previous system on the Parts Data list.

When using the mouse, you may simply "click" the part's name to highlight it.

Repair

Repair – Repairs the currently highlighted system. The amount of damage, the cost, and the repair duration are displayed before you give the drydock the ok to repair it. The sophistication of the part must be less than the sophistication of the starport in order to have it repaired.

Purchase

List – Displays the Parts For Sale window which lists all of the different brands of parts available for the currently highlighted system. A highlight will appear on the first item of the list. Use the Parts menu or a mouse to move it.

Purchase – Purchases the currently highlighted part on the Parts For Sale Window. You may not purchase a part if you already have one of the same system.

Sell

Sell – Sells the currently highlight part for the resale value displayed in the Details window.

Warning

Some of the less sophisticated drydocks do not have certain critical parts for sale. Make sure that new critical systems are available before selling your old one. If you do get trapped at the drydock, you will have to restart the game.

LABOR MART

Labor Mart is the section where you can hire, fire, and asomnigenate crewmembers.

The Crew Data window list all of the crewman on your ship, their current watch, their grade, and their specialty.

The specialty abbreviations are:

Astr   Astrogator
Capt   Captain
Engr   Engineer
Gunr   Gunner
Mari   Marine
Minr   Miner
Pilt   Pilot

Cursor

Next – moves the highlight to the next crewmember on the Crew Data and Hiring Data windows.

Prev. – moves the highlight to the previous crewmember on the Crew Data and Hiring Data windows.

Crew

Release – Releases the currently highlighted crewman from your employment. Releasing does not cost anything and any back-pay owed to the crewman is voided. Unfortunately, once a crewman has been released, it is highly unlikely that he will reappear on the Hiring Data window.

Asomnigenate – Asmonigenates the current highlighted crewman. This process is only available for the gunners and astrogators. It always costs 25,000 credits.

Hire

List – Displays the Hiring Data window. Use the Cursor menu or the mouse to move the highlight.

Hire – Hires the currently highlighted crewman. Current labor regulations require that you pay 25% of the crewman's yearly income upon hiring.

Done – Removes the Hiring Data window.

Warning

Do not release all of your astrogators unless there are more available on the Hiring Data window or you will not be able to leave the drydock. Once a crewman has been released, he cannot be rehired.

Also, try not to lose all of your astrogators by failing to pay them. If there aren't any on the Hiring Data window, you will not be able to leave the drydock.

Use the Gear section to outfit your marines for boardings and ground assaults.

Marine

Next – Finds the next marine on the crew roster and displays his data in the Marine Data window.

Prev. – Finds the previous marine on the crew roster and displays his data in the Marine Data window.

Portable

Select the name of a portable to purchase it for the marine currently displayed in the Marine Data window. If the marine already has a portable, you will be given a trade-in allowance.

Exosuit

Select the name of an exosuit to purchase it for the marine currently displayed in the Marine Data window. If the marine already has an exosuit, you will be given a trade-in allowance.

SPACECRAFT

The Spacecraft section allows you to purchase a new spacecraft.

The screen has two windows: the Spacecraft Data window and the Schematic window.

The Spacecraft Data window lists the design name, builder, cost, and the visibility modifiers for each of the ship's sections.

View

Allows you to view the selected spacecraft design. The ship data, along with a schematic, are displayed.

Purchase

Purchases the selected spacecraft and moves all of your parts into it. If the size totals of any of the sections are too high for the new ship, you will be informed and the sale will be cancelled.

When you purchase a new ship, your old one is taken by the drydock. You may not own more than one ship at a time.

STARPORT

The Starport section of Universe II is divided into two sections. They are the Text Parser and the Transactions Terminal.

When you are in the text parser section, commands are entered by typing them instead of being selected off a menu. This means that the proper command may not always be readily apparent, or that there may be more than one correct command. It also means that there is greater flexibility – problems may be solved by more than one method.

In addition, you will be able to talk with other characters in the game, explore the hidden areas of certain starports, and collect valuable tools and clues to complete the game.

At every starport is a room with transaction booths. Inside these booths are transaction terminals, which allow you to buy and sell products, exchange ore for credits, load and unload passengers, and leave some of your crew for training. Type "Activate Terminal" inside of a transaction booth to use a terminal. The computer will leave the text parser mode and switch to the standard pull-down menus. When you exit the terminal, you are returned to the text parser.

Starport Designs

All starports include a spacefield, a gravsled platform, a customs barrier, and a room with transaction booths.

Some areas may not be open to you, so don't panic if you can't get a door to open, you may be able to go through it later.

Movement With the Text Parser

Note: Boldface entries inside of curly braces ({ }) must be typed exactly as they appear, including punctuation.

North, South, East, West – These will move you in the appropriate direction if there is a clear path. These can be abbreviated n, s, e, and w respectively.

Enter, Exit – Use these to enter and exit structures such as gravsleds and transaction booths.

{Pilot, Liftoff} – Typing this inside of the orbital shuttle will cause you to leave the text parser and return to the main ship.

Manipulating Objects With the Text Parser

Take [object], Drop [object] – Take and drop objects respectively. You may not carry more than 5 objects at any time.

Give [object] To [person] – Gives the specified object to another character.

Take [object] From [person] – Takes the specified object from another character.

Communicating With the Text Parser

Ask [person] About [subject] – Ask another character about a person, item, or topic. For example, "Ask Guard About Gun" might ellicit the response, "The guard assures you that she has only had to use it twice."

THE TEXT ADVENTURE

Tell [person] About [subject] – Tell another character in the game about a person, item, or topic. For example, entering "Tell Bresheliah About Floyd" might get Bresheliah to say, "Great work! Here's 20,000 credits," if Bresheliah needed information about Floyd.

{[person], Yes}, {[person], No} – Use this respond to another character's question. If a customs officer wants to know if you have illegal products, your answer might be, "Officer, No."

Special Functions In the Text Parser

Activate Terminal – Use this command when you are inside of a starport transaction booth to use the terminal.

{Pilot, Liftoff} – Use this command inside of your orbital shuttle when you wish to return to your main ship.

Inventory – Lists all of the objects you have on hand. This can be abbreviated as "I".

Say Name – Enter this when you are inside of a transaction booth at the Vromus Prime starport. This will bring you to the Federated Worlds Special Forces headquarters where Admiral Bresheliah is located.

Quit – Exits the current game from the text parser. This command works the same way as the Abort function on the Save menu. Your game will *not* be saved if you use this command. To save your progress at a starport, you must return to the main ship using the "Pilot, Liftoff" command inside your orbital shuttle.

At every starport is a room with *transaction booths*. Inside these booths are *transaction terminals*, which allow you to buy and sell products, exchange ore for credits, load and unload passengers, and leave some of your crew for training.

To use the transaction terminal from the Text parser, type "Activate Terminal" when you are inside of a transaction booth. The computer will leave the text parser and switch to pull-down menus, which work the same way as the ones in the Flight and Drydocks sections.

When you select "Exit" from the terminal, you are returned to the text parser.

PRODUCTS

The Products screen is divided into four sections. They are: the Products For Sale window, the Cargo (Surface) Manifest, the Cargo Size Remaining window, and the Monetary Data window.

The Products For Sale window is a constantly updated display of products available for purchase. It lists the product's brand name, its type, cargo size, sophistication, and cost. The sophistication will always be that of the planet.

The Cargo (Surface) Manifest is a list of the products you have brought to the surface of the planet. It will *not* show products which are still in the main spacecraft's cargo hold. The Manifest lists the product's brand name, sophistication, and purchase price.

The Cargo Size Remaining window shows the amount of cargo space left in the landers on the surface.

Monetary Data shows your credits on hand and the surcharge the planet takes on any transaction. This surcharge is *added to any purchase* and *subtracted from any sale.*

Products

Next – Highlights the next item on the Cargo (Surface) Manifest window.

Prev. – Highlights the previous item on the Cargo (Surface) Manifest window.

Buy

Buys the corresponding product on the Products For Sale window. For example, selecting the menu entry Product 3 would purchase the third item on the Products For Sale window.

The computer will automatically place the product in a shuttle with sufficient space.

Sell

Requests an offer for the currently highlighted item on the Cargo (Surface) Manifest. An offer will be posted and you can select whether to accept it or decline.

Use Ores to sell ore you have obtained using ore processors, a ramscoop, or captured from another ship.

The screen has three windows. They are: the Monetary Data window, the Exchange Rates window, and the Ore Data window.

Monetary Data window shows your credits on hand and the surcharge the planet takes on any transaction. This surcharge is *subtracted from any sale of ore* that you make.

The Ore Data window shows the ore currently in any of the shuttles on the ground.

The Exchange Rates window displays the current exchange rates for one unit of each of the ores.

Exchange

Ore I, Ore II, Ore III, Ore IV – Exchange this type of ore. Enter the number of units you wish to sell to the starport. This function will take ore from as many of the shuttles as necessary.

PASSENGERS

In Passengers you can collect and deposit passengers.

The Fare Data window lists all of the planets with starports (excluding the one you are on) and the fare you will receive for each passenger you carry there.

Passenger fare is based on the sophistication of the destination planet and its distance from your current location.

Planet

Next – Highlights the next planet on the Fare Data window.

Prev. – Highlights the previous planet on the Fare Data window.

Fares

Load – Loads as many passengers into the shuttles on the ground as possible. Once the passengers have been loaded, the computer will display the money you will receive upon delivering the passengers. You may not load passengers if you already have passengers in the hibernaculum or on the shuttle with a different destination.

Unload – Unloads all passengers on the grounded shuttles. You will receive the fare for each that was promised when you picked the passengers up. You must deliver all of your current passengers before taking passengers for a new destination.

Use the Technical School to raise the grade of your crewmen faster than normal duty.

The screen is divided into three sections. They are: the Training Data window, the Trainees window, and the Crew Data window.

The Training Data window shows the cost and time required to train a crewman up one grade.

The Trainees window shows any crewmembers currently being trained, their new grade, and the date on which they will graduate. You must return to the starport and enter this section within 90 days after the crewman's graduation or he will quit and leave the starport.

The Crew Data window shows the current crewmember.

Entering Technical School automatically collects graduated crewmen.

You may not train a crewman above grade 20 and you may only have 5 crewmembers at each school at any one time.

Crew

Next – Displays the next crewman on the crew roster on the Crew Data window.

Prev. – Displays the previous crewman on the crew roster on the Crew Data window.

Train – Selects the current crewman in the Crew Data window. Enter the number of grades you want the crewman to be raised. You will be shown the cost and asked to confirm the training. If you decide to proceed with the training, the crewman will appear on the Trainees window, with his new grade and graduation date. Be sure to record the graduation date so you won't lose a valuable crewman!

APPENDIX

STARSYSTEM LIST

Starsystem Name	Star Type	Government Affiliation	Hyperdrive Coords X	Y	Z
Hope	Main Sequence	FW	0	0	0
Icharr	Main Sequence	FW	4	5	4
Kochab	Main Sequence	FW	-6	0	0
Prisa	Main Sequence	FW	2	-1	-3
Vromus	Main Sequence	FW	9	-4	-7
Douglas-Ouyang	Main Sequence	UDP	4	21	13
Eros	Main Sequence	UDP	-29	-9	13
Nilock	Main Sequence	UDP	-1	-9	9
Phobos	Main Sequence	UDP	-11	19	-4
Pyxis	Main Sequence	UDP	-1	5	-3
Toascella	Main Sequence	UDP	-7	-2	-10
Twain	Main Sequence	UDP	8	-7	3
Zhisou	Main Sequence	UDP	16	7	13
Ce Ente Calad	Giant	None	-2	13	-10
Clytios	Giant	None	8	-7	-3
Deimos	Neutron	None	-10	18	-5
Evrytion	Giant	None	1	-10	-11
Godel	Main Sequence	None	12	4	-7
RCJ 2336ß	Giant	None	2	-5	8
Zworzykyn's Star	Dwarf	None	1	2	-18

PLANET LIST

Planet Name	Starsystem	Sophistication	Culture	Starport	Drydock	Government
Arbest	Eros	99	7	Yes	Yes	UDP
Aurei Ise	Douglas-Ouyang	24	1	No	No	UDP
Axia	Hope	88	7	Yes	Yes	FW
Bahnir	Pyxis	65	8	Yes	Yes	UDP
Baliolsol	Nilock	60	5	No	No	UDP
Benison	Zhisou	66	6	Yes	Yes	UDP
Cetus Amicus	Icharr	85	7	Yes	Yes	FW
Fevvel	Pyxis	74	7	Yes	No	UDP
Grotto	Pyxis	79	6	Yes	No	UDP
Imperial Beurn	Icharr	49	9	Yes	No	FW
Ivilose	Prisa	31	1	Yes	No	FW
Miga Kambut	Douglas-Ouyang	56	8	Yes	No	UDP
Milokarr	Toascella	56	9	Yes	No	UDP
Myl	Pyxis	37	3	Yes	No	UDP
Rouvchorra	Toascella	31	4	Yes	No	UDP
Schrelos	Phobos	29	4	Yes	No	UDP
Serendip	Kochab	70	7	Yes	Yes	FW
Sirrial	Douglas-Ouyang	64	3	Yes	No	UDP
Stowe	Twain	72	2	Yes	No	UDP
Vromus Prime	Vromus	91	7	Yes	Yes	FW
Zeath	Prisa	84	7	Yes	Yes	FW

All cultures go through a distinct evolution. This evolution can be broken up into 9 parts or *culture types*. They are:

Culture Type 1
Pre-Cultural – Clans and tribes. No universal political authority. No organized Art, Religion or Science.

Culture Type 2
Fuedalism – Warriors and the Priesthood in power. Art as a response to Nature.

Culture Type 3
Breakdown of Fuedalism – The Reformation. Early types of art disappear.

Culture Type 4
Formation of Aristocratic States – Growing political absolutism. Art begins to mature along with Philosophy. The rise of puritanical religions to oppose the new absolutism.

Culture Type 5
Absolutism – The Aristocracy is controlled by the King and the Middle Class. Art becomes intellectual. The great conclusive Philosophies. The zenith of Mathematical thought.

Culture Type 6
Revolution and Napoleonism – The Middle Class combats alliance of the Aristocracy and King. The victory of Money over Blood. Exhaustion of Art forms.

Culture Type 7
Contending States – Dominance of Money. Rational social ethics replace Religion. Conceptual Art. Final Thought in Mathematics.

Culture Type 8
Caesarism – The victory of Force Politics. Nations decay into a formless mass, soon to be forged into an Imperium of gradually increasing despotism. Archaic, exotic Art.

Culture Type 9
The Final Political Form – The world as a Spoil. Barbarians at the borders. Political control falls into a permanent rut of ineffectual leaders. Primitve human conditions thrusting up into the highly civilized way of living.

Illegal Imports By Culture

Culture	Illegal Product Types:
1	Food/Spice, Information
2	Art/Artifact, Entertainment, Information
3	Art/Artifact, Narcotics, Jewelry, Entertainment
4	Art/Artifact, Entertainment, Clothing, Information
5	Weapons
6	Weapons, Transport, Information
7	Food/Spice, Lifeforms, Narcotics
8	Weapons, Information
9	Information

PARTS LIST

Hyperdrive

Brand Name	Damage Points	Size	EU per LY	Range in LY	Soph	Cost
Cee Squared	15	5	21000	12	70	40000
Interspace Products	8	5	11000	19	79	64000
Jonisiodal E1	12	7	12500	24	88	72000
Franklin Lab Aria	16	6	9800	36	99	118000

EU per LY – Energy units used per lightyear.
Range in LY – Hyperdrive range in lightyears.

Sub-light Drive

Brand Name	Damage Points	Size	EU per Grav/Hour	Max Gravs Acceleration	Soph	Cost
Rynox NRN	12	5	.030	488	70	23000
Vromus 820	9	3	.186	820	74	45000
Hinto/KotoCo	16	6	.168	854	84	54000
Athik Tech 918	21	6	.236	1011	88	71000
Franklin Lab Fergent	23	6	.306	1895	99	98000

EU per Grav/Hour – Energy units per gravities acceleration per hour.
Max Gravs Acceleration – Maximum gravities of acceleration.
Notes:
- If this system's damage points are zeroed, your ship will be destroyed.
- This is a partial operation device.

Gravity Generator

Brand Name	Damage Points	Size	Max Gravs Compensated	Soph	Cost
Gelt Industries	4	3	570	66	19000
Athik Technical	7	3	850	74	27000
Melbourne TF	9	3	1100	88	48000
Franklin Lab Gee	11	5	2500	99	64000

Max Gravs Compensated – Maximum acceleration in gravities that the generator can withstand.
Notes:
- If this system's damage points are zeroed, your ship will be destroyed.
- This is a constant drain device.
- This is a partial operation device.

Converter

Brand Name	Damage Points	Size	EU per Ore IV	Soph	Cost
Vromus MassCon 3	1	2	17	85	15000
Doestovski Sol 3	3	3	21	88	18500
Athik Technical LTMC	5	3	26	91	26000
Franklin Lab Cashir	5	5	30	99	32000

EU per Ore IV – Energy units generated per unit of Ore IV converted.
Notes:
- If this system's damage points are zeroed, your ship will be destroyed.
- This is a partial operation device.
- This is a constant drain device.

PARTS LIST

Accumulators

Brand Name	Damage Points	Size	Energy Units Maximum Storage	Soph	Cost
Alkis Group	6	3	640000	85	34000
Vromus Storage Sys	9	4	1500000	88	44000
Axian Corprate 4/4	9	3	2870000	91	56000
Franklin Lab HCX	10	5	3900000	91	99000
Voltac Group Bota	10	5	6000000	99	145000

Notes:

- If this system's damage points are zeroed, your ship will be destroyed.
- This is a partial operation device.

Ore Storage

Brand Name	Damage Points	Size	Maximum Units per Ore Type	Soph	Cost
Baynus Pelican	8	6	400000	74	17000
Voltac Group MDM	8	8	600000	74	28000
Aciladies OreStar	8	10	900000	85	36000

Bridge

Brand Name	Damage Points	Size	Soph	Cost
Sealex Commander	8	7	85	12000
Hinto/KotoCo Lambda	11	9	88	15000
New Caledonian B	13	9	91	24000

Notes:

- If this system's damage points are zeroed, your ship will be destroyed.
- This is a constant drain device.

Crew Quarters

Brand Name	Damage Points	Size	Crew Capacity	Soph	Cost
Sealex Voyageur	13	7	13	85	12000
Hinto/KotoCo CACMC	16	9	21	88	16000
New Caledonian B	20	9	30	91	24000

Notes:

- This is a constant drain device.
- This is a partial operation device.

Computer

Brand Name	Damage Points	Size	Program Capacity	Tevops per Minute	Soph	Cost
Alkis 12/3	2	1	6	11.4	72	17000
Gedvex Quartz	2	1	11	16.8	84	23000
Intellect 200	3	1	15	19.8	88	46000
Intelligence Engine	2	1	15	24.0	99	95000

Tevops per Minute – Trillions of program operations executed per minute.

Notes:

- If this system's damage points are zeroed, your ship will be destroyed.
- This is a constant drain device.

Autodoctor

Brand Name	Damage Points	Size	Max Health Restored	% Health per Hour	Soph	Cost
Salven Mark 7	3	2	75	8	88	15000
Trithens Med EWJ	3	2	80	10	88	21000
Santillo Tipo Quatro	2	1	100	15	99	34000

Max Health Restored – The maximum health percentage that can be restored.
% Health per Hour – The percentage health restored per hour of use.

PARTS LIST

Hibernaculum

Brand Name	Damage Points	Size	Passenger Capacity	Revivals Lost %	Soph	Cost
Kintopir'tern K/L	9	5	59	8	88	20000
Santillo Tipo Equis	12	7	108	6	99	26000

Revivals Lost % – The percentage of hibernation revivals that die on the average.
Notes:
- This is a constant drain device.
- This is a partial operation device.

Vidcomm

Brand Name	Damage Points	Size	Maximum km Range	Soph	Cost
Thuke Victor	1	1	24000	85	8000
Giaperelli Marconi	1	1	55000	91	5600
Psion WF1964	1	1	90000	99	11000

Maximum km Range – The maximum range (in kilometers) for message reception.

Cargo Hold

Brand Name	Damage Points	Size	Max Cargo Size Units	Soph	Cost
Colombia Storage Co	5	2	100	65	8000
Sehvalese Number 9	7	3	220	66	5600
Durkess Loadmaster	8	4	310	74	11000

Max Cargo Size Units – The maximum number of cargo size units which can be held.
Note:
- This is a constant drain device.

Atmospherics

Brand Name	Damage Points	Size	Soph	Cost
Yop Company Cli-Mate	5	2	85	5400
Gas Technology AC#12	6	1	88	7900
Franklin Lab Dezzo	8	1	99	13000

Notes:
- •If this system's damage points are zeroed, your ship will be destroyed.
- •This is a constant drain device.

Solar/Planetal Scanner

Brand Name	Damage Points	Size	EU per Scan	ECCM%	Soph	Cost
Tolbien Scout	4	3	1100	3	79	12000
Hinto/KotoCo Heiki	9	4	1100	5	84	14000
Electroscanner S/O 3	10	3	2200	12	88	19000
Psion Worldfinder	7	3	3500	26	99	27000

EU per Scan – Energy units used per scan.
ECCM% – The percentage chance of overcoming an enemy ECM jam.
Note:
- •If this system's damage points are zeroed, your ship will be destroyed.

Resource Scanner

Brand Name	Damage Points	Size	Energy per Scan	Range km	Accuracy +/ % Error	Soph	Cost
Petroscan Assayer	2	1	2000	2500	20	85	12000
Axian Corprate	3	1	8000	7500	11	88	17000
Psion SRS	2	1	7600	10000	2	99	25000

Range km – Maximum resource scanner range in kilometers.
Accuracy +/- % Error – The range of the scanner inaccuracy.

PARTS LIST

High Definition Scanner

Brand Name	Damage Points	Size	Energy per Scan	Range km	Soph	Cost
Thuke Gravitic Scope	2	1	8000	10000	85	17000
Melbourne GravScan 1	3	1	12000	26000	88	21000
Psion Interegator	3	1	13500	85000	99	42000

Range km – Scanner maximum range in kilometers.

Orbital Shuttle

Brand Name	Damage Points	Size	Energy Capacity	Maximum Passengers	Csize Capacity	Ore Maximum	Soph	Cost
Quentrix II E	25	3	37000	10	18	40000	79	21000
Icarus E	27	3	56000	8	25	40000	85	23000
Axian Corprate ES	32	3	75000	20	21	78000	85	29000
Voltac Group ES	35	4	140000	50	99	102000	91	36000
Franklin Lab FS	35	4	200000	65	123	111000	99	44000

Energy Capacity – Energy required to launch.
Maximum Passengers – Maximum number of passengers which may be carried in the shuttle.
Csize Capacity – Maximum number of cargo size cargo which may be carried in the shuttle.
Ore Maximum – Maximum capacity of ore by type.

MISSILE LAUNCHER

Brand Name	Damage Points	Size	EU per Missile	Salvo MSU Maximum	Soph	Cost
Giaperelli Ballista	10	2	6000	35	85	17000
Letmikin System's MZR	11	3	8300	60	88	23000
Woden Arma VII	11	2	9000	85	99	29000

EU per Missile – Energy units required to fire each missile.
Salvo MSU Maximum – Maximum number of missile size units per salvo.

MISSILE RACK

Brand Name	Damage Points	Size	MSU Capacity	Soph	Cost
Melbourne Sagitarius	12	3	195	85	29000
Franklin Lab Siddnar	15	5	250	88	34000
Woden Vigilant	17	4	410	99	41000

MSU Capacity – Missile size unit capacity.

ENHANCED BEAM WEAPON (EBW)

Brand Name	Damage Points	Size	Energy per Pulse	Preheat Time	Damage Inflicted	Range km	Soph	Cost
Zeus Penetrator	11	6	54000	11	30	5000	85	19000
Sunstorm HF 2	11	5	70000	8	36	7200	88	24000
Sunstorm HF 3	13	5	88000	6	46	9800	91	26000
Woden EBW+	13	7	260000	3	54	11000	99	31000

Energy per Pulse – Energy units per EBW firing.
Preheat Time – Delay between firings.
Range km – EBW maximum striking range in kilometers.

PARTS LIST

SHIELD GENERATOR

Brand Name	Damage Points	Size	EU per DP Deflected	Maximum DP Blocked	Soph	Cost
Hinto/KotoCo Ronin	10	2	90	12	72	18000
Voltac Group Gen 8	23	3	120	19	74	26000
Deflect Technologies	25	3	200	26	85	31000
Franklin Lab Torair	29	4	260	32	99	38500
Woden Plate+	40	7	400	47	99	56000

Note:
- This is a constant drain device.
- This is a partial operation device.

DOCKING ADAPTER

Brand Name	Damage Points	Size	Soph	Cost
Toloollo A/5	4	1	84	2500
Hinto/KotoCo A/9	6	2	84	2800

ELECTRONIC COUNTERMEASURE (ECM)

Brand Name	Damage Points	Size	Jam%	Soph	Cost
Voltac Group T/ECM	3	1	46	91	20000
Entrohaad Stattek	4	1	67	99	28000
Woden Confounder	3	1	83	99	34000

Note:
- This is a constant drain device.

ASSAULT CAPSULE

Brand Name	Damage Points	Size	Energy Capacity	Assault Crew	Cannon Strength	Shield DP Blocked	Cannon Range	Soph	Cost
Axian Corprate DSL	32	4	83000	2	12	6	2	88	29000
KotoCo Conquerer	46	4	104000	3	14	6	4	88	33000
Voltac Group Ares	61	5	126000	3	17	7	7	91	38000
Woden Assault Four+	78	5	198000	4	20	9	9	99	49000

ORE PROCESSOR

Brand Name	Damage Points	Size	Energy Capacity	Mine Crew	Hours per Tonne	EU per Tonne	Ore Capacity	Soph	Cost
Datar Dirtpro	13	4	80000	3	9	9500	32000	85	21000
Wertun Fiollage	16	4	120000	3	8	11000	54000	88	29000
Aciladies OreMaster	18	5	230000	3	5	15500	61000	91	32000
Voltac Group Creft	29	5	300000	2	5	14000	75000	99	41000
Franklin Lab Newgate	31	5	460000	2	3	12000	86000	99	56000

RAMSCOOP

Brand Name	Damage Points	Size	Units Ore IV per Minute	Soph	Cost
Wertun Infudibula	18	1	13	91	28000
Voltac Group DDS	24	1	16	99	31000
Franklin Lab Yonal	33	2	22	99	39000

Units Ore IV per Minute - The average number of units of Ore IV collected per minute of use.

WEAPONS LIST

Missiles

Brand Name	Damage Inflicted	Accuracy%	Range km	MSU	Cost
PN Pritchard SBR	—	78	8000	19	5200
Melbourne FU8	21	92	17500	17	3500
Giaperelli FU9	32	84	14000	21	4700
Franklin Lab FE	—	80	16500	18	4500
Woden FE	—	86	9500	27	5700
Thiodyne P/PD	48	71	13000	23	8900
Woden Nova	61	62	10000	27	10500
Illiya Nova	74	46	9000	29	11800

MSU – Missile Size Units

Notes:

• PN Pritchard SBR's damage shield generators directly for up to 5 dp's (damage points). Shield blockage does not count against this type of missile.

• Franklin Lab FE's are anti-personnel weapons. They will not work at all if the shield level of the target ship is above 3 dp's. If they do pass through, they will destroy up to 300% health of the enemy crew.

• Woden FE's are anti-personnel weapons. They will not work at all if the shield level of the target ship is above 9 dp's. If they do pass through, they will destroy up to 500% health of the enemy crew.

• Thiodyne P/PD's have a tendency to hit sub-light engines more than any other part of a spacecraft.

Exosuits

Brand Name	Blocks%	Move	Cost
Articulated Sys EXG	30	5	7800
KotoCo Absorber	52	2	12000
Woden Chain+	41	3	16500

Blocks% – Percentage health damage the exosuit blocks.
Move – Marine movement bonus.

Portables

Brand Name	Range	HealthDam%	Cost
KotoCo FireJet	2	58	1200
Voltac Group VE12	4	51	5600
Voigt Sydicate MM5	3	67	9000
Woden Blaster	5	88	13000

Range – Range in bridge squares.
HealthDam% – Health damage percentage inflicted per shot.

SPACECRAFT DESIGNS

Size and Visibility Modifiers of Commercially Availible Designs

Agora Class

Section	Size	Visibility Modifiers
Drives	13	-2
Energy	15	+2
C&S	29	+2
Scanning	5	0
Landers	12	0
Weapons	11	-2
Mining	1	0

Sutter Class

Section	Size	Visibility Modifiers
Drives	12	+2
Energy	20	-4
C&S	24	-4
Scanning	5	+4
Landers	8	+4
Weapons	24	0
Mining	16	-2

Morgan Class

Section	Size	Visibility Modifiers
Drives	15	-4
Energy	18	0
C&S	39	-4
Scanning	5	+4
Landers	8	+4
Weapons	25	0
Mining	1	0

Explorer 9 Class

Section	Size	Visibility Modifiers
Drives	15	+2
Energy	20	0
C&S	42	-2
Scanning	6	-4
Landers	12	+2
Weapons	38	0
Mining	8	+2

Al Vexan Class

Section	Size	Visibility Modifiers
Drives	13	0
Energy	14	+2
C&S	32	-2
Scanning	5	-2
Landers	10	-2
Weapons	27	+2
Mining	1	+2

Kotor Class

Section	Size	Visibility Modifiers
Drives	17	+4
Energy	18	-4
C&S	34	-4
Scanning	6	-4
Landers	8	+8
Weapons	14	0
Mining	1	0

Design Descriptions

Commercial Classes

Agora Class – The Agora Class spacecraft is a basic commercial vessel of modest capacity. Its chief disadvantage lies in its lack of C&S and weapons systems space.

Sutter Class – The Sutter is a mining vessel without peer in the Local Group. Its enormous energy and mining systems space make it the only ship for serious mining expeditions.

Morgan Class – There is a continuing debate as to which Morgan the shipyard was honoring: J. P. or Bloody. Spacious drives and weapons sections would make it an excellent mining or trade ship, except that its lacks capacity in the mining and lander sections. It has been said that it is "suspiciously over-powered."

Explorer 9 Class – The Explorer 9 Class ship is the largest and most versitile of all the commercially availible ships in the Local Group.

Al Vexan Class – The Al Vexan is another basic commercial vessel, albeit of greater capacity than the Agora.

Kotor Class – The Kotor has the largest drives section of any commercial spacecraft, making it the ideal high-speed transport vessel.

Research/Exploration Classes

Chen Class – The Chen is a small research/exploration vessel, used by many of the universities in the Local Group.

Dirac Class – The Dirac is a large research/exploration vessel, purchased and operated chiefly by large corporations and commercial research schools.

Warship Classes

Bowie Class – The Bowie is an all-round scout ship. Almost every government has a few, using them for everything from official couriers to a main line of defense on some of the less sophisticated worlds.

Moloverov Class – The Moloverov is a tanker and troop transport, used in conjunction with some of the larger warships. Is not much more than a few fuel tanks and a couple of holds with an engine.

Hideyoshi Class – The Hideyoshi is the common combat ship for most of the Local Group. It is much larger and more powerful than almost anything that could be commercially assembled.

Odysseus Class – The largest of any ships in the Local Group. The Odysseus Class is almost invariably seen with escorts of Moloverov and Hideyoshi ships. The Odysseus will out-gun any other type of ship. Only the most sophisticated planets use this design.

Privateer Class

Dagger Class – The Dagger is a design which appeared rather mysteriously around 2350. It is very powerful and designed with only two purposes in mind: raiding other spacecraft and destroying other spacecraft. No shipyard will take credit for this abomination, but it is believed that the UDP has been financing the manufacturer. It is not known where these ships are based.

UNIVERSE BBS

The Universe Bulletin Board System is provided for registered owners of Omnitrend's Universe II. It is intended as a forum for the exchange of ideas and comments between the players and authors of Universe II. In addition, new product announcements for Universe-related products will be placed on the bulletin board.

The BBS may be accessed via modem at either 300 or 1200 baud on the Omnitrend Software order line, (203), 658-6917, during the following hours:

Monday through Friday: 7 pm to 9 am
Saturday: 2 pm to Midnight
Sunday: All Day

An on-line help facility is availible to assit you in using the bulletin board. You will be allowed up to 30 minutes of connect time per day.

The Universe Bulletin Board is a complementary service to players of Omnitrend's Universe II. Omnitrend Software, Inc. reserves the right to discontinue this service at any time.

LOCAL GROUP DIAGRAM

PHOBOS UDP
Schrelos (4/29s)

DEIMOS

DOUGLAS-OUYANG UDP
Aurei Ise (1/24)
Miga Kambut (9/56s)
Sirrial (3/64s)

CE ENTE CALAD

ZHISOU FW
Benison (6/66sd)

PYXIS UDP
Bahnir (8/65sd)
Fevvel (7/74s)
Grotto (6/79s)
Myl (3/37s)

ICHARR FW
Imperial Beurn (9/49s)
Cetus Amicus (7/85sd)

GODEL

ZWORZYKYN'S STAR

HOPE FW
Axia (7/88sd)

PRISA FW
Ivilose (1/41s)
Zeath (7/84sd)

KOCHAB FW
Serendip (7/70sd)

TOASCELLA FW
Milokarr (9/56s)
Rouvchorra (4/31s)

RCJ 2336b

VROMUS FW
Vromus Prime (7/91sd)

CLYTIOS

EROS UDP
Arbest (7/99sd)

NILOCK UDP
Baliolsol (5/60)

EVRYTION

TWAIN UDP
Stowe (2/72s)

KEY:

Starsystem

Government

Main Sequence
Star

KOCHAB FW
Serendip (7/70sd)

Giant Star

Planet Has Drydock

Dwarf Star

Habitable Planet
Name

Culture Type

Planet Has Starport

Neutron Star

Sophistication

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