

M A N U A L

STARFLIGHT™



E L ■ C T R O N I C ▲ R T S™

**Instruction for Amiga IBM Atari ST
Commodore Tandy Apple and Apple II
last pages**



30-10-4619

Dear Starship Commander:

We are sorry you were unable to attend the Operation Starflight briefing last week. Those who attended can vouch for the enthusiasm and excitement that prevailed during the meeting. We at Interstel feel that this is the beginning of a new era, and that you and your colleagues will be instrumental in making this mission a success.

To make sure you will have all the information you need, we have included your own copy of the Technical Reference Manual. This document contains the information you need to operate your starship; without it, you could find yourself in deep space with no way out. Guard it carefully. Needless to say, it is highly confidential and is, if you will excuse the old cliché, For Your Eyes Only. The briefing transcript is included for the background information it contains.

As you know, Interstel is in no position to outfit starships as fully as you might like; consequently, a lot hinges on your entrepreneurial ability to generate revenues early on. You will then be able to use those revenues to outfit your starship for more distant (and more profitable) voyages. The following are a few suggestions in that direction:

Your initial allotment of 12,000 mu's is enough to allow you to buy four cargo pods, and to gather and train a crew. Your ship comes equipped with one Class 1 engine and 20 cubic meters of endurium, so you won't need to do anything to your starship except name it. We suggest you train your crew with the funds you have remaining after you purchase the cargo pods. You will then be in a good position to mine the minerals found on the planets in our own solar system. Fill the cargo pods with minerals and bring them back to Starport, where you will find willing buyers. We realize that some of you may find this strictly commercial endeavour somewhat degrading, but we have found that it is necessary in order to complete your primary mission. Of course, you are free to follow whatever strategy you see fit — just be aware that Interstel cannot afford to give you a second chance should you fail in your first attempt.

No matter what strategy you choose to adopt, it is wise to avoid the following, any one of which can spell disaster:

1. Running out of fuel
2. Running out of energy in your terrain vehicle
3. Running out of money
4. Getting killed in combat
5. Landing on a planet with crushing gravity
6. Engine or communication failures
7. Getting killed on planetside by storms or hostile lifeforms

In addition, we recommend that you check your Notices in Starport Operations before embarking on a journey. Notices often contain valuable clues, and may help you avoid potential disaster.



On behalf of all the personnel here at Interstel headquarters, we would like to wish you great success in your mission.

May the Rock of Truth shine brightly upon you.

Terrence Willwater
Director, Interstel

Technical Reference Manual

Confidential

PART 1: General Information

1.1 Objectives

Apart from goals you may set for yourself, two goals will be of primary importance to you. These are: **1) gathering information** **2) generating revenue**. The more information you gather, the more effective your explorations. Capital is indispensable for building an optimal ship and crew, thereby maximizing your efficiency. Interstel offers only a minimum amount of capital at the outset of your explorations.

You can generate revenue (measured in *monetary units* or *mu's*) in a number of ways. The following is a partial list. Commanders with an entrepreneurial bent should find no difficulty expanding the list.

1.1.1 Sale of Minerals. Interstel will purchase any minerals you bring back. Some are worth more than others. You will need to decide which ones are worth bringing back. The values of minerals can be found in the Mineral Value Chart in Part 5 ("Planetside") of this Reference Manual.

1.1.2 Sale of Artifacts. Interstel will pay for any artifacts you find. The amount of mu received depends on Interstel's evaluation of the artifact. You can repurchase artifacts previously sold.

1.1.3 Sale of Lifeforms and Lifeform Data. Alien lifeforms can be captured or holographically recorded, and then sold at Starport. Specimens bring a higher price than recordings, but take up cargo space. Interstel will not purchase specimens or recordings already in its collection.

1.1.4 Recommending Viable Colony Worlds. Superphotonic message drones installed in the ships can be used to recommend planets that appear suitable for colonization. Do not take this responsibility lightly, since the lives of thousands of colonists may depend upon your recommendation. When you return to Starport you will be given a report on the suitability of your recommendations. Should your recommended planets be found unsuitable, you will be fined.

The rest of this manual contains valuable information, including descriptions of the races found on Arth, a list of mineral values, a chart of specific lifeform evaluation aids, and the criteria to be used in determining the suitability of a planet for colonisation.

Your kit contains two additional items: First, the Starmap, an invaluable guide to the galaxy, provides important information on space coordinates and interstellar distances. Second, the Security Code Wheel provides the access code that allows you to leave Starport. See instructions for its use in the Command Summary reference card.

1.2 Races

You can choose from the following races of Arth when composing your crew. Each category includes a descriptive synopsis and some characteristic statistics. These statistics include:

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Learning Rate: a number from 0 to 10 which represents the number of skill points a member of that race acquires from a single training session;

Durability: a number from 0 to 10 which represents the amount of physical damage a member of that race can sustain;

Inherent Aptitude: the innate ability for each race in any of the five skills. The range of abilities is Excellent, Good, Average, and Poor. The Initial Value defines the beginning skill levels, and the Maximum Value defines the maximum skill level a member of that race is capable of attaining. These values are tabulated as follows:

Ability Level	Initial Value	Maximum Value
Excellent	50	250
Good	30	200
Average	10	150
Poor	0	100

See Section 1.3 ("Skills Overview") for a description of the five essential skills and their roles in the successful exploration of space.

HUMAN

Humans are a bi-pedal omnivorous race with smooth skin and a characteristic matt of scalp hair. They are 1-1/2 to 2 meters in height, and are light beige to dark brown in color. Humans have an internal skeleton and two small, narrow-set eyes which allow binocular vision. This race is particularly aggressive and tenacious. While moderately weak physically, Humans are highly flexible mentally and are particularly adept at theoretical modeling and in applications of logic and inference. Finally, although there is a degree of sexual dimorphism in this race, the differences are insignificant.

Durability	06
Learning Rate	09
Inherent Aptitude:	
Science	Excellent
Navigation	Good
Engineering	Good
Communication	Good
Medicine	Good

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VELOX

The Velox are insect-like creatures with two legs, two arms, and two intermediate appendages which can serve as either. They have a hard, red, chitinous exoskeleton, two large compound eyes, and two antennae which serve as olfactory sensors. When in an upright position a Velox is approximately 1-1/2 meters in height if male and 2-1/2 meters if female. Velox culture is akin to hive culture and they are not known to be particularly intelligent. They are, however, exceptionally strong and durable and they have excellent hand/eye coordination. These traits, in conjunction with a well developed spatial sense, make them well suited for engineering and technical tasks.

Durability	08
Learning Rate	06
Inherent Aptitude:	
Science	Good
Navigation	Excellent
Engineering	Excellent
Communication	Poor
Medicine	Poor

THRYNN

The Thrynn are a bi-pedal, carnivorous, reptilian race. Although graceful, with long necks and tails, they are very muscular and are covered with tough protective scales. They range in color from green to grey and are approximately 1-1/2 meters in height. Like Humans, they have an internal skeleton, and two forward set eyes. The Thrynn are cultured and diplomatic, but are said to be devious and cunning. For no apparent reason, they harbor an ancient animosity for the Elowan. The plant people, in turn, have little love for the Thrynn (see note below). The Thrynn have a fair overall learning rate and a fair constitution. They excel in situations involving protocol and diplomacy.

Durability	06
Learning Rate	07
Inherent Aptitude:	
Science	Good
Navigation	Good
Engineering	Good
Communication	Excellent
Medicine	Poor

ELOWAN

The Elowan are a bi-pedal photosynthetic race, 1 to 2 meters in height. They are willowy and delicate with numerous prehensile vines. Their color may range from a light yellowish-green to a deep greenish blue. They have two large, compound eyes which are characteristically a deep reddish-brown. They are highly empathetic and are particularly

creative thinkers. Although weak physically, they excel in interpersonal skills. Their excellent learning rate allows them to learn all skills relatively quickly.

Durability	02
Learning Rate	10
Inherent Aptitude:	
Science	Average
Navigation	Good
Engineering	Average
Communication	Excellent
Medicine	Excellent

ANDROID

Androids are sophisticated automatons and not, strictly speaking, a race. Because they are constructed of metals and plastics they are the most durable of all the races. At the same time, however, they cannot benefit from training because their programming is hard-wired and their skills are set at a fixed efficiency level. Of the numerous models available, Interstel uses the popular Biosynthetic DX99 series, best suited for use in tasks requiring straight-forward computation and linear analysis.

Durability	10
Learning Rate	00
Fixed Skill Levels:	
Science	50
Navigation	150
Engineering	100
Communication	00
Medicine	20

Note: Because of the ancient enmity between the Elowan and the Thrynn, it is not advisable to include a member of each race on your crew. Although the individual members of these two races would undoubtedly deal with each other civilly on board your ship, you would be unable to communicate with either race in a space encounter. This is because the presence of a member of one race precludes any useful communication with the other race.

1.3 Skills Overview

Crew members (except for Androids, see Races, above) can be trained in five essential skills: **science**, **navigation**, **engineering**, **communications**, and **medicine**. All training is done in Personnel. A given crew member's learning rate depends on the learning rate of his or her race. All skills are important to the proper functioning of your vessel, with the most important being Communication, Science and Navigation. Following is a brief description of each skill and its relevance to your crew.

Science: Your ship's sensors are your primary means of gathering information, and it is the duty of the Science Officer to interpret that information. The more skilled a Science Officer the more complete and accurate will be the information from the sensor reading. This information can be of vital importance (e.g., an alien vessel's military capability; a planet's suitability as a potential colony world). At skill levels greater than 150, a Science Officer can detect aliens over long distances and can pinpoint their position.

Navigation: Navigation is of primary importance to space travel. Without an effective Navigator you face the danger of becoming lost in space. This may result in the loss of precious time and fuel and may even place you in hostile territory. In addition, a skilled navigator (with a skill level greater than 150) can determine the presence of continuum fluxes in space. These fluxes are paired and connected by extra-dimensional worm-holes, so that by entering one of a pair of fluxes, your vessel will be transported, almost instantaneously, to the other. Although continuum fluxes can be useful in navigation (since a highly-skilled navigator can take advantage of their ability to transport you instantaneously), they can also be very hazardous. A poorly trained Navigator will have difficulty spotting fluxes and may even cause your vessel to hit one accidentally. Navigators with skill levels of 150 or below will not be able to see them at all. In addition, after transportation through a flux, it takes the Navigator time to determine the ship's new position. The more skilled the Navigator, the less time it will take and the less risk your crew will face. It is the Navigator who fires the ship's missiles and lasers; the more skilled the navigator, the greater the accuracy of the shot. Finally, if your Navigator's skill is less than 200, your terrain vehicle may become lost during storms on a planet's surface.

Engineering: It is your Engineer's responsibility to repair any damage your ship sustains. The speed and efficiency with which the repairs are executed depends on the Engineer's skill rating. In addition, key elements may be required for repairs, and the longer a repair takes, the higher the probability that one of these elements will be required. Repairs must be suspended until the missing element is obtained. All the elements that may be required for repairs can be obtained in the Trade Depot at Starport (see Part 2, below).

Communications: Alien races will be your primary source of information. The Communications Officer interprets all communications using an on-board translating device. The less skilled the Communications Officer, the more untranslated material you can expect to receive. It is also helpful if your Communications Officer (and to a lesser extent any of other crew member) is a member of the alien race with which you are communicating. Thus, if one of your crew is a member of the alien race, your Communications Officer's skill level will be effectively increased by 25 points during the encounter. And if the Communications Officer happens to be a member of the alien race, his skill level is effectively increased by 50 points.

Medicine: Your Doctor's skill level determines the speed and efficiency of his medical treatment. Even though your ship is equipped with the latest in Medi-Tech devices, it is the Doctor's skill level that determines the speed and efficiency of the treatment. The higher the skill level, the less time it will take to treat a wound. All injuries heal naturally over the course of time at a rate proportional to the Doctor's skill level. Planetside treatment can never equal shipboard treatment where the Doctor has access to Medi-Tech equipment.

The Captain: Although there is no single "command" skill, your Captain's combined skill levels in the above five areas contributes to your ship's apparent power. A highly skilled captain can effectively double your ship's

perceived power. Also, if any of your crew should be killed, the next most capable crewmember will take over the dead crewmember's functions. Training your captain can therefore provide backup skills.

PART 2: Starport

2.1 Overview

The Starport is your stepping stone to the universe, the place where each new adventure begins and ends. At the Starport you can select your crew, outfit your ship, read your messages, make financial arrangements, and generally take care of all your affairs before launching into space. The Starport consists of six independent modules and a docking bay. Each module provides you with a number of options, each one corresponding to a particular operation or activity. To enter a module, maneuver your character to the module's entry field (the small area like a welcome mat in front of the door) and press a key. See the enclosed reference card for details. The modules are described in detail below. Refer to Figure 1, below.

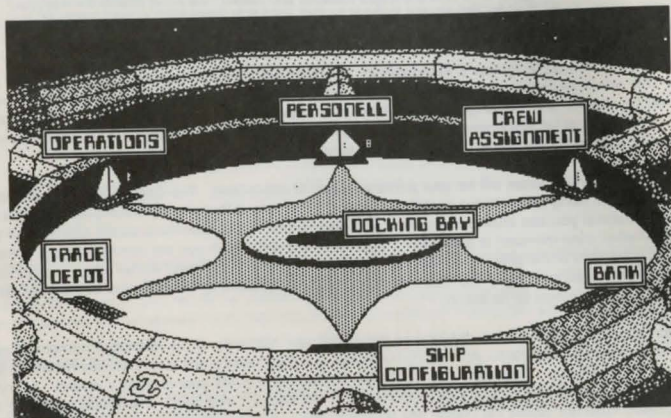


Figure 1: Starport

2.2 Starport Modules

2.2.1 Operations

In Operations you can receive messages from Interstel, and have your colony world recommendations evaluated. The following options are available:

Notices — This option lets you read the messages in your electronic mailbox. Messages can provide clues regarding alien encounters, possible colony world recommendations, locations of continuum fluxes, etc.

Evaluation — Use this option to evaluate your colony world recommendations, and to be informed of fines levied.

Exit — Returns you to the Starport amphitheater.

2.2.2 Trade Depot

At the Trade Depot you can buy or sell commodities or artifacts, and analyze any artifacts in inventory, whether yours or Starport's. The following options are available:

Buy — Shows items that are for sale, and their cost per cubic meter.

Sell — Shows all the salable items in your inventory *except* ship components.

Analyze — Describes all artifacts listed for sale. Will also describe, for a fee, any artifacts in the depot's inventory, and all those in your ship's hold.

Exit — Returns you to the Starport amphitheater.

2.2.3 Personnel

The Personnel module controls the selection and training of crewmembers, and the maintenance of all personnel files. The following options are available:

Create — Use this option to select the members of your crew. You can select crewmembers from any of the five races described above (see Section 1.2). Each crewmember has his or her own personnel file, containing statistics on race, skill levels, training and so on.

Train — Use this option to train your crewmembers in any of the five skill areas outlined above (see Section 1.3). Skill levels increase in accordance with the following formula: number of training sessions *times* learning rate. Note that training is expensive, and that initial capital provided by Interstel may not allow you to train all your crewmembers to the highest skill levels.

Delete — This option deletes all the data from the selected file. Note that any funds expended in training a deleted crewmember are not refunded upon deleting the file.

Exit — Returns you to the Starport amphitheater.

2.2.4 Crew Assignment

Any assignment or change in the duties of your crewmembers takes place in the Crew Assignment module. Here you can page through your personnel files and make or change any assignments. Each crewmember is summarized on the cover of his or her personnel file, which is displayed on the lower part of the screen. Duties and current assignments (if any) are displayed on the upper part of the screen. You can assign a crewmember to a particular duty when that crewmember's file is on the screen and when the required duty is highlighted on the upper part of the screen. Once you assign a crewmember, the "highlight bar" moves down to the next position. When all the duties have been assigned, the highlight bar disappears and you can return to the Starport amphitheater. See your reference card for details. If you want to change any assignments above the highlight bar, exit Crew Assignment and reenter.

2.2.5 Bank

Here you can examine your bank records, in the form of your 10 most recent financial transactions, showing dates, descriptions, amounts, and your ending balance. If your ending balance is negative, and you need to buy engines or Endurium, you will need to sell off inventory in order to leave the Starport. You may not buy anything on credit.

2.2.6 Ship Configuration

Here you can outfit your ship, repair damage, sell old equipment, and name (or rename) your ship. You can choose from the following options:

Buy — Use this option to outfit your ship with cargo pods, engines, shields, missiles and laser cannons. The following equipment is available for purchase (given sufficient funds):

Cargo Pods: Cargo pods can hold 50 cubic meters of cargo. Only one class of pod is available, at a cost of 500 mu. Tip: as soon as you can afford it, buy a pod, fill it with fuel and take it with you. It will extend your effective range.

Engines: you can choose from five classes of engines, ranging from Class 1 (1,000 mu) to Class 5 (100,000 mu). The higher the class, the better the fuel efficiency and the greater the ship's acceleration during encounters.

Shielding: Shields provide protection during combat, and range from Class 1 (4,000 mu) to Class 5 (125,000 mu). The higher the class, the more effective they are against enemy missiles and laser cannons. Shielding uses energy, and shields need to be raised or lowered (by the Navigator) as circumstances dictate. (A good Navigator should not be caught with his shields down, but neither should he keep them raised unnecessarily). In addition, shields are more expensive than armor (see below), and they do not function in nebulas. On the positive

side, shields do not slow your ship down with a lot of weight (as does armor), they can be repaired if damaged, and they automatically recharge slowly during each encounter.

Armour: Armour provides alternative protection during combat. Unlike shields (see above), armor weighs a great deal and will slow your vessel down. In addition, armor cannot be repaired when damaged, and must be replaced. On the positive side, armor is cheaper than shielding (Class 1: 1,500 mu to Class 5: 25,000 mu), it is always in place, and continues to function in nebulas.

Missiles: Missiles cost more than lasers (see below), they can be dodged, and they use five times as much energy when fired. On the positive side, missiles inflict three times the damage of lasers, and they are effective at long range. Missile launchers cost more than laser cannons, ranging from 12,000 mu to 200,000 mu.

Lasers: Lasers are strictly short range weapons, and they inflict less damage than missiles. On the other hand, laser cannons are cheaper than missile launchers (ranging from 8,000 to 150,000 mu), and they cannot be dodged.

Sell — This option lets you sell the components of your ship, so you can buy a higher (or lower) class item. Note that depreciation begins the moment you buy an item, so that your selling price will always be lower than your purchase price (with the possible exception of cargo pods).

Repair — This option offers you quick dry-dock repairs. Be prepared for the high cost of this convenience.

Name — Use this option to name or rename your ship. Unchristened ships may not leave Starport.

Exit — Returns you to the Starport amphitheater.

2.2.7 Docking Bay

When you are ready to launch your ship into space, maneuver your character onto the docking bay in the center of the amphitheater (see Figure 1) and press a key. Starport will direct you from there. Remember to keep your Security Code Wheel handy as you leave Starport.

PART 3: Interstel Superphotonic Starship

3.1 Ship's Console

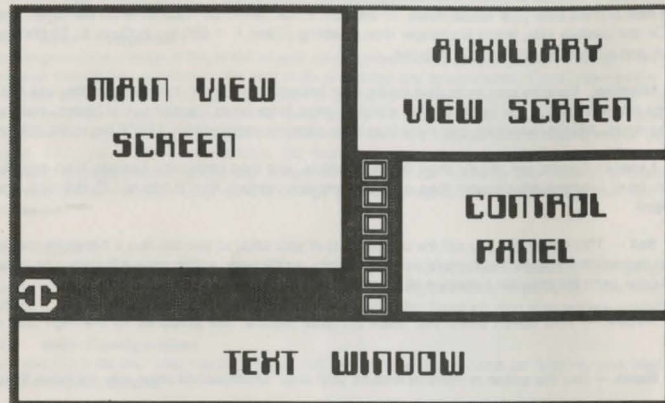


Figure 2: Ship's Console

The Ship's Console is divided into four main areas. The **Main View Screen**, the central viewing area for the main spatial displays and communications; the **Auxiliary View Screen**, for viewing ship status and sensor information; the **Control Panel** for executing commands through an array of buttons; and the **Text Window**, where all the text messages are displayed. These four areas are described in detail below. An additional area, above Main Screen, displays your coordinates in space. The first number displays your horizontal position, and the second your vertical position.

3.1.1 Main View Screen

This screen displays spatial and communications information. On it your computer will display tactical information during encounters, contour maps of planets from orbit, and planet and stars during system and hyperspace travel. Planet size as reflected on this screen is to scale.

3.1.2 Auxiliary View Screen

This screen displays Status and Sensor data from your Science Officer, and Damage and Repair information from your Engineer. You will also see system maps, Mercator projections and malfunction alerts displayed here.

3.1.3 Control Panel

The Control Panel can execute all the main ship commands through an array of buttons. Here you can select a crew member, and then select a function associated with that crew member.

3.1.4 Text Window

All text messages, both incoming and outgoing, are presented here. When you enter a System the Text Window displays the following information:

Spectral Class: see Spectral Chart.

Ecosphere: The band of acceptable radiation around a star, capable of sustaining lifebearing planets. Given in terms of orbital position. (e.g., Ecosphere, 2-4).

3.2 Flight Operations

Ship Functions are accessed via the Control Panel. Each crewmember controls a specific set of ship functions. To access a particular function, you first need to select the appropriate crewmember. Following is a brief description of all available functions classified by crewmember.

3.2.1 Captain

The Captain is the ultimate authority both in space and at Starport. The Captain decides when to launch or land the ship, which planets to recommend to Interstel, and when to disembark. When you select Captain from the Control Panel, you are provided with the following options:

Launch/Land — This option reads **Launch** until the ship has launched from Starport or a planet, after which it reads **Land**. The ship can only land from orbit. Choosing **Land** presents you with the following options:

Select Site: Allows you to select a promising landing site on the planet's surface. Move the cursor, using the arrow keys, over the target landing site. The planetary coordinates of the cursor's position will also be shown. You will be aided by a topographic map of the planet in the Auxiliary View Screen. To the right of this map is a topography key. The color of the top bar represents the highest altitude, the bottom color represents liquid terrain. While it is possible to land and travel in liquid terrain it is not recommended, since fuel efficiency is low and there are no minerals, lifeforms or ruins to be found.

Note: Generally, lifeforms tend to cluster in temperate climates at the lower altitudes, and minerals are found in much greater density at higher altitudes.

Descend: This option engages the autopilot. Descent to a planet's surface is automatic once the landing coordinates have been chosen in the **Select Site** option.

Abort: Returns you to Captain's option screen.

Disembark — This option allows the crew to leave the ship when it has landed on a planet or docked at Starport.

Cargo — This option allows the Captain to examine the current cargo list, jettison undesired items, and pick up debris from destroyed alien spaceships. Note that any item jettisoned is considered destroyed and cannot be recovered. Note also that messages obtained from ruins are considered cargo.

Log Planet — This option allows the Captain to recommend a planet to Arth for colonization via a superphotonic homing drone. Recommendations may be made either from orbit or from the planet's surface but can only be made once for any given planet.

Ship's Log — This option allows the Captain to read from and write to a personal ship's log. There is a limited amount of space in the log. To quit this option move to EXIT and press the Return key.

Bridge — This option is the same for all crew members, and restores you to the Control Panel so you can choose another function.

3.2.2 Science Officer

The Science Officer is responsible for gathering and analyzing all relevant information about the status and condition of the ship as well as its surroundings. When Science Officer is selected from the Control Panel, the following options become available:

Sensor — This option provides various items of information, depending on current status or location. The Sensor is one of the main sources of information about your ship, alien ships, and planets. The following information is available through the sensor, classified by location:

In Orbit:

Auxiliary View Screen:

Mass: Mass of planet (in tons).

Bio: Percentage of life density.

Min: Percentage of mineral density.

Note: 100% life or mineral density would be the maximum possible under that planet's geologic and life sustaining conditions.

Text Window:

Atmosphere: Lists the main components of a planet's atmosphere, in decreasing order (i.e., first listed is the primary component, etc.).

Hydrosphere: Major components of a planet's liquid surface area.

Lithosphere: Major minerals to be found on a planet's land surface area.

During an Alien Encounter

Auxiliary View Screen:

Mass: Mass of alien ship (in tons).

Bio: Displays percentage of undamaged Lifeforms on board the alien vessel. If 50 per cent of the Lifeforms are dead, the display will read 50.

Energy: Undamaged percentage of alien ship.

Text Window:

Object Constituents: Displays the composition of the alien vessel.

Analysis — Use this option to have the Science Officer present his analysis of sensor data he has gathered. Note that the Science Officer needs to take the corresponding sensor reading before you can exercise this option. Analysis data is given below classified by location.

In Orbit

Text Window:

Orbit Number: Each star has eight possible orbit positions, ranging from Orbit Position # 1 (the closest to the star) to Orbit Position #8 (the furthest from the star). The Orbit Number refers to the orbit position (or slot) occupied by the planet you are orbiting. Not all positions are occupied, so it is possible that a planet may appear to be the third planet from the star, when in fact it is occupying Orbit Position # 5.

Predominant Surface: The planet's primary surface constituent.

Gravity: Shows the planet's gravitational force. A gravity of more than

8.0 g's will crush your hull if you attempt to land on the planet.

Atmosphere: Shows the primary constituents of the planet's atmosphere.

Temperature: Shows the planet's possible temperature range.

Global Weather: Shows the predominant global weather conditions.

During an Alien Encounter

Text Window:

Object: States the general nature of the object. (e.g., SHIP)

Type: States the general type of object. (e.g., SCOUT)

Size: Gives the size of the object (in relation to the size of your ship).

Shields: Gives the alien vessel's shield status (e.g., Equivalent of Class 3, raised).

Weapons Status: Shows whether the alien vessel's weapons are armed.

Status — This option presents the ship's General Status on the Auxiliary View Screen. The following information is provided on the Auxiliary View Screen:

Date: Day.Hour-Month-Year.

Damage: Amount of damage sustained by your ship.

Cargo: Percentage of cargo hold full.

Energy: Displays amount of Endurium remaining, in cubic meters

Shields: States whether shields are up or down.

Weapons: States whether weapons are armed or unarmed.

Bridge — Return to Control Panel.

3.2.3 Navigator

The Navigator is responsible for maneuvering the ship through space, for raising and lowering the ship's shields, and for arming or disarming the ship whenever necessary. In addition, the Navigator is responsible for firing your ship's weapons during combat. When you choose Navigator from the Control Panel, the following options become available:

Maneuver — This option engages the navigational controls. Once engaged, you can maneuver your ship by using the appropriate keys. See your Reference Card for details.

Raise Shield/Drop Shield — This option reads **Raise Shield** when the shields are down and **Drop Shield** when they are up. Shields use energy while they are up.

Arm/Disarm — This option reads **Arm** when weapons are disarmed and **Disarm** when they are armed. Weapons must be armed before firing.

Combat — This option allows the Navigator to fire the ship's weapons, once they have been armed (see above). Once **Combat** has been engaged, you can aim by swiveling the nose of the ship. Your ship also has a limited **Maneuver** capability while in the **Combat** option. Fire your weapons by pressing the space bar. If your ship has more than one kind of weapon, the on-board combat computer will fire the most appropriate one, depending on the range of the target. To exit the combat option, press the Return key.

Bridge — Return to Control Panel.

3.2.4 Engineer

The Engineer is responsible for surveying any damage to the ship and for repairing it. Highly skilled engineers are capable of repairing more than their lesser counterparts. When you select Engineer from the Control Panel, the following options become available:

Damage — This option displays the Engineer's damage report on the Auxiliary View Screen. Graphs indicate percent of damage for each section of the ship. Note that percent of damage is also equal to the percentage probability that the damaged section will fail altogether. Thus if a section of the ship has sustained 50% damage, there is a 50% probability of total malfunction of that section.

Repair — This option allows the Engineer to repair damaged sections.

Bridge — Return to Control Panel.

3.2.5 Communications Officer

The Communications Officer is responsible for all communications with Interstel as well as with alien life forms encountered in space. The higher a Communications Officer's skill, the more efficient the communications. See Section 4.2 below for more information on alien space encounters. When you select Communications Officer, you are presented with the following options:

Hail/Respond — This reads **Hail** unless you have already been hailed by another vessel, in which case it would read **Respond**. All communications activity is carried out through this option. When you **Hail/Respond** you can adopt one of the following postures:

Friendly, Hostile, Obsequious

Your message will be transmitted in accordance with the chosen posture. Becoming friendly with aliens can give you access to new information. When you **Respond** (as appropriate), you can choose from:

Statement: If you wish to make a statement of some kind. Note that statements are more likely to affect the aliens' attitudes than are questions.

Question: If you wish to ask a question. You can choose from the following possible areas of inquiry:

Themselves, Other Races, Old Empire, Ancients, General Information.

Posture: To change your posture. You do not need to select this if you wish to maintain the same posture.

Terminate: To terminate communications.

Distress — Launches a superphotonic homing drone to Starport. This results in your ship and crew being put in stasis and towed home by another Starport vessel. There is a stiff fee for this service, which will vary depending on the distance you are towed.

Bridge — Return to Control Panel

3.2.6 Doctor

The ship's doctor is responsible for examining and treating injured crewmembers. The higher the doctor's skill level, the faster the cure. Selecting Doctor from the Control Panel provides you with the following options:

Examine — This option allows the Doctor to study a readout of the physical condition of any of the crewmembers.

Treat — This option allows the Doctor to treat injured crewmembers. Even though natural healing will occur on board ship, selecting Treat will speed up the process.

Bridge — Return to Control Panel

Part 4: Space

4.1 General Information

All navigation and maneuvering in space is effected with the help of the Main View Screen displays generated by the on-board computer. The computer provides spatial information at four different levels, as follows:

4.1.1 Hyperspace: This is where interstellar travel occurs. When you are in Hyperspace you can see stars (see Starmap), continuum fluxes, and nebulae. Note that the size of a star in hyperspace varies with its spectral class (see Appendix A below).

4.1.2 Star Approach: Approaching a star lets you enter its solar system. To return to Hyperspace, simply maneuver past the edge of a system. A planet's color or pattern indicates its primary surface type. (See Appendix A below).

4.1.3 Planet Approach: Approaching a planet lets you establish an orbit around it. To enter into orbit around a planet, press any key when you are over the planet's center. To leave a planet's orbit, use the Navigator's Maneuver option. (The same applies to exit Starport).

4.1.4 Tactical Level: The Tactical level is automatically obtained whenever an encounter occurs with an alien vessel. You can enter the Tactical level from Hyperspace, from the solar system, or from orbit. To leave an encounter you must continue traveling until the alien craft is no longer visible on the screen.

4.2 Alien Encounters

You can encounter alien vessels at any time. If you need to quit an encounter, enter your Navigator's Maneuver mode and move away from the alien ship until it is no longer visible on your view screen. Note that during an encounter, the alien ship can scan your ship and analyze your strengths and weaknesses, just as you can theirs. In particular, they can detect if your shields are up and whether or not your weapons are armed. These may be interpreted as hostile gestures.

4.2.1 Communications

Communicating with aliens can be an enlightening experience. The main points on alien communication have already been covered in Section 3.2.3 above, here are some additional hints to make your communications more effective. First, you can pause communications for up to two minutes by pressing the + key. This will give you a little time to gather your thoughts without the realtime clock ticking. Second, not all races respond optimally to the **Friendly** posture. Experiment with different postures until you discover the most effective approach for each race. Make notes of any information you receive during each encounter, including information on the success or failure of a particular posture, as well as general information that can help you complete your mission. Once you develop friendly relations with a race, they will be willing to give you more information.

Finally, note that not every member of a given race will have the same knowledge and information as any other member of that race. Feel free to ask others the same question.

4.2.2 Combat

The greater the number of combat incidences with any race, the less likely it is that you will ever be able to establish friendly communications with that race. It sometimes pays to be friendly, or even obsequious, if that doesn't offend your sense of dignity. Note that some alien vessels are impervious to certain kinds of weapons, so even a direct hit may amount to nothing against a vessel immune to that kind of weapon. Experience will guide you on the correct choice of weapon under the circumstances. And while you may be able to evade missile attacks, you cannot evade laser fire. Note that it is not always desirable to completely destroy alien vessels during combat. If you cease combat and enter communications, the aliens may surrender and tell you anything you want to know.

When the smoke settles from a hostile encounter (and if you emerge victorious) you can pick up any item of debris from the destroyed alien spacecraft. Have your Navigator Maneuver over to the craft, and then exit Maneuver. Enter the Captain mode, and select the Cargo option. Pick up any valuable debris.

For more detailed information, refer to the Combat option of the Navigator mode (Section 3.2.3, above).

Part 5: Planetside

5.1 Planetfall

As Captain, you can give orders to make planetfall via the **Land** Option. When you select **Land**, you are presented with the options **Site Select** and **Descend**, as well as a Mercator Projection of the surface of the planet. **Site Select** allows you to choose your landing site, while **Descend** engages the auto-approach sequence. See the Spectral and Planet Surface Charts in Appendix A for selecting favorable planets and suitable landing sites.

5.2 Planetside

Once on the surface of the planet you have a number of options available. These are listed at the bottom of the screen: **Maps**, **Move**, **Cargo**, **Look**, **Scan**, **Weapons**, and **Icons**.

5.2.1 Maps: Your Terrain Vehicle is equipped with numerous sensors as well as an on-board computer. This computer is capable of generating contour maps of the terrain at three levels of magnification. You can toggle between these three levels by pressing any key. The colors (or patterns) on these maps represent different altitudes and surface types. The key for these can be seen whenever the contour map is up. It is a good idea to check Maps after the message Scanning New Terrain appears on the screen. Use right arrow key to leave this option.

5.2.2 Move This option returns control of the Terrain Vehicle's movement. Move your terrain vehicle by using the arrow keys. Because of continual need for life support and the limited capacity of your environment suits, extended travel on foot is not possible. Your terrain vehicle has a small reserve fuel supply sufficient to take you from 5 to 25 "steps" depending on terrain. Fuel efficiency is a function of altitude — the higher the altitude, less the efficiency. To re-enter the ship move the terrain vehicle over it and press any non-arrow key.

5.2.3 Cargo This presents you with a list of all the cargo you are carrying and gives you the option of dropping anything. When an object is dropped on a planet's surface it can be picked up again. Cargo also allows you to pick up any item (including Lifeforms) next to your terrain vehicle, record messages found in Ruins, and make holographic recordings of Lifeforms. You must be directly beside an object to put it into **Cargo**. Note that any messages you find are identified by the date found. The cargo hold has a capacity of 50 cubic meters.

5.2.4 Look This option places a moveable cursor on the tactical map, allowing you to examine any part of the terrain. Move the cursor with the arrow keys and press a key.

5.2.5 Scan This option places a moveable cursor on the tactical map, allowing you to scan the terrain using your sensors. The results of your scanning are made available in a readout. Only lifeforms can be scanned. Note that lifeforms are not distributed evenly over the planet's surface, but tend to clump in the lower elevations near the equator or other temperate areas. The configuration of lifeforms on a planet is consistent with that planet's gravity.

5.2.6 Weapons Your Terrain Vehicle is equipped with a laser and a stunner. You can choose which one to fire through the Weapons option. Bracket the target by using the arrow keys, and fire by pressing any other key.

5.2.7 Icons This option presents a key of all the icons used by the Terrain Vehicle computer in the Tactical display, and a topographical key for the planet. It also lists the mineral, and the ancient and recent ruins icons.

5.3 Planetary Conditions

Recommending a planet for colonization requires assessment of a number of variables. Remember that if you recommend a planet as habitable and it turns out to be otherwise, you can incur heavy penalties. The following is a set of guidelines to help you make the right recommendations.

5.3.1 Temperature Some portion of the planet must fall within an acceptable temperature range. The following table shows the range of temperatures:

SUB- ARCTIC, ARCTIC, TEMPERATE, TROPICAL, SEARING, INFERNO

Parts of a planet must fall within the highlighted range to be suitable for colonization.

5.3.2 Gravity The gravity of a planet must not be "crushing," and it is preferable if it is lighter than "very heavy." Gravity must be below 2.0 g's for a planet to be suitable for colonization --- 7 to 1.3 is optimal.

5.3.3 Atmosphere The planet must have an atmosphere and the atmosphere must contain Oxygen.

5.3.4 Water There must be at least a minimal amount of free water.

5.3.5 Atmospheric Activity Planets with violent or very violent atmospheric activity are unacceptable. The following chart can serve as a guide

NONE, CALM, MODERATE, VIOLENT, VERY VIOLENT

Weather conditions must be within the highlighted area to make a planet suitable for colonization.

5.3.6 Bio-density Planets with a higher bio-density are more preferable but this is not a necessity.

5.3.7 Minerals Planets with abundant mineral deposits are also preferable, although this, too, is not a necessity.

*Note that a planet may be suitable in a number of ways but have just one feature that makes it untenable as a colony world.

Appendix A: Planetary Charts

1. SPECTRAL CHART

COLOR	CLASS
Red	M (coolest)
Orange	K
Yellow	G
White	F
Green	A
Light blue	B
Dark Blue	O (hottest)

2. PLANET SURFACE CHART

COLOR	TYPE
Red	Molten
Brown	Rock
Blue	Ocean
White	Frozen
Violet	Gas Giant

3. MINERAL VALUE CHART

Lead	40
Iron	60
Cobalt*	80
Nickel	100
Copper	120
Zinc	140
Molybdenum*	160
Tin	180
Magnesium	200
Aluminum*	220
Titanium*	240
Chromium	260
Antimony	280
Promethium*	300
Mercury	320
Tungsten	340
Silver	360
Gold	380
Platinum	400
Plutonium	420
Rodnium	440
Endurium	1000

* Repair Minerals

4. LIFEFORM VALUE CRITERIA CHART

Use the following five criteria for judging the value of a lifeform:

New Species:	It must be a species not previously captured or recorded.
Intelligence:	The more intelligent it is, the more valuable.
Niche:	The higher its position on the food chain, the more valuable it is.
Size:	The bigger it is, the more valuable.
Distance:	The farther away from Arth, the greater the lifeform's value.

Note that you cannot capture flying or floating lifeforms.

Appendix B: Energy Usage Chart

Hyperspace travel	.48 to .16 cubic meters / coordinate travelled (based on engine class)
Firing laser	.01 cubic meters
Firing missile	.05 cubic meters
Shields raised	.1 cubic meter / star hour
Launching or landing	.25 / cubic meter per G of the planet

STARFLIGHT

Getting Started

NEVER try to play *Starflight* using the master disks. Boot your computer with a PC-DOS disk and make copies of both *Starflight* disks. (See your PC-DOS User's Manual for copy instructions.) After you have copied both disks, put the master disks away. Do not write protect your play disks or the computer won't be able to record game information as you play. Whenever you want to start a new game of *Starflight*, follow this same procedure — copying the master disks is the *only* way to start a new game.

To start, insert the copy of the A Disk in drive A:, and the copy of the B Disk in drive B: if you have a second disk drive. The first thing you should do is read the file called **README.TXT** on the A Disk. Make sure that the computer is logged onto drive A: (you'll see the A> prompt), and type **TYPE README.TXT** (Enter). Press Control-S to stop and restart the scrolling text. To start the game, type **STARFLT** (Enter).

NOTE: If you are using only one disk drive, *Starflight* will prompt you when you need to swap disks. You will perform the most disk swaps during the booting process, but after the game is in progress the disk swaps will be minimal.

Game Configuration

When starting a new game, you are first presented with the Display Configuration menu. Use this menu to specify the type of graphic card and display your computer is equipped with. The four choices are:

1. **Black/White** — for black and white display
2. **RGB** — for RGB color display
3. **Color TV or Composite** — for composite color display
4. **Hercules™** (monochrome) — for Hercules monochrome graphics cards

Press the number of the option you want to use, then Enter. In a few moments the *Starflight* title screens appear. Press Enter to continue.

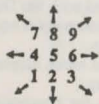
Compaq™ users with an external composite monitor should type **Control-Alt-<** (press the Control, Alt, and < keys simultaneously) at the DOS prompt before starting *Starflight* to activate composite display output.

NOTE: *Starflight* looks best if you use a composite color monitor. Check your display adapter reference manual to see if it provides composite output. Using the Hercules option produces an image that is smaller than your display screen. Colors will vary depending upon your computer, graphics adapter, and monitor. You may need to adjust your monitor in order to match the colors you see with those described in the manual. If you own a VCR, you can use it to turn your color TV into a composite monitor. Simply plug the composite video out signal from your adapter board into the video in of your VCR. Switch your VCR to "camera" mode so that it will recognize the video signal, and you have a color monitor.

Playing *Starflight*

Your starting point in the game is the Interstel starport docking bay. To find out what your first actions as an Interstel starship captain should be, read the Captain's Briefing Letter and the Interstel Technical Reference Manual. Never remove the game disks from the computer, turn off the power, or use memory resident programs such as *Get Organized!*™ or *Sidekick*™ during game play — doing so may permanently damage the game in progress.

Starflight does not support joystick control. Use the cursor keys to move characters, vehicles, and make selections. Use the Enter key to open doors and confirm selections. The numeric keypad also functions as a cursor diamond — the keys shown below each designate a direction.



Additional key commands are described below.

Ctrl-S — Toggles game sound on and off.

Esc — Activates the Game Options Menu. There is a short pause from the time you press Esc until the menu appears. The Game Options Menu is available at all times except when executing a cargo command or a maps command planetside.

Insert — Activates computer controlled "cruise control" while travelling in interstellar space, within a system, or on a planet's surface. To activate cruise control, hold down a cursor key and press the Insert key at the same time. Activating cruise control lets your starship or terrain vehicle travel unattended in its current direction. Press any cursor key to deactivate cruise control.

Spacebar — Equivalent to the Enter key everywhere except during combat. The Spacebar fires your weapons during combat, while the Enter key ends combat mode.

+ — Pauses and restarts incoming messages. The text window border lights up when incoming messages are paused. Continue the message by pressing the + key again.

While operating planetside or in the trade depot in starport, you will need to select cargo to pick up, sell, or buy. First select the option you want from the option bar along the bottom of the screen (i.e., Cargo, Sell, Buy) then press Enter. (If you are planetside, your terrain vehicle must be next to or on top of the item you want to add to your cargo.) This brings a list of the available items and amounts categorized by location, item type, and item name; e.g., Planet Surface, Elements, Endurium, Chromium, Promethium, etc. Move the cursor down to highlight the name of the item you want to add and press Enter. Now another choice appears asking what to do with the selected item. If you are planetside, the option will be Pickup for elements and artifacts, or Capture and Record for lifeforms. Select the action you want to take and press Enter. If you are buying or selling elements in the trade depot, you must specify how much of your cargo to transfer in the transaction. Enter the number of cubic meters using the numeric keys at the top of the keyboard and press Enter to confirm.

Starflight may be slow to respond to your key press at times (particularly when orbiting a planet or travelling on a planet's surface). This is normal and is caused by the large number of graphic calculations the game must perform. Your key press is stored in a buffer and will be executed when *Starflight* is finished with its calculations (usually after 1 or 2 seconds).

Security Access Code Wheel

To make sure ships leaving Starport are operated by authorized Interstel personnel, you must enter a security access code when requested by Interstel Security at launch. Failure to do so is in direct violation of Interstel penal code 0116-59.

Interstel Security's request for an access code consists of three variables: a location, an artifact, and a race. All three variables appear on the Access Code Wheel — the locations are on the outer wheel, the artifacts are on the outer part of the inner wheel, and the races are on the inner part of the inner wheel. To find the correct access code, align the given location on the outer wheel with the given artifact on the inner wheel. Now

without changing the alignment, find the given race (the third variable) on the inner wheel. The correct access code will be visible in the window above the race name. Type the access code and press the Enter key to confirm your entry.

For example, suppose Interstel's request is Akteron, Black Box, Uhlek. To find the correct access code, align Akteron with Black Box, and then look in the window above Uhlek on the inner wheel for the access code — 22917.

Pausing and Saving Games

Any time a menu is active you can pause and save your game by pressing Escape to bring up the Game Options Menu. The Game Options Menu gives you four options that can be selected by pressing the corresponding number keys.

1. **Save Game** — saves your current position in the game and exits. Everything will be exactly as you left it the next time you play.
2. **Resume Game** — returns to the game without saving. Can be used to pause the game for short periods of time.
3. **Change Display Options** — brings up the configuration menu so you can reselect your display options.
9. **End Game** — permanently ends a game. The only way to start a new game after using this option is to recopy the master disks onto your play disks. Use with caution.

Starflight runs in real time. That means that if you leave your ship parked in deep space while you go take a break, you may return to find your ship surrounded by alien ships — some of which may not be friendly. If you are planning to leave the game for an extended amount of time, press Escape to bring up the Game Options Menu — this stops the passage of time in the game. Choose "2. Resume Game" to continue playing.

To save games from the Game Options Menu, press the 1 key to select the first option and save the current game. After the game has been saved on the play disks, press any key to exit the game. At this point it's a good idea to make a backup of your play disks. This way, if your ship is destroyed the next time you play, you'll have a backup so you won't have to start over from scratch. This means that you will normally have three sets of disks (six disks); two unplayed master game disks, two play disks containing your game in progress, and two "checkpoint" disks containing a backup of your game in progress. It's especially important to use this system when you have a lot of time and effort invested in your game.

Playing From a Hard Disk

Starflight will operate normally from a hard disk. Create a **STARFLT** directory, and two empty subdirectories within it. Call one subdirectory **PLAY** and the other **SAVE**. To create the directory and subdirectories, use the commands:

```
MKDIR C:\STARFLT
MKDIR C:\STARFLT\PLAY
MKDIR C:\STARFLT\SAVE
```

Next, make sure you are logged onto your hard disk (you'll see the **C>** prompt), and copy all the files from the *Starflight* master disks in drives A: and B: into the **PLAY** directory on your hard disk. The commands are:

```
COPY A:*. * C:\STARFLT\PLAY
COPY B:*. * C:\STARFLT\PLAY
```

If you are using only one disk drive, you will need swap disks in drive A: and use the first command twice.

When you are ready to play, type **CD \STARFLT\PLAY** to change to the play directory, then type **STARFLT** to start the program. (See "Getting Started" and "Game Configuration" above.) You should always play the game from within the **PLAY** subdirectory. The **SAVE** subdirectory should be used only for backing up games in progress so that if your ship and crew meet a terrible fate, you won't have to restart from scratch.

When you are ready to stop playing, press Esc then save and exit through the Game Options Menu (see "Saving Games" above), and the system will return to DOS. Once in DOS, make sure you are in the **PLAY** subdirectory and backup your game to the **SAVE** directory by typing, **COPY *.COM \STARFLT\SAVE**. To resume a saved game, make sure you are in the **PLAY** subdirectory and start the game as described above.

If your ship and crew are destroyed, you can restore your game from the copy saved in the **SAVE** subdirectory. Make sure you are in the **PLAY** subdirectory and type, **COPY \STARFLT\SAVE*.COM**. The saved game files are then copied into the **PLAY** directory, replacing any files of the same name that are already there. You can then resume your game at the point where you last backed up the game in the **SAVE** subdirectory.

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