THE COSMIC BALANCE

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THE COSMIC BALANCE

The fighting spacecraft of the 24th Century were some of the most beautiful and deadly machines ever built. Their designers sought the optimum balance of speed, maneuverability, defenses, and offensive weaponry, always trying to create the perfect ship.

Unfortunately, many a confident starship commander found his "perfect" ship reduced to a helpless hulk by a superior ship in the hands of a skilled commander. He had learned the first rule of the Cosmic Balance: for every ship, there is an equal and opposite countership.

1.0 INTRODUCTION

COSMIC BALANCE is a simulation of tactical combat in deep space. You design your ships, give them their orders, and then see how they perform in combat against enemy ships.

There is very little chance involved. The outcome will depend almost entirely upon your judgement as a designer and your skill as a commander.

The game is played in three phases:

THE SETUP PHASE

You choose one of six different tactical scenarios, and then design up to four different ships on each side to fight them.

THE ORDERS PHASE

Your map will show you the positions of your ships and the enemy ships. You give each ship its orders for a sixteen-second turn. Your ships may maneuver, change course, fire weapons, or try to beam a boarding party onto an enemy ship.

Your opponent will then give his orders for the same turn.

THE EXECUTION PHASE

You will now watch the ships battle each other, each following the instructions given them during the orders phase. The scenario will end when all of your ships or all of the enemy ships have been destroyed, when one or both players have run away, or when one player has achieved the victory conditions given for that scenario.

2.0 BEGINNING THE GAME

Insert your game disk into the disk drive of your computer and turn your computer on. The game will automatically begin. This display will appear on your screen:

THE COSMIC BALANCE

1. NEW GAME   SAVED GAME
2. TWO PLAYER   SOLITAIRE 1 2 3 4
                        Easiest: 1   Hardest: 4

SCENARIOS

3. DEEPSPACE ENCOUNTER
4. PLANETARY RAID
5. COMMERCE RAIDER
6. INVASION
7. DOGFIGHT
8. SURPRISE ATTACK

PRESS 1-8 TO CHANGE THE SETUP OR THE SPACE
BAR TO BEGIN.

NEW GAME OR SAVED GAME

If **NEW GAME** is highlighted, you will begin a fresh scenario. Later, you may wish to recall a game

you played earlier and saved. Press 1, and **SAVED GAME** will be highlighted. If you request a saved game, you will be asked the name you gave the game when you saved it.

SOLITAIRE OR TWO PLAYER?

If **TWO PLAYER** is highlighted, the computer will set up a game between you and a human opponent. If you wish to play the computer, press 2. **SOLITAIRE** will be highlighted.

SOLITAIRE LEVEL

If you decide to play solitaire, you may decide the level of sophistication, from 1 to 4, of your enemy's ships. A level One enemy will have a ship technologically equal to your ship; a level Four enemy will have a crew efficiency 3 better than the ship's design and 3 more power points per engine. To raise the level of difficulty, continue pressing 2 until the level you wish is highlighted.

3.0 VICTORY POINTS

Victory points are awarded to each ship according to how well it has survived combat during the scenarios. The victory points won by a ship depend upon its size and tech level, less the critical damage it has received.

VICTORY POINTS FOR UNDAMAGED SHIPS

The values of undamaged ships are shown on this table:

	Tech Level					
	1	**2**	**3**	**4**	**5**	**6**
Size 1 Corvette	4	5	6	7	8	9
Size 2 Frigate	12	14	17	21	25	29
Size 3 Destroyer	25	31	38	49	60	71
Size 4 Cruiser	58	72	86	105	125	150
Size 5 Dreadnought	105	130	155	180	210	250

For example, the largest, most advanced ship, a tech 6 Dreadnought, would score 250 victory points if it survived the scenario without damage.

VICTORY POINTS FOR DAMAGED SHIPS

Each time a ship suffers critical damage, a percentage of victory points equal to the percentage of critical hits is subtracted from the Victory Points. For example, suppose the Tech 6 dreadnought has suffered 8 critical hits; this is 50 percent of its critical hit allowance. The same percentage (50%) will be taken from the total number of Victory Points; so the 250 point ship will now be worth only 125 Victory Points.

VICTORY POINTS FOR CAPTURED SHIPS

If you capture an enemy ship, its victory points are added to yours.

The player with the most victory points at the end of the game is the winner.

3.1 THE SCENARIOS

SCENARIO ONE: DEEPSPACE ENCOUNTER

In one famous deepspace battle, the Starship **Enterprise** fought the Starship **Reliant**, just inside the remote boundary of the Alliance.

Player One commands the **Enterprise.**
Player Two commands the **Reliant.**

THE SHIPS

Both ships were roughly equal, tech level five size 4 cruisers, with range factors of two.

ORDERS TO THE ENTERPRISE COMMANDER

Destroy or Capture the **Reliant.**

ORDERS TO THE RELIANT COMMANDER

Destroy or capture the **Enterprise.**

ESCAPE CONDITIONS

The **Reliant** Commander needs two range factors, that is, two working warp drives, to escape. **Enterprise** needs one drive.

VICTORY CONDITIONS

Each ship begins the scenario with 125 victory points. Whichever ship has the most points at the end is the victor.

Since the battle is fought in Alliance Space, the **Reliant** will need its extra range factors to escape. If the **Reliant's** Warp Drives are destroyed, it cannot escape the Scenario — it must fight until the end.

TIME LIMIT

No Time Limit.

SCENARIO TWO: PLANETARY RAID

An Alliance Dreadnought was ordered to attack the planet Dirgos, which had been turned into a fueling base for Brotherhood raiders.

Player One commands the Alliance Dreadnought.

Player Two commands the defenders of Dirgos.

THE SHIPS

The Alliance Dreadnought must have a range of at least two to accomplish its mission. The Brotherhood Defense Squadron consists of three Size 3 Destroyers. They need no extra range factors.

THE PLANET DIRGOS

Call from the game disk (the planets are saved on the game disk) "Planet 1, 2, 3, 4, 5, or 6," depending upon the tech level of the defending ships. (Don't put a space between Planet and the tech level.) On the screen the Planet Dirgos will appear as a dreadnought. It will not move or fire weapons, but the base is heavily armored against enemy weapons.

ORDERS TO THE ALLIANCE COMMANDER

Penetrate the defending squadron and reduce the enemy base.

ORDERS TO THE BROTHERHOOD COMMANDER

Repel any attack on Dirgos.

ESCAPE CONDITIONS

The Alliance ship needs two range factors or two working warp drives, to escape. Brotherhood ships cannot escape.

VICTORY CONDITIONS

The victory point value of the Alliance attacker depends upon its tech level. The Brotherhood destroyers are worth only ¼ of their normal victory point value, since their mission is to defend the planet. The Planet Dirgos is worth as many victory points as a Size Five Dreadnought. At the end of the scenario, the player with the most victory points is the winner.

TIME LIMIT

Ten turns.

SCENARIO THREE: COMMERCE RAIDER

An Alliance Cruiser was ordered to intercept a Brotherhood Transport Dreadnought deep in Brotherhood Space, before it reached its home port with a precious cargo of fuel crystals.

THE SHIPS

The Alliance commerce raider is a Size Four Cruiser, with a range of at least two. The Brotherhood Transport Dreadnought needs a range of only one, but must have seven cargo holds.

ORDERS TO THE ALLIANCE COMMANDER

Wreck or capture the transport before it can escape, or destroy its cargo.

ORDERS TO THE BROTHERHOOD COMMANDER

Bring your cargo safely to your home port.

ESCAPE CONDITIONS

The Alliance ship needs two range factors, that is, two working warp drives, to escape. The Brotherhood transport needs one.

VICTORY CONDITIONS

The Alliance ship's victory point value is the usual value for a cruiser, depending upon its tech level.

The Brotherhood Transport's value is calculated this way:

The normal victory point value of a Size Five dreadnought, modified by its tech level, and divided by four:

plus:

The normal victory point value divided by sixteen, times the number of cargo holds remaining intact.

TIME LIMIT

Ten turns.

SCENARIO FOUR: INVASION

An Alliance Fleet was ordered to establish a forward base in the Pegasus Constellation, deep within Brotherhood Space.

Player One is the Invasion Fleet Commander.

Player Two commands the Brotherhood Defense Force.

THE SHIPS

The Alliance Invasion Force consists of:

— one Size Five Dreadnought, with a range of at least two

— three Size Four Cruisers, with a range of at least two

The ships must carry at least three battalions of troops. Each battalion occupies a tech sector; nine cubic sectors, plus a number of sectors equal to the tech level of the ship. The troops may be placed aboard one ship, or placed on more than one ship.

The Brotherhood Defense Force consists of:

— one Size five Dreadnought, with a range at least one

— three Size Three Destroyers, without range.

ORDERS TO THE ALLIANCE COMMANDER

Carry at least three battalions of troops past the Brotherhood Defenders.

ORDERS TO THE BROTHERHOOD COMMANDER

Destroy the Invading force, or kill enough to make any invasion impractical.

ESCAPE CONDITIONS

The Alliance invading ships need two range factors, or two drives, to escape. The Brotherhood Dreadnought needs one. The Brotherhood destroyers cannot escape.

VICTORY CONDITIONS

Victory points will be awarded for:

1. All surviving ships, in the usual manner.
2. Control of the Pegasus Constellation. If the Alliance fleet still has three battalions of troops intact on the battle space at the end of the scenario, its invasion can succeed. The Alliance will be awarded extra victory points equal to 5/4ths of the value of a dreadnought. If less than three battalions of troops have survived, the Brotherhood player will be awarded these extra points.

TIME LIMIT

No time limit.

SCENARIO FIVE: DOGFIGHT

Alliance and Brotherhood Squadrons patrolling in deep space sometimes ran head-on into each other, resulting in dogfights.

Player One is an Alliance Squadron Leader.

Player Two is a Brotherhood Force Commander.

THE SHIPS

Each commander can assemble his own squadron of up to four ships.

ORDERS TO THE ALLIANCE COMMANDER

Don't fight unless you have to, but if you have to, make sure you win.

ORDERS TO THE BROTHERHOOD COMMANDER

Shoot first and then ask questions.

ESCAPE CONDITIONS

Any ship needs a range of at least one to escape.

VICTORY CONDITIONS

Whichever squadron has the most victory points at the end of the scenario is the winner.

TIME LIMIT

No time limit.

SCENARIO SIX (can only be played solitaire)

Sometimes Alliance patrolling squadrons were attacked without warning by unknown ships, commanded by Robots.

Player One commands the Alliance squadron.

The Computer plays the robot attackers.

THE SHIPS

The Alliance commander may have up to four ships of any kind.

The attacker will have from one to four tech 6 dreadnoughts. You can choose how many ships he will have.

ORDERS TO THE ALLIANCE COMMANDER

If fired upon, fire back.

ORDERS TO THE ROBOT ATTACKERS

Delete anything you don't recognize.

ESCAPE CONDITIONS

The Alliance ships need a range of at least 1 to escape.

VICTORY CONDITIONS

Whichever side has the most victory points at the end of scenario wins.

TIME LIMIT

No time limit.

SELECTING A RANDOM ENEMY FLEET

If you are playing solitaire, and you want to make the scenarios more realistic by fighting against ships whose weapons and defenses you haven't just designed, we suggest the following:

Design six (or twelve) different types of enemy ships.

— Number and save these designs.

— When its time to set up the enemy fleet, use a non-digital random integer generator (otherwise known as a die) to choose the enemy ships. If you have a second computer, you can also use it to generate a random number, but a die is cheaper, and you don't have to learn BASIC.

4.0 THE SETUP PHASE

You are now ready to design your first ship. Press the Space Bar. The computer will tell you:

PLAYER ONE, IT IS YOUR SETUP.

Press any key to continue. (In the Deepspace Encounter scenario the setup phase is omitted.)

4.1 WHAT IS THE TECHNOLOGICAL LEVEL?

The technological level of your ship tells you whether your technology is older or belongs to the newest generation. The earliest weapons have a tech level of one; the most advanced possible weapons have a tech level of six.

Type the number you wish and press **RETURN.**

The computer will now ask:

4.2 WHAT SIZE?

You may choose one of five sizes:

Size One: Corvette
Size Two: Frigate
Size Three: Destroyer
Size Four: Cruiser
Size Five: Dreadnought

Type the size you wish, and press **RETURN.**

The computer will now ask:

4.3 DO YOU WANT TO USE A SAVED SHIP?

You may want to use a ship you designed for an earlier scenario, or build an entirely new ship. If you use a saved ship, you must use a ship of the same tech level you indicated earlier.

4.4 THE DESIGN DISPLAY

At the top of your screen you now see the performance and space capabilities of your ships, and the design categories.

SPACE LEFT: 220	MAX SPEED: 0	POWER: 0	
EFFICIENCY: 0	MAX ACCEL: 0	MASS: 16	
1. RANGE: 0	CARGO: 0	FTBAY: 0	HULL: 20
2. RACKS: 0	SPACE: 0	LTSKR: 0	HSKR: 0
3. ENGIN: 0	DRIVE: 0	TRANS: 8	TRAC: 0
4. ARMOR: 0	MARIN: 0	BELTS: 0	

4.5 SPACE LEFT

The **SPACE LEFT** is the amount of space available inside the ship you have chosen to design. You must design your ship within the limitations of this space. As you design your ship, the space left number will decrease with the creation of various systems.

The **SPACE LEFT** was decided by the size and tech level of the ship you chose, determined by the formula Space = (9 + Tech Level) times 2 to the (Size minus one) power.

In the sample display above, a tech six dreadnought has 240 available cubic sectors. Twenty are automatically allotted to the hull.

TECH SECTORS

Some systems have their space measured in Technological Sectors, or Tech Sectors. One Tech Sector equals nine cubic sectors plus a number of additional sectors equalling the tech level of the ship.

4.6 SPEED

The **MAX SPEED**, or maximum speed (measured in lightmils per turn), will be decided by the number of drives you install and the size of your ship. The number after maxspeed is an estimate of your maximum speed.

4.7 POWER

The **POWER** of your ship, which you will need to operate your ship's equipment, will be decided by the number of engines that you build.

4.8 EFFICIENCY

The **EFFICIENCY** of your crew and marines will be determined by the amount of space you allow in the Hull for their living quarters and workspace. A crew with a higher efficiency level will be able to aim its weapons better. Marines and crewmen with a high efficiency level will have a much better chance of repelling enemy boarding parties.

4.9 MAXIMUM ACCELERATION

The **MAX ACCEL**, or Maximum Acceleration of your ship, will depend upon the number of drives that you have built, and the size of the ship.

4.10 MASS

The **MASS** of your ship depends upon its size. (It equals two to the (Size minus one) power.) It decides how much critical damage your ship can survive.

You are now ready to set the design specifications of your ship.

4.11 SETTING DESIGN SPECIFICATIONS

The computer will tell you:

PRESS 1, 2, 3, 4, W, OR S FOR CHOOSING THE CATEGORY TO ADJUST OR X TO EXIT.

By pressing the key associated with a character (a number is the appropriate row number, W is pressed to adjust weapons and S for shields), you will be able to adjust items in that category. For example, if you wish to adjust the **RANGE**, Press 1. The cursor will move to Line 1, to the first item on that line, **RANGE.**

The computer will instruct you:

PRESS ARROW TO CHOOSE ITEM, SPC TO ENTER ADJUST MODE, OR X TO EXIT.

If you wish to adjust the range of your ship, press the space bar. The computer will now say:

ENTER NEW VALUE AND PRESS RETURN.

Type a number and press **RETURN**. That number will now appear after range.

If you decide later to change that number, simply move the cursor back to that category, press the space bar, type a new number, and press **RETURN.**

MAXIMUM SIZE OF SYSTEMS

No single system can take up more than ninety-nine cubic sectors, except the hull and armor.

You are now ready to begin designing your ship.

4.12 RANGE

The range of your ship depends upon the number of warp drives that you build. It's main importance is in the Strategic Game; the only part it plays in the tactical scenarios is to affect the victory conditions, for a ship must have a range of one or more to escape from a battle.

SPACE REQUIRED:

One tech sector for each warp drive.

Press the right arrow key. The cursor will move to:

4.13 CARGO

Cargo holds are used to carry supplies, troops and complete prefabricated outposts and star bases. They do not play a part in the tactical scenarios, except in the victory conditions for certain scenarios.

SPACE REQUIRED:

·One tech sector per cargo hold.

For most tactical scenarios, leave this number at 0. Use the right arrow to move the cursor to:

4.14 FTBAY

You now may decide if you want to equip your ship with Fighters.

These lightweight, robot weapons close in on an enemy ship in a swarm, even at extreme range, and continue attacking until either the enemy ship, or every fighter, is destroyed. Each Fighter Bay holds a full squadron of thirty robot fighters.

Suppose you wish to equip your ship with one squadron of fighters. To build one fighter bay, press the space bar.

Press 1, and then **RETURN.**

One fighter bay should show on the design display.

SPACE REQUIRED:

Each fighter bay takes up two tech sectors. Each tech sector takes up nine cubic sectors plus a number of sectors equal to the tech level of the ship.

If your ship has a tech level six, for instance, your fighter bay will occupy thirty cubic sectors. The **SPACE AVAILABLE** on your ship will drop from 220 to 190.

When you have built the number of fighter bays you want, use the right arrow to move the cursor to:

4.15 HULL

The hull of your ship holds the living quarters and workspace for its crew. The minimum amount of hull space is automatically set by the computer, depending upon the size of the ship. Each five-man section of the crew needs at least one-half cubic sector.

TYPE OF SHIP	CREW SECTIONS	MINIMUM HULL SPACE
Corvette	2	1 cubic sector
Frigate	4	2 cubic sectors
Destroyer	10	5 cubic sectors
Cruiser	20	10 cubic sectors
Dreadnought	40	20 cubic sectors

To raise the **EFFICIENCY** of your crew from level one to level two, build one and a half times the minimum hull space.

For example, for a dreadnought, you must build at least 30 cubic sectors of hull space.

To raise the efficiency level of your ship to 3, build twice the minimum required hull space.

You must also allow one cubic sector for each detachment of marines you are carrying. If you have a minimum crew space of 20, and are carrying four detachments of marines, you must build 36 cubic sectors to raise the efficiency of your crew and marines to level two; or 48 cubic sectors to raise them to level three.

When you have entered your hull size, you have finished the specificaitions on line one. Press X to return to the design options, and then press 2 for line 2. The cursor will move to:

4.16 RACKS

Racks are launching platforms for guided Light Seekers and Heavy Seekers.

LIGHT SEEKERS are guided weapons that seek out the electromagetic noise of an enemy ship. They can recognize the individual signature of an enemy ship, even among friendly ships. They are especially effective against enemy shields.

HEAVY SEEKERS are slower-moving, more powerful versions of light seekers.

Each rack can hold four Light Seekers, two Heavy Seekers, or two Light Seekers and a Heavy Seeker.

SPACE REQUIRED: Each rack takes up two cubic sectors.

SPACE tells you how much space you have on your racks. Each Light Seeker takes up one rack space; each Heavy Seeker takes up two rack spaces.

4.17 LTSKR:

You may now select how many Light Seekers you wish to carry within the limits of your rack space. Press the space bar, enter a number, and press **RETURN.**

4.18 HVSKR:

You may now arm your ship with Heavy Seekers.
Press the space bar, select the number you wish, and press **RETURN.**

You should fill all your rack space with seekers before you move on to the next category; unused rack space is wasted.

Press **X** to return to the design options, and then 3 for line 3. The cursor will move to:

4.19 ENGINES

Engines generate the power you need to charge your weapons and your shields. Each engine you build will give you eight energy units. For example, if you build ten engines, the **POWER** category on your design display will read 80. This power will be available to you every turn unless your engines are damaged in battle.

SPACE REQUIRED

Two cubic sectors per engine.

Press the space bar, enter the number of engines you want, and press **RETURN.**

4.20 DRIVES

Drives are the matter-antimatter units that propel your ship through space. If your ship is a dreadnought, each drive you build will give you an extra factor of acceleration. Additional drives also will allow you to change course more quickly, and so make tighter turns.

SPACE REQUIRED: Four cubic sectors per drive.

Press the space bar, enter the number of drives you wish to build, and press **RETURN.** Now press the right arrow. The cursor will move to:

4.21 TRANS

Transporters are used to beam your marines onto friendly ships or to beam boarding parties onto enemy ships. Each transporter can beam two detachments of marines at a time.

SPACE REQUIRED: One cubic sector per transporter.

Enter the number of transporters you wish to build and press the right arrow. The cursor will move to:

4.22 TRAC

Tractor Beams are used to salvage friendly ships that have been disabled in battle. They are used to help mainly in disabled or short-range ships to escape a battle zone.

SPACE REQUIRED: Four cubic sectors per tractor.

Leave the number of tractors at zero, and press 4. The cursor will move to:

4.23 ARMOR

A plating of extremely hard alloys can deflect enemy weapons and protect your ship from damage. If an armored ship is hit, the damage it suffers is greatly reduced. Only Plasma Torpedoes can destroy armor, however a ship can be destroyed without first destroying the armor . . . it's just harder.

SPACE REQUIRED: One cubic sector per layer of armor.

Enter the amount of armor you wish on your ship and press the right arrow. The cursor will move to:

4.24 MARINES

Your marines are used to board enemy ships, and to defend your own ship against boarding parties. Like your crew, their effectiveness is raised by giving them extra hull space for their living quarters.

SPACE REQUIRED: One cubic sector per detachment of marines. Note that when you add your marine detachments, the efficiency of your crew may fall, unless you have allowed extra space in your **HULL.** If this happens, just increase your hull size.

Enter the number of marine detachments you want on your ship, and press the right arrow. The cursor will move to:

4.25 BELTS

Belts are your outer line of defense against approaching enemy weapons. They are small satellites, each with a single phaser. They have one chance in four of shooting down an approaching enemy fighter or damaging a plasma torpedo, lessening the damage it causes, and one chance in eight of downing a seeker.

SPACE REQUIRED: Each belt takes up one cubic sector.

Enter the number of belts you wish and press **RETURN.**

You have now completed your ship's architecture. You are ready to arm your ship and set up its shields.

4.26 WEAPONS

Press **W** for **WEAPONS.** The screen will display:

PRESS LETTER OF WEAPON TO ADJUST OR X TO EXIT

You may now install up to twelve weapons, lettered A to L, into the spaces shown on your Design Display.

Press A to install the first weapon.

The computer will now ask if you want to enter:

L (Light Phaser), **H** (Heavy Phaser), **S** (Siege Phaser), **D** (Disruptor), **T** (Plasma Torpedo), **P** (Photon Torpedo) **FOR WEAPON TYPE OR E TO ELIMINATE.**

LIGHT PHASER

A light phaser is a high-energy beam weapon that can literally melt through the outer skin of an enemy ship.

HEAVY PHASER

A heavy phaser has a wider, more destructive beam than a light phaser.

SIEGE PHASER

Siege phasers were developed to destroy the warning stars and fortress stars that guard the boundary line. Their beams can cause twice the damage of a light phaser.

PHOTON TORPEDOES

Photon Torpedoes are designed to break down an enemy's shields. By striking a shield with many frequencies of light at once, they cause it to overreact, draining its energy.

DISRUPTORS

Disruptors are the longest-range weapons in a ship's arsenal, capable of hitting a ship as many as one hundred lightmils away. However, they are less accurate, and they can be evaded by a fast-moving ship.

PLASMA TORPEDOES

Large and slow-moving, plasma torpedoes make up for their awkwardness with a huge warhead. A hit by a plasma torpedo at close range can cause as many as sixty factors of damage, demolishing even a large ship. The farther they travel to their target, however, the less their effect. Unlike phasers or photon torpedoes, plasma torpedoes do not have a limited arc of fire. They will automatically go in the direction of their target.

Enter **L. LIGHT PHASER** will appear after the letter **A.**

You must now select the location of your phaser.
Each phaser, disruptor or photon torpedo can cover a forty-five degree arc. The arcs are numbered clockwise from one to eight.
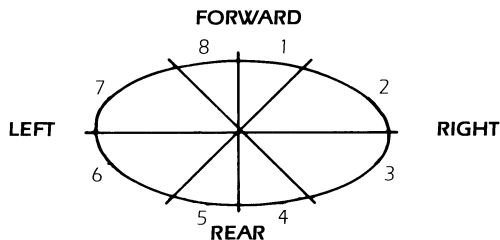
If you wish to have your light phaser fire forward, type the numbers 1 and 8. If you wish light phasers all around your ship, type 1 through 8. The covered arc numbers will be highlighted.

If you change your mind about an arc number, simply type that same number again. The highlighting will disappear.

When you are satisfied with your fire arcs, press **X.** Your light phaser is now installed.

You may now type **B** and install another light phaser or another kind of weapon. If you chose a Plasma torpedo, you do not need to choose arcs of fire; they will automatically go in the direction of the target.

You may continue entering weapons, up to a maximum of twelve. If you decide to substitute one weapon for another, or eliminate a weapon, enter the letter of that weapon and then enter **E.** The weapon will be eliminated, and you may install another.

MAXIMUM NUMBER OF WEAPONS PER ARC

There is a limit to the number of weapons you can place in any one arc depending upon the

size of your ship. A Size One Corvette might only have room for two phasers or a photon torpedo and a phaser in one arc. A dreadnought could have ten siege phasers or a mixture of different types of weapons up to the maximum of ten.

SHIP SIZE	MAXIMUM WEAPONS PER ARC
One	2
Two	4
Three	6
Four	8
Five	10

SPACE REQUIRED BY PHASERS, DISRUPTORS AND PHOTONS

LIGHT PHASERS

One-half cubic sector per phaser for the first arc of fire and three-sixteenths cubic sector for each additional arc. For example: A light phaser firing from arc one and eight will take up half a cubic sector for the first arc and three-sixteenths for the second, or a total of eleven-sixteenths. A light phaser which fires from all eight arcs takes up one and thirteen-sixteenths cubic sectors. (The remaining fraction will not appear on your **SPACE LEFT** display.)

HEAVY PHASERS

Twice the space of light phaser, or one cubic sector for the first arc and three-eighths cubic sector for each additional arc.

SIEGE PHASERS

Twice the space of a heavy phaser, or two cubic sectors for the first arc and three-fourths cubic sector for each additional arc.

DISRUPTORS

Same as a siege phaser.

PHOTON TORPEDOES

Same as a siege phaser or disruptor.

PLASMA TORPEDOES

Fifteen cubic sectors per torpedo.

When you have installed as many weapons as you wish, press **X** to return to the design options.

4.27 SETTING UP SHIELDS

You are now ready to set up your shields.

Shields are powerful fields of electromagnetic energy. As long as they are charged, they can deflect enemy transporter beams or weapons.

Shield arcs, like phaser arcs, cover 45 degrees of a ship's perimeter and are numbered clockwise the same way.

FORWARD

Press **S.** The computer will instruct you:

PRESS NUMBER OF SHIELD TO BE CHANGED OR X FOR EXIT

If you wish to set up a shield on arc one, press 1.

The number 1 on your shield design display will be highlighted.

The computer will now say:

ENTER NEW VALUE AND PRESS RETURN.

Type the value of the strength of the shield that you wish to protect that arc, and press **RETURN.** The maximum possible strength of any shield is 30.

SPACE REQUIRED

Each shield needs eight batteries to keep it at a strength of one. Each shield battery takes up one-sixty-fourth cubic sector. Thus, to maintain a shield strength of one in all eight sectors, you would

need a total of sixty-four batteries on your ship, taking up one cubic sector. Each additional strength would take up another cubic sector.

You may choose to build shields all the way around your ship, or to put especially powerful shields on the bow of your ship, or any other arc you expect may be facing the enemy.

Press the number of each shield and enter the strength you wish that shield to have. When you have finished setting up your shields, press **X** to return to the design options.

By now, your space available will probably be gone. If you have tried to build a system without having enough room left, the screen will tell you:

THERE IS NO SPACE FOR THAT
In that case, you may wish to change an earlier system to make room.

4.28 CHANGING SPECIFICATIONS
To reduce or increase the number of any system you have built, simply press the line number, **S,** or **W,** to move the cursor back to that number, press the space bar, enter a new number, and press **RETURN.** The **SPACE LEFT** will change to show the new number.

4.29 COMPLETING YOUR SHIP
Your ship should now be finished. Press **X** to exit.

The computer will ask: **ARE YOU REALLY FINISHED WITH THIS SHIP?**

Remember, once your ship has been designed and the scenario has begun, you cannot change your ship! If you are finished, press **Y** for Yes, and **RETURN.** Any cubic sectors you have not used will automatically be allotted to your shields, although they cannot exceed the maximum strength per shield of thirty. If your shields are at their maximum, extra space will be alloted to armor.

The computer will ask:

DO YOU WISH TO SAVE SHIP?

You may save your ship to use in the current or later scenarios. Press **Y** for Yes if you want to save this ship. Your computer will tell you:

INSERT YOUR SSI SAVE GAME DISK, THEN PRESS ANY KEY TO CONTINUE.

Take the game disk out of your disk drive, and insert your Save Game Disk. If you don't have one already, just insert any blank disk.

When you have inserted the disk and pressed any key, the computer will give you a new menu:

SSI SAVE ROUTINES
(I)NITIALIZE AN SSI SAVE GAME DISK
(S)AVE ITEM ON AN SSI SAVE GAME DISK
(C)ATALOG AN SSI SAVE GAME DISK.
(D)ELETE ITEM FROM AN SSI SAVE GAME DISK
(E)ND GAME
(R)ETURN TO GAME

(I)NITIALIZE

If you have never used this disk before as a Save Game Disk, use this command to format the disk for your game.

(S)AVE

If you wish to save the ship, press **S.**
The computer will ask:

WHAT IS THE NAME UNDER WHICH THE ITEM IS TO BE SAVED?

Give the ship a name of up to ten characters.

(C)ATALOG

If you press this command, you will see a list of all the saved ships and games on the disk.

(D)ELETE

You can delete any ship or game you have previously saved.

(E)ND
This command is used if the game is already in progress. The computer will count victory points and declare a winner, assuming both players ran away.

(R)ETURN

Use this command to leave the menu and go back to the game. The computer will instruct you to remove the save game disk from your disk drive, put the game disk back in, and press any key to continue.

When you have finished your last ship, the computer will say:

PLAYER 2 IT IS YOUR SETUP.

If you are playing a human opponent, he will now design his ship or ships in the same way that you did. If you are playing solitaire, and you are about to begin scenarios two through five, you will now design the opposing ships. If you are playing solitaire and about to begin scenario six, the computer will design the opposing ships.

The computer will ask:

USE SHIP CURRENTLY IN MEMORY?

If you wish to use the ship you have just designed in the scenario, press **Y** for Yes.

You are now ready to begin the scenario. It begins with the **ORDERS PHASE.**

5.0 THE ORDERS PHASE

You are now ready to begin the Orders Phase. The Computer will say:

IT IS PLAYER 1'S TURN. PLAYER 2 TURN AWAY.

If you are player 1, you will now decide what your ship should do during the first sixteen-second turn of the scenario.

**ORDERS FOR WHAT SHIP? (/ TO END TURN,
* TO RUN AWAY)**

Enter the initial letter of the name of the first ship to which you wish to give orders.

5.1 THE STATUS DISPLAY

The Status Display of the Ship you have named will now appear on the screen. It gives you a current report on your course, and speed and the status of all your systems at the beginning of each turn. It also asks you what types of orders you wish to give: **(M)**ap, **(I)**dentify, **(C)**ourse, **(S)**hield, **(W)**eapon, **(B)**elt, **(J)**am, **(E)**CCM, **(T)**ransport, or E**(X)**it.

To give orders to one of these systems, press the letter in ( ) and **RETURN.**

5.2 MAP

A map of the space surrounding your ship will appear with your ship in the center. Bearing 0 degrees is at the top of the map, bearing 90 degrees to the right, bearing 180 degrees at the bottom, and bearing 270 degrees to the left.

The computer will ask if you want to:

CHANGE (S)CALE, CHANGE (T)IME POINT, OR E(X)IT.

The enemy ship may be too far away to be visible on the first map you see. If you want to see a larger area, press **S** to change the scale. The computer will now ask which scale you wish (0-5).

Your initial map shows you Scale 2. Press **5.** You will now see the largest possible area, and the enemy ship will be visible. Each other scale will show you a smaller area. Scale 0 will show you only the immediate area around your ship.

CHANGE (T)IME POINT

Once you have set your course, you may wish to watch on your map how your maneuvers will look. You can show the position of your ship at any of the sixteen seconds during the upcoming turn. Press **T.** You will see your ship as it will appear during the first second of your turn. You will also see any guided weapons or fighters that were fired during a previous turn and are on their way to their targets.

Press any number from 1 to 16, and you will see where your ship will be at that second. (You begin at Time Point 1.) Your ship will not appear to move, because at each second the screen re-orients itself to keep your ship in the center. You will see your new position in relation to the position of any enemy ships as they were at the end of the previous turn.
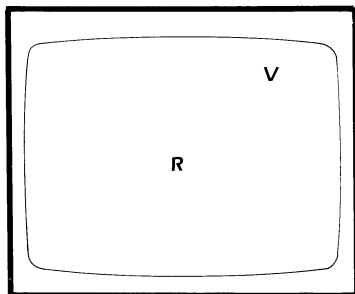
When you are ready to return to the Status Display, press **X.**

5.3 IDENTIFY

You may want to learn more about the enemy ship or ships.

Press **I** for **(I)**dentify.

Your display will now show a map, similar to this:

The ships are identified by the first letters of their names. Your ship currently in its order phase, (in this example, "Ranger") is shown in the center.

(I)DENTIFY SHIP

Now you may want to identify the enemy ship, and learn about its course and size.

Press **I** for **IDENTIFY SHIP**

The computer will ask:

WHAT SHIP?

Enter the initial letter of the ship you wish to identify. A status report on that ship will appear.

NAME	SPD	CRS	BRN	MASS	RANGE	SHLD
Vengeance	3	205	15	16	20	1

SPD: The speed of the enemy at the beginning of the turn.

CRS: The course of the enemy at the beginning of the turn.

BRN: The bearing, or the direction the enemy ship is from you at the beginning of the turn.

MASS: The mass of the enemy ship. This is also the number of critical hits needed to destroy it.

RANGE: The distance between your ship at the time point looked at and the enemy's position at the start of the turn, as measured in lightmils.

SHLD: The number of your shield that is facing the enemy at the current time point for your ship, if the enemy were to stay in its position throughout the turn.

(T)IME POINT

You also have the option, during Identification, to look at the identities of all ships at any of the sixteen time points. Simply enter the number from 1-16.

As with the map display, the enemy ships will be shown where they were at the end of the last turn, and your ship will not seem to move at all, as the screen moves to keep it at the center.

(S)CALE

As with the Map, you can adjust the scale to see either the largest possible area (Scale 5) or the immediate area around your ship (Scale 0).

To return to the Status Display, press **X.**

5.4 COURSE AND SPEED CHANGES

You now have the option to set the course and speed of your ship during the sixteen seconds of the turn.

Press **C,** for **(C)**ourse.

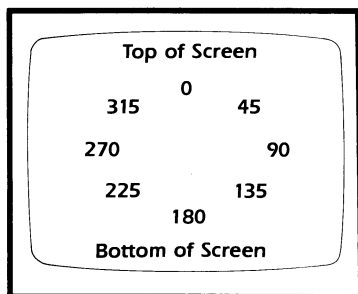The computer will offer you several options:

(C)OURSE CHANGE

You may change the course of your ship during any point in the turn or change course more than once.

The computer will ask:

WHAT COURSE?

You may choose any course between 0 and 359 degrees.

```
Top of Screen
           0
  315            45

 270               90

   225         135
          180
Bottom of Screen
```

The number of degrees you can change course during each second of the turn is decided by the Maximum Acceleration factor of your ship. This was determined at the start of the game by the size of your ship and the number of drives you built into it.

For example, suppose your ship is travelling on course 180 and your ship has a maximum acceleration factor of 4. You enter your desired course as 200 degrees.

In the first second of its course change, your ship would be able to turn to course 184. After two seconds, your ship will be on course 188. On the fifth second of your turn, your ship will reach course 200.

If, on the other hand, your ship was travelling on course 180 and you ordered a change to course 45, and the maximum acceleration of your ship was four, your ship would only be able to come around to course 116 in the sixteen seconds of the turn. You would have to continue your intended course change during the next turn.

WHAT TIME POINT?

You may designate the second, from one to sixteen, that you would like your course change to begin. You can change course more than once in a single turn, but not, of course, more than sixteen times.

POWER REQUIRED:

If you change course during a turn, your ship uses extra energy units. The number of energy units depends upon the size of the ship, the number of functioning drives, and how fast you were going when you decided to change course.

You may also choose to increase or decrease speed during this part of the Orders Phase. Press **S** for:

(S)PEED CHANGE

The computer will ask:

WHAT SPEED?

The minimum and maximum speed you can go, measured in sublight speed pulse factors, will appear on your screen. For instance, if your ship is travelling at speed 4, and you have a maximum acceleration rate of 2, your display will read:

(2-6)

This tells you that, at the speed you are going and with the number of drives you have, you cannot reach a speed greater than 6 or less than 2 during this turn.

MAXIMUM ACCELERATION

Your maximum acceleration factor during each turn will change, depending upon your present speed and the number of functioning drives you have left. In effect the faster you are going the more drives are used in overhead, leaving less drives for positive (or negative) acceleration.

POWER USED

An increase or decrease in speed, like a course change, uses extra power units. If you both increase speed and change course in the same turn, however, you will only expend the power needed for the speed change; the course change will not use any extra energy. (Exception: the drag chute effect)

THE DRAG CHUTE EFFECT

You will discover that starships require as much energy to slow down as they do to speed up. A ship whose drives have been shot out by enemy fire, or whose drives are all engaged keeping the ship at maximum speed, has no way to slow down.

Ingenious starship commanders solved this problem by using the drag chute effect; by extending their solar panels, they were able to catch the almost imperceptible push of starlight and use it like a parachute.

Using this method, it is possible to reduce speed one pulse factor each turn without any cost of energy, and without any need to use drives.

This unorthodox method can only be used if your have no drives to use, or if you are travelling so fast that your drives cannot slow you down. And, if you are using the drag chute effect, you cannot change course. Any course change already ordered that turn will be eliminated.

5.5 (S)HIELDS

You also may charge or drain your shields during the Orders Phase.

Your Shields Status Column on your Status Display tells you the current readiness of your shields. For Example:

SHIELD 1: 10/0

SHIELD 2: 1/0

SHIELD 3: 1/0

SHIELD 4: 1/0

SHIELD 5: 1/0

SHIELD 6: 1/0

SHIELD 7: 1/0

SHIELD 8: 10/0

The ship in this example has strong shields protecting its bow, arcs 1 and 8, and a single shield strength around the rest of the ship.

SHIELD 1: 10/0

The 10 after the shield Number tells you the strength that was given to that shield during the design phase. That shield can deflect up to 10 damage factors from an enemy weapon. The 0 after the 10 tells you that no batteries need re-charging; that shield is at full power.

But suppose that your ship has been hit by enemy fire during the previous turn. Your Shield Status Column may show:

SHIELD 1: 5/38

This tells you that Shield 1 has been hit by enemy fire, and reduced from Strength 10 to Strength 5. It also tells you that, in order to bring it back up to full strength, you must recharge 38 shield batteries. To do this, press **C** for:

(C)HARGE

The computer will ask which Shield to charge. In this example, press **1.**

It will now ask how many energy units to put into charging the batteries: 0-38.

If you enter **38**, the Shield will be restored to full strength. The Status Display will again show:

SHIELD 1: 10/0

DAMAGED AND DESTROYED SHIELDS

After being hit by enemy fire, your Status Display may show:

SHIELD 1: 2/0

Sixty-four of this shield's batteries have been destroyed, reducing its strength from ten to two. The zero tells you that no amount of energy can restore this shield to its original strength. If the status reads:

SHIELD 1: 0/0

It means all the batteries have been destroyed. It is no longer possible to shield this arc.

If your **POWER REMAINING** is seriously low, you can drain the power from a charged Shield and put it into your ship's other systems. Press **D** for:

(D)RAIN SHIELD

The display will ask:

WHICH SHIELD?

In this example, type **Shield 1.**

DRAIN HOW MUCH POWER (0-80)?

In this example, press **40.**

The Status Display will change from:

SHIELD 1:10/0

to:

SHIELD 1: 5/40

At the same time, the **POWER REMAINING** will increase from:

POWER REMAINING: 15

to:

POWER REMAINING: 25

As you see, this is not an efficient way to get extra power. For every 4 shield battery units you drain, only 1 additional energy unit is added to your power remaining.

It is also possible to drain power from one shield and move it to another shield. For example, suppose your Status Display shows:

SHIELD 1: 10/0

SHIELD 2: 0/6

Suppose you expect to be hit on Shield 2, but don't have enough **POWER REMAINING** to recharge it. Press **T** for:

(T)TRANSFER

The computer will ask:

CHARGE WHAT SHIELD?

Press **2.** The computer will ask:

DRAIN WHAT SHIELD?

Enter **1.** The computer will ask:

HOW MUCH ENERGY (0-12)?

Enter **12.**

The Status Display will now show:

SHIELD 1: 8/12

SHIELD 2: 1/0

Of your twelve energy points, six were added to shield two, bringing its number of charged batteries up to eight, enough for one full strength. As you see, this is also an inefficient source of power; for each two shield batteries you drained, only one energy point actually reached the other shield. But, in an emergency, it may be your only choice.

Notice also that you may move less than eight points at a time, or more than eight, but in determining shield strength, you must have a full eight batteries for each strength point. For example, fifteen charged batteries would give a shield only one strength point: sixteen charged batteries would give the shield a strength of two.

5.6 CHARGING AND FIRING WEAPONS

During the Orders Phase, you have the option of charging and firing your weapons. Press **W** for:

(W)EAPONS

Most of your weapons must be charged before they can be fired. Some, like phasers and photon torpedoes, can be fired in the same turn they are charged. Others, like disruptors and plasma torpedoes, take two or three turns to charge before they can be fired.

The status of each of your weapons is shown on your Status Display:

1) SIEGE   0/ /
2) PHOTON   0/ /
3) PLASMA   0/ /

Weapon number 1 is a Siege Phaser; weapon 2 is a Photon Torpedo, and weapon 3 is a Plasma Torpedo. The 0 after each weapon tells you they have not been charged.

If you wish to charge your weapons, press **C** for:

(C)HARGE

You will be asked which weapons you wish to charge. Press the number of each weapon, without commas between. For weapons 10, 11, and 12, press **0,:**, and **-.** (zero, colon and hyphen, respectively.)

In our example, press **123 RETURN.**

The status display will now show:

1) SIEGE   1/ /
2) PHOTON   1/ /
3) PLASMA   1/ /

The 1 after each weapon tells you that it has been charged one turn. Each 1 will be highlighted, to tell you that it was charged that turn.

LIGHT PHASERS, HEAVY PHASERS, SIEGE PHASERS and PHOTON TORPEDOES may be fired in the same turn that they are charged.

DISRUPTORS

Need to be charged during two consecutive turns. They are ready to fire during the second turn.

PLASMA TORPEDOES

Need to be charged three consecutive turns. They are ready to fire during the third turn.

If a weapon is not charged in a given turn, it loses all its accumulated charge. All weapons must be used when ready, or that charge is wasted.

POWER NEEDED

Light Phasers	**1 energy unit per turn for one turn**
Heavy Phasers	**1 energy unit per turn for one turn**
Siege Phasers	**2 energy units per turn for one turn**
Photon Torpedoes	**5 energy units per turn for one turn**
Disruptors	**2 energy units per turn for two turns**
Plasma Torpedoes	**5 energy units per turn for three turns**

FIRING WEAPONS

Before you fire your weapons, you should be certain that:

1. The weapons have been charged the correct number of turns.

2. The enemy will be within range if you fire. The Identify command will tell you his range at the beginning of the turn. You must guess what he will do.

3. If you are going to fire a phaser, disruptor or photon torpedo, will your weapon be facing the enemy? The Identify command will tell you which of your shields is facing the enemy at the beginning of the turn.

You also should consider the characteristics of each weapon.

DRAINING SHIELDS

Weapons that can drain shields cause normal damage and in addition drain four shield batteries for each damage point. For example, suppose a shield with this status:

SHIELD 1:10/0

is hit by a photon torpedo. The photon torpedo will overwhelm the shields as a normal weapon would, using ten of its damage factors to drain the shield and causing four factors of damage to the ship. In addition to this, however, the photon torpedo will drain four batteries for each of its fourteen damage factors. The shield will be left this way:

SHIELD 1:1/66   (10 + (4 × 14) = 66)

WEAPONS CHARACTERISTICS

The effective weapons ranges shown in the chart on the back page are for a tech level two ship with an efficiency of two. The range on ships with a lower efficiency or tech level will be less, and will be longer for a ship with a greater efficiency and tech level. For instance, the weapons on a tech six ship with a crew efficiency of three will have nearly double the effective range shown on the chart.

If you are ready to fire, press **F** for:

(F)IRE WEAPONS

The computer will ask:

WHICH WEAPONS?

Enter the number of the weapons you wish to fire by pressing 1 through 9 or zero, colon or hyphen. The computer will ask:

WHICH TARGET?

Enter the initial letter of the target ship. Each weapon may fire at only one target. However, if you have four different weapons, you may fire at four different targets. The computer will ask:

MODE OF ATTACK?

You may choose the second during the turn in which you wish your weapons to fire, with one of these options:

(R)ANGE

As soon as the target is within the range you specify, the weapon will fire.

(T)IME

You may specify the second of your turn when you wish your weapon to fire.

(L)AST INSTANT

The weapon will wait until the best possible moment to fire. It will:

● Hold fire until the last second while the range is decreasing, but fire immediately if the range begins to increase again, or:

● Fire instantly if it appears that the target is going to move out of the current arc of fire.

This mode only works if your weapon is aimed at the target to begin with. If it is not able to shoot at the beginning of the turn, it will not shoot at all.

When you have given a weapon the order to fire, it will be shown on your status display. For example:

1) SIEGE 1/L/E

Weapon 1 is now ready to fire. It is a siege phaser; it has been charged one turn; it is set to fire at the (**L**)AST INSTANT, and its target is the (**E**)NTERPRISE.

You may also launch your guided weapons. Press **L** for:

(L)AUNCH GUIDED WEAPONS

You may choose to launch a (**L**)ight Seeker, (**H**)eavy Seeker, or (**F**)ighter Group. You may launch a maximum of one fighter swarm and one seeker per turn.

The computer will ask:

WHICH SHIP IS THE TARGET?

Enter the initial letter of the name of the target ship.

If you decide to cancel your order, press **S** for:

19

(S)TOP GUIDED WEAPONS

This command cancels the order to fire all guided weapons that have not left the ship. Once a guided weapon has left the ship, however, it cannot be stopped.

If you decide not to use a weapon, press **D** for:

(D)RAIN

The computer will ask:

WHICH WEAPONS?

Enter the number of the weapons. Again, weapons 10, 11 and 12 are represented by zero, colon and hyphen.

The power status of that weapon will no longer be highlighted, and the number of turns charged will return to what is was at the beginning of the orders phase.

You can only drain a weapon which has been charged that turn; you cannot use weapons charged in earlier turns as an auxiliary power source.

If you try to charge, drain, or fire the same weapon twice, or a non-existent weapon, the computer will warn you:

ILLEGAL WEAPON.

5.7 BELTS, ECM AND ECCM

(B)ELTS

Belts are your first line of defense against enemy guided weapons. Each belt, a small, phaser-armed satellite, fires, one after the other, at approaching enemy seekers, plasma torpedoes, or fighters. Each belt has one chance in four of shooting down a fighter, one in eight of shooting down a heavy or light seeker, and one in four of weakening the blast of a plasma torpedo. The more belts you have, therefore, the better your chance of shooting down the enemy weapon.

Once a belt has been charged, it keeps its charge until it fires at an enemy weapon.

To charge your belts, press B, and then enter the number of your belts you wish charged. Your status display will show you the number of your belts that are ready.

POWER REQUIRED:

One energy unit per belt.

ELECTRONIC COUNTERMEASURES (ECM)

Electronic Countermeasures, (ECM), or jammers, are systems that confuse approaching enemy fighters, seekers, photon and plasma torpedoes, by jamming their guidance systems and projecting ghost targets. Your ship carries ECM jammers of a strength equal to its tech level. Each level of ECM reduces the damage caused by an enemy guided weapon by one factor, or makes the chance of a hit by an enemy phaser, disruptor or photon torpedo less likely. Plasma torpedoes also are weakened by ECM.

For example, if you have charged six factors of ECM, and you are hit by an enemy light seeker, the damage that light seeker causes will be reduced from 12 factors to 6 factors.

To charge your ECM, press **J** for (**J**)AM and enter the number of levels, up to your tech level, that you wish to charge. If you have a tech six ship, and you charge all your ECM, your status display will now show:

ECM:6

ELECTRONIC COUNTER-COUNTERMEASURES (ECCM)

Your ship is also equipped with Electronic Counter-Countermeasures. These systems can sift through the chaos of electronic noise thrown out by enemy ECM to find the real targets. If you are firing phasers, photons or disruptors, each level of your ECCM cancels out one level of the enemy's ECM. For example, if your ship has an ECCM level of 6, and the enemy ship has an ECM level of 6 or less, your phasers will be just as effective as if the enemy had no ECM at all.

The maximum level of your ECCM equals your tech level, and is shown on your status display after **SNSOR.**

To charge your ECCM, press **E**. You may then enter any number of energy units up to your tech level.

If your ship is tech six, your status display will show:

<div align="center">

ECCM:6

</div>

EVASIVE MANEUVERS

Evasive maneuvering is another way to avoid an enemy seeker, torpedo or fighter swarm. Also, high speed may cause the enemy weapon to miss. It is especially difficult to hit a fast-moving target with a very long range weapon, such as a disruptor.

5.8 TRANSPORTERS

You may use your transporters to beam parties of marines to a friendly ship, or board an enemy ship.

Press **T** for:

(T)RANSPORT

The computer will ask:

HOW MANY MARINES TO TRANSPORT (0-20)?

You may beam twice as many parties of marines as you have transporters; in this example, twenty. Your number of transporters is shown on your status display after **TRANS**.

The computer will next ask:

WHAT SHIP IS TARGET?

Type the initial letter of the target ship and press **RETURN**. The number of marines ready to beam will now appear on your status display after **TRANSPORTER:**.

POWER REQUIRED:

One energy unit per transporter.

TRANSPORTING TO A FRIENDLY SHIP

You can transport marines at any time to a friendly ship. You can also transport marines onto a ship which has been boarded by the enemy, if combat is still going on, to aid in its defense.

Your marines, regardless of their efficiency level, will assume the efficiency level of the crew and marines of the friendly ship they beam aboard. If they are sent to reinforce your marines fighting on an enemy ship, they will take on the efficiency level of your marines already on that ship.

BOARDING AN ENEMY SHIP

Ordinarily, you can beam marines onto an enemy ship only if no charged enemy shield is facing you. However, it is possible to beam aboard a protected enemy ship if you can seriously breach his shield. If you can cause his shield five damage points more than are needed to breach it, your marines will be able to board his ship. Your sensors will be able to detect the breached shield, and will choose that second for the marines to beam across.

If you try to beam marines onto an enemy snip while its shields are intact, your beaming will fail, and your marines will remain on board your ship.

ON-SHIP COMBAT

The battle between boarding marines and defenders will begin at the end of the turn, and may last several turns, until either the ship's defenders or the boarding marines are eliminated.

If the battle lasts several turns, you will still be able to issue orders to your ship, even if there are enemy marines on board. You will be able to see the progress of the battle on your Status Display. If the number of total defenders falls to 0, the enemy has captured your ship.

The success or failure of your boarding party will be decided by these factors, in order of importance:

1. The number and effectiveness rating of the boarding marines.
2. The number and effectiveness rating of the defending marines.

3. The number and effectiveness rating of the defending crew.

4. Defending troops travelling as cargo.

CAPTURED SHIPS

If your boarding party successfully overwhelms the enemy defenders, the ship is captured. Thereafter in the scenario, that ship is part of your fleet, and you may give orders for its use.

5.9 ENDING THE ORDERS PHASE

When you are satisfied with your ship's orders, press **X** for E(**X**)IT.

If you have more than one ship, you will be asked to give them their orders. Enter their orders in the same way.

When you have given all of your ships their orders, press **/** . Until you press **/** , you may still return to any of your ships and enter new orders. Once you have pressed **/** , however, your portion of the turn is over.

The screen will now read:

IT IS PLAYER 2's TURN. PLAYER 1 TURN AWAY.

If you have a human opponent, he will now give orders to his ship or ships. If you are playing solitaire, you will proceed directly to the Execution Phase.

When player 2 has given his orders, the Orders Phase is over. The Execution Phase is about to begin.

5.10 RUNNING AWAY

During each Orders Phase from turn ten on, you have one further option: to save your ship by escaping the battlefield. In some scenarios, saving your ship will win you victory points; in others, while you might lose the scenario, it may help to win the war, if your ships are needed in other scenarios in a strategic game. Both range and tractors may be important if you choose this option.

In order to successfully escape, you must meet these conditions:

● If the battle is being fought in enemy territory, you must have a range of at least 2 to escape. If it is being fought in contested territory, you need a range of 1 or more. Ships with a range of 0 cannot escape at all, unless towed away by a ship with a tractor beam.

● If your ship has sufficient range and a tractor beam, it can escape with one additional ship, even a ship with range 0, in tow. If you have two tractors, you can save two ships.

● No ship can escape during the first ten phases of combat.

To escape, press **✱** . All your ships that have the ability to escape will flee the battle zone.

6.0 THE EXECUTION PHASE

You are now ready for the Execution Phase.

The computer will ask:

WHAT SHIP IS THE ORIGIN?

You may select which ship will be in the center of the screen. Enter the initial letter of that ship. The computer will ask:

WHAT SCALE? (0-5)

You may watch the battle on a large-scale map (Scale 5) or a smaller scale map. Enter the number of the scale you wish.

You will now watch all ships simultaneously performing the maneuvers and firing the weapons indicated during the Orders Phase. The display will show you not only the ships, but also any guided weapons that are on their way to their targets. As each weapon reaches its target, the execution will pause, and the display will tell you whether or not that weapon got through the defenses, whether it hit its target, and how much damage it caused.

7.0 DAMAGE

The amount of damage that any weapon causes depends upon the power of the weapon and the effectiveness of the defensive systems.

There are three types of damage: systems damage, extraordinary damage, and critical hits.

SYSTEMS DAMAGE

The damage weapons cause to your ship's systems will depend upon how much space each system occupies. For instance, if your ship has a total space of 100 cubic sectors, and you have five drives, taking up twenty cubic sectors, the chance of a drive being hit is one in five.

PROTECTED SYSTEMS

Some systems, either because of their design or their location on the ship, are less likely to suffer damage from enemy fire.

These systems, even if they are hit, still have a seventy-five percent chance of surviving in working order:

Cargo Holds

Tractor Beams

Weapons

Fighter Bays

Drives

Because of their solid protective shields and few moving parts, warp drives are particularly hard to damage. A warp drive, even if hit, still has an almost ninety percent chance of still working.

DAMAGE STATUS DISPLAY

The number after DMGE on the status display tells you what percentage of your ship's total number of cubic sectors has been damaged. This number is also the chance that your ship will suffer extraordinary damage from the next hit.

DAMAGE TO DRIVES

If, despite their protection, some of your drives are put out of action, your ability to turn, speed up or slow down will be severely limited. If all your drives are destroyed, your ship will completely lose its ability to maneuver. All you can do is either slow down your ship to a stop with the drag chute effect and either fight it out or wait for help, or keep going and hope you're pointed in the direction of home.

THE EFFECT OF SHIELDS ON DAMAGE

If a weapon or weapons hits your shield, the total number of damage factors will be totalled and matched against the strength of your shield. If it is less than the strength of the shield, your ship will suffer no damage, and a number of batteries equal to the damage factors will be drained from that shield. (If the weapon is a photon torpedo or seeker, an additional number of batteries equal to four times the damage factors will also be drained.)

If the damage is more than the shield strength, the number of damage factors over the shield strength will be counted as damage to your systems.

THE EFFECT OF ARMOR ON DAMAGE

When a layer of armor is hit, any further damage will be deflected. Armor itself can only be destroyed by damage from a plasma torpedo, although this does not prevent the ship's destruction.

EXTRAORDINARY DAMAGE

Extraordinary damage is damage which kills members of your crew, your marines, or any troops travelling aboard, or which destroys your sensors or your jammers. The more extraordinary damage your ship suffers, the more likely you will receive a critical hit.

CRITICAL HITS

Critical hits are the most serious type of extraordinary damage, hits which cause irreparable damage by destroying computers, starting fires or rupturing airtight compartments. Like a seagoing ship whose superstructure is untouched, but which has suffered mortal hits below the waterline, a starship can be wrecked by critical hits even if its other systems are intact. Each hit you

receive raises the chance that the next hit will be critical.

CRITICAL HITS STATUS DISPLAY

The number after **CRITS** on the status display tells you how many critical hits your ship can survive, a number equal to the mass of your ship. If the number falls to zero, your ship will explode. This is the only way your ship can be destroyed.

THE END OF THE SCENARIO

The scenario will end when all the ships have been destroyed or captured or the victory conditions have been met.

8.0 SAVING THE GAME

Just before the orders phase of each turn, you will be asked if you want to stop playing and save the game, so you can finish it later.

If you do want to stop and save the game, press **Y.** The computer will show you the SSI SAVE ROUTINE menu, which is the same as the SAVE SHIP menu. Take out your game disk and put the SSI SAVE GAME DISK into your disk drive, and follow the steps outlined in SAVING SHIPS.

To save the game, you will;

Press (**S**) for SAVE ITEM ON AN SSI SAVE GAME DISK.

Give the game a name of up to ten characters.

9.0 ENDING THE GAME

The game will end automatically if:

All the ships of one player are destroyed

One or both players have escaped the battle space

You can also choose to end the game in the middle of a scenario. When, just before the Orders Phase, you are asked if you want to save the game, press **Y.** The computer will then show you the SAVE GAME menu. You will have the choice of either ending the game for good, by pressing (**E**)ND, or of saving the game for playing later, by pressing (**S**)AVE ITEM ON SSI GAME DISK. (SEE 4.29: SAVING SHIPS)

DECLARING A VICTOR

Once the game has ended, the computer will decide who won. First it will ask,

IS THE SECTOR CONTESTED (C) FRIENDLY TO PLAYER (1) or FRIENDLY TO PLAYER (2)?

The answer depends upon the scenario:

SCENARIO ONE: DEEPSPACE ENCOUNTER: Sector friendly to Player 1 (Enterprise)
SCENARIO TWO: PLANETARY RAID   Sector friendly to Player 2 (Brotherhood)
SCENARIO THREE: COMMERCE RAIDER   Sector friendly to Player 2 (Brotherhood)
SCENARIO FOUR: INVASION   Sector friendly to Player 2 (Brotherhood)
SCENARIO FIVE: DOGFIGHT   Sector Contested
SCENARIO SIX: SURPRISE ATTACK   Sector Contested

Based on your answer, the computer will decide if each ship had enough range left to get home safely.

VICTORY POINT DISPLAY

The computer will then tell you who won.

SHIP	PLAYER 1 VP	PLAYER 2 VP
RELIANT		125
ENTERPRISE	62	
TOTAL	62	125

In this example, the Reliant won the game with a total of 125 victory points to 62. if that Enterprise had been destroyed, it would not even appear on the display.

EXAMINING THE SURVIVING SHIPS

If you wish to examine any of the surviving ships, press any key to continue, and the computer will print

EXAMINE WHAT SHIP (/ to end game)?

Give the name of the ship you want to examine. If your ship has blown up, not even the computer can put it back together again for you to examine. If you wish to end the turn at this point, press **/**.

10.0 CREDITS

Game Program — Paul Murray
Game Rules — David Siefkin
Art & Graphic Design — Louis Saekow, Kevin Heney and Don Woo
Typesetting — Abra Type
Printing — W.H. Barth   A&a Printers & Lithographers
Customized Disc Operating System — Roland Gustafsson

A. A SHORT HISTORY OF STARSHIP DESIGN

Military starship design during the 24th Century is usually divided into six periods, which correspond to the six technological levels.

1. THE PIONEER WARRIORS (2298-2330)

The ships of the early century were relatively primitive, but rugged and versatile. When called upon to fight, these ships launched swarms of guided seekers and torpedoes in the general direction of the enemy ships and hoped for the best. Hundreds of these weapons from this era are still floating through deep space, still vainly seeking their targets. When their long-distance weapons failed, many starship commanders won reputations by closing on the enemy and fighting deadly close-range phaser battles with their opponents.

Both Kellius, who became Chief Designer of the Alliance, and Yezov, later chief architect of the Brotherhood, were students at the Academy of Starship Design and Technology at this time.

2. THE DISTANT WARS (2330-2341)

As Alliance ships explored deeper and deeper space, they began to encounter ships and outposts of the Brotherhood, a league of warlike civilizations eager to dominate the known universe. The requirements of battle in remote space led to the development of longer-range frigates and cruisers, and deadly new weapons, including a new generation of seekers and torpedoes whose designers claimed they could find a digital wrist watch in the Milky Way.

As his graduate project from the Academy, Kellius designed a side-firing siege phaser cruiser, which was widely derided by starship traditionalists. The derision stopped when a prototype of his cruiser, in its first battle, destroyed the Brotherhood dreadnought "Star Lord."

3. INVASION (2341-2355)

The Alliance suffered a setback when Yezov, the most promising designer after Kellius, defected to the Brotherhood, lured by a promise of unlimited resources and a chance to defeat his bitter rival, Kellius. Using captured ships filled with prisoners for realistic battle testing, Yezov developed a new generation of Super Dreadnoughts. In 2344, fleets of these huge ships broke through the Alliance's ring of fortress stars and began to invade the Alliance system.

4. THE DARK YEARS (2355-2380)

In these years, Alliance captains fought desperate battles against the Brotherhood Invaders. Kellius and his designers were hard-pressed to design faster ships and more effective weapons to offset the Brotherhood's huge advantage in numbers. Alliance privateers ventured deep into Brotherhood territory to attack Brotherhood merchant convoys.

5. THE GREAT WAR (2380-2389)

Early in 2355, a daring Alliance raid captured intact the new Brotherhood Cruiser "Liquidator". Having studied its systems, Kellius was able to design a new generation of counterships. The battles that followed between his new fleets and the Brotherhood invaders were the largest battles ever fought in space. Hundreds of derelict ghost ships, victims of these battles, are still drifting lifelessly through space.

6. THE COSMIC BALANCE

An uneasy balance exists between the Brotherhood and the Alliance, as the invaders have been pushed back to the borderline. The disciples of Kellius and the students of Yezov are hard at work, designing new speciality ships; fighter carriers, plasma torpedo frigates, tractor ships, ECM and ECCM ships, decoy ships, and others that will fight the battles of the next century.

In 2390, on his ninetieth birthday, Kellius addressed the students at the Academy of Starship Design and Technology. The five maxims of starship design he gave the students are still widely quoted;

"Ships are destroyed by the mistakes of their designers, not by the enemy."

"Never economize on crew space. If a crewman can't sleep, he can't fight."

"Be sure that your ship can run if it can't fight, and fight if it can't run."

"The best ship is the simplest ship that can accomplish its mission."

"For each perfect ship, there is an equal and opposite countership that will be able to destroy it."

SHIP DATA

SHIP NAME __ENTERPRISE__   TECH LEVEL __5__

EFFICIENCY __3__   MAX SPEED __16__   POWER __32__

MAX ACCEL __8__   MASS __8__

RANGE __2__   CARGO __0__   FTBAY __0__   HULL __22__

RACKS __0__   LTSKR __0__   HSKR __0__

ENGIN __4__   DRIVE __4__   TRANS __1__   TRAC __0__

ARMOR __0__   MARIN __1__   BELTS __0__

	WEAPON	FIRE ARC		
1	PHOTON	1 2 3 4 5 6 7 8	SHIELD 1	21
2	PHOTON	1 2 3 4 5 6 7 8	SHIELD 2	20
3	PHOTON	1 2 3 4 5 6 7 8	SHIELD 3	20
4	PHOTON	1 2 3 4 5 6 7 8	SHIELD 4	20
5	HVY PHASER	1 2 3 4 5 6 7 8	SHIELD 5	20
6	HVY PHASER	1 2 3 4 5 6 7 8	SHIELD 6	20
7		1 2 3 4 5 6 7 8	SHIELD 7	20
8		1 2 3 4 5 6 7 8	SHIELD 8	21
9		1 2 3 4 5 6 7 8		
10		1 2 3 4 5 6 7 8		
11		1 2 3 4 5 6 7 8		
12		1 2 3 4 5 6 7 8		

SHIP DATA

SHIP NAME __RELIANT__   TECH LEVEL __5__

EFFICIENCY __2__   MAX SPEED __16__   POWER __32__

MAX ACCEL __8__   MASS __8__

RANGE __2__   CARGO __0__   FTBAY __0__   HULL __15__

RACKS __0__   LTSKR __0__   HSKR __0__

ENGIN __4__   DRIVE __4__   TRANS __0__   TRAC __0__

ARMOR __0__   MARIN __0__   BELTS __0__

	WEAPON	FIRE ARC		
1	PHOTON	1 2 3 4 5 6 7 8	SHIELD 1	25
2	PHOTON	1 2 3 4 5 6 7 8	SHIELD 2	25
3	HVY PHASER	1 2 3 4 5 6 7 8	SHIELD 3	25
4	HVY PHASER	1 2 3 4 5 6 7 8	SHIELD 4	25
5	HVY PHASER	1 2 3 4 5 6 7 8	SHIELD 5	25
6	LIGHT PHASER	1 2 3 4 5 6 7 8	SHIELD 6	25
7	LIGHT PHASER	1 2 3 4 5 6 7 8	SHIELD 7	25
8		1 2 3 4 5 6 7 8	SHIELD 8	25
9		1 2 3 4 5 6 7 8		
10		1 2 3 4 5 6 7 8		
11		1 2 3 4 5 6 7 8		
12		1 2 3 4 5 6 7 8		

SHIP DATA

SHIP NAME _____   TECH LEVEL _____

EFFICIENCY _____   MAX SPEED _____   POWER _____

                         MAX ACCEL _____   MASS _____

RANGE _____   CARGO _____   FTBAY _____   HULL _____

RACKS _____   LTSKR _____   HSKR _____

ENGIN _____   DRIVE _____   TRANS _____   TRAC _____

ARMOR _____   MARIN _____   BELTS _____

WEAPON	FIRE ARC	
1	1 2 3 4 5 6 7 8	SHIELD 1 _____
2	1 2 3 4 5 6 7 8	SHIELD 2 _____
3	1 2 3 4 5 6 7 8	SHIELD 3 _____
4	1 2 3 4 5 6 7 8	SHIELD 4 _____
5	1 2 3 4 5 6 7 8	SHIELD 5 _____
6	1 2 3 4 5 6 7 8	SHIELD 6 _____
7	1 2 3 4 5 6 7 8	SHIELD 7 _____
8	1 2 3 4 5 6 7 8	SHIELD 8 _____
9	1 2 3 4 5 6 7 8	
10	1 2 3 4 5 6 7 8	
11	1 2 3 4 5 6 7 8	
12	1 2 3 4 5 6 7 8	

B. SUMMARY OF SPACE REQUIRED BY EACH SYSTEM

SYSTEM	CUBIC SECTORS
Drives	4 each
Engines	2 each
Warp Drives	1 tech sector each*
Cargo Holds	1 tech sector each*
Fighter Bays	2 tech sectors each*
Tractor Beams	4 each
Transporters	1 each
Armor	1 per layer
Hull Space (Crew Quarters)	Minimum of 1/2 per crew section or 1 per marine detachment
Racks	2 each
Belts	1 each
Light Phasers	1/2 each for first arc 3/16 each for each additional shield arc
Heavy Phasers	1 for first arc 3/8 for each additional shield arc
Siege Phasers	2 for first arc 3/4 for each additional shield arc
Disruptors	2 for first arc 3/4 for each additional shield arc
Photon Torpedoes	2 for first arc 3/4 for each additional shield arc
Plasma Torpedoes	15 each
Shields	1/64 per battery 1/8 per arc for each shield strength

*1 tech sector = 9 cubic sectors + tech level of ship

WEAPON CHARACTERISTICS SUMMARY

WEAPON	TYPICAL RANGE	SPEED	MAXIMUM DAMAGE
Light Seeker	32	16 per turn (2 turns)	12 factors (drains shields)*
Heavy Seeker	30	10 per turn (3 turns)	18 factors (drains shields)*
Light Phasers	15	Instant	10 factors (less at long range)
Heavy Phasers	20	Instant	14 factors (less at long range)
Siege Phasers	30	Instant	20 factors (less at long range)
Photon Torpedo	20	Instant	14 factors (drains shields)* (less at longe range)
Fighters	Unlimited	—	1 per fighter (30 per swarm)
Disruptors	100	Instant	12 plus tech level (especially affected by speed of target)
Plasma Torpedoes	32	16 per turn	60 factors (wrecks armor) (less at long range)