ATARI®400/800™

STAR RAIDERS™
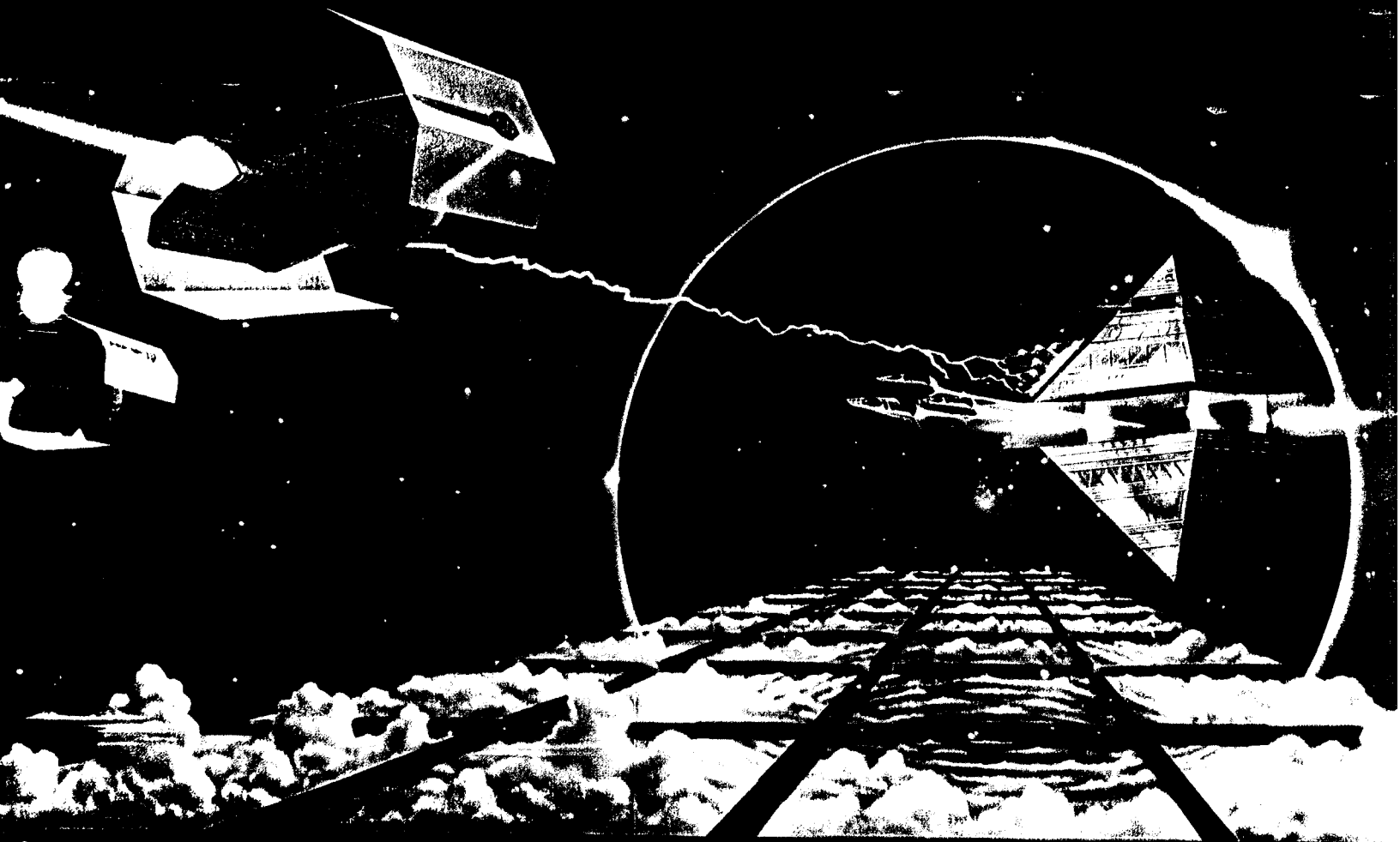
ATARI® A Warner Communications Company
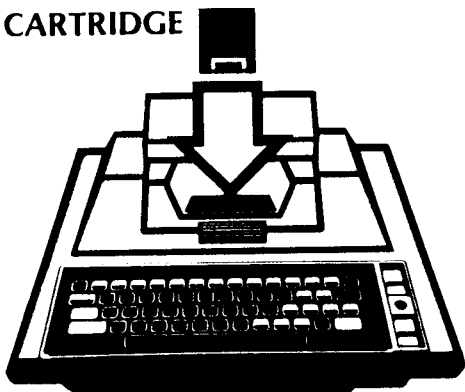
CARTRIDGE
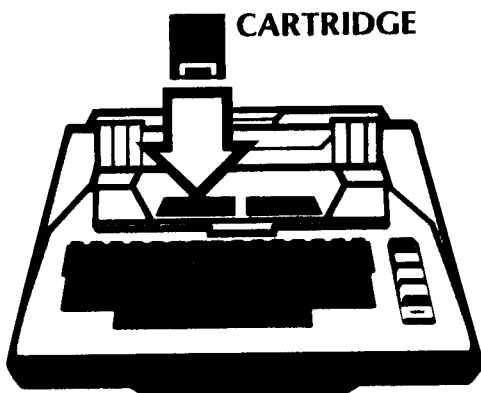
ATARI® 400™ SYSTEM

This Game Cartridge plays on the **ATARI® 400™** or the **ATARI 800™** Personal Computer System. Insert in the **LEFT CARTRIDGE** slot on the ATARI 800 system. Be sure the POWER ON/OFF switch is ON. The ATARI 400 and ATARI 800 systems shut off automatically whenever the cartridge door is lifted. This prevents damage to the computer and to the cartridge. (The power indicator light on the console will be on when the power is ON and the cartridge door is closed, and off when the door is open.)

CARTRIDGE

ATARI 800™ SYSTEM

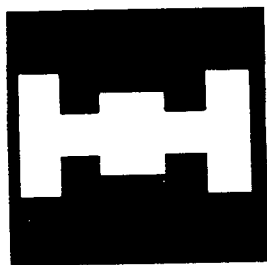A photon torpedo is a burst of concentrated energy—it completely destroys a target upon contact.

CONGRATULATIONS. You are now part of the elite unit of the ATARIAN STARSHIP FLEET—**THE STAR RAIDERS**™. You're about to accumulate many hours of flight time while battling some elusive, but deadly interplanetary enemies. The battleground will be the entire galaxy, which for your convenience has been divided into "sectors" that are displayed on a Galactic Chart. The galaxy is literally at your fingertips.

Before you embark on your first mission, some background information is necessary to fill you in on the current state of affairs.
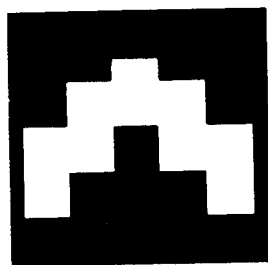
The treaty between the Atarian Federation and the Zylon Empire has been broken. A technical state of war exists. The deadly menace of the Zylon Empire threatens to eliminate humanity as we know it.

Your orders: DESTROY ALL ZYLON STARSHIPS ON SIGHT, SHOW NO MERCY.

To date, only three types of Zylon craft have been observed. They are classified as follows:

ZYLON FIGHTER—Designed for high-speed attacks. At close range they can be deadly.

As a word of caution, beware of the meteors flying through space which you will observe during you mission flights. A meteor will destroy your ship if it hits you when your shields are down. When your shields are up, a meteor can still damage your starship (except in the **NOVICE** level). It is also possible to hyperwarp into a meteor, which will result in damage or destruction to your starship. You can destroy a meteor by hitting it with one of your photon torpedoes.

ZYLON CRUISER—These ships may have assigned patrol routes within a sector and will not attack unless provoked.
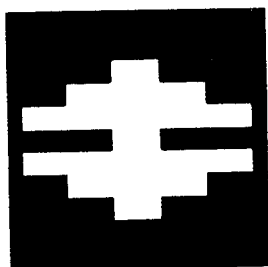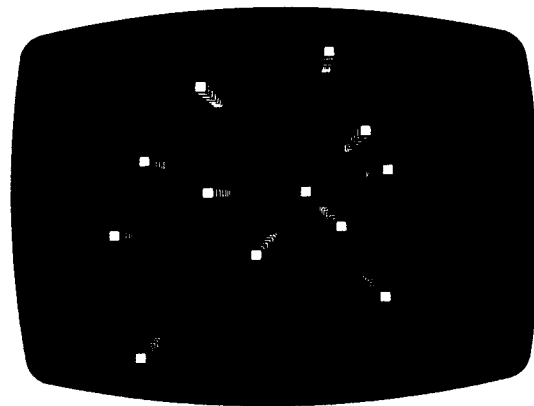

ZYLON BASESTAR—Unlike other Zylon craft these ships are equipped with shields and can only be destroyed at close range. Use extreme caution when attacking a BASESTAR.

The friendly starbases allow you to stop for repairs. The number of starbases in a mission depends on the skill level you're playing. (The higher the skill level, the more starbases, but the more enemy starships as well.) Docking at a starbase enables you to receive a new supply of energy and to repair damaged and destroyed equipment.

During each mission you receive updated information from the computer on the status of your starship and equipment, unless your computer is destroyed or damaged. When that occurs you're on your own until repairs are made.

The rating or rank you receive on each mission depends on how well you develop your skills in space. The **NOVICE** level will help you get started. The going get s much tougher from there. You can work your way up to **PILOT**, then **WARRIOR**, and finally to **COMMANDER**, which is reserved for the smartest, most skilled players.

STAR RAIDERS is a dynamic game, full of depth and detail. It is absolutely essential for you to read these instructions carefully to acquaint yourself with the basic operations of the game and with using the Joystick before you start playing. Then, after each mission you will know more about the important aspects of game play, and the depth of the game will become more apparent to you.
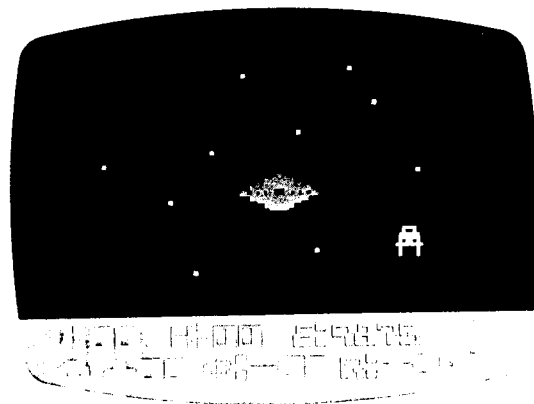
The strategy of the Zylons is simple, yet clever. They will avoid contact unless provoked. While engaging you in battle the rest of the Zylon fleet will be surrounding and destroying friendly starbases, which are vital for your survival. The enemy is dangerous and diabolical. Be on your guard at all times.

During battle you will be concerned only with the enemy craft which are occupying the sector you're currently in, although you have the ability to "hyperwarp" to any sector at any time. When you destroy an enemy starship with one of your photon torpedoes, that starship stays destroyed for the remainder of the mission.

| NOVICE | PILOT | WARRIOR | COMMANDER |

As a final note to this introduction, it is important for you to realize that you never actually see your own starship on the screen (except when using the Long-Range Scan which is explained later). You are sitting at the controls looking out into space. Your television screen is your "window" into space. What you see on the screen is deep space which surrounds your ship.

Becoming a **COMMANDER** will take quite a bit of flight time. Good luck, the galaxy awaits you...

Mission Objectives

Your objectives in space are fivefold. Primarily, your mission is to destroy all Zylon starships, without allowing them to destroy your starship, or at least with as little damage to your craft as possible.
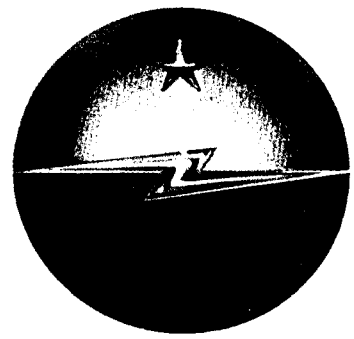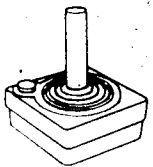
Your secondary objectives are to complete the mission in as little time as possible, with minimal energy expended, and without allowing friendly starbases to be destroyed.

USING THE JOYSTICK

Use one of your Joystick Controllers with this Game Cartridge. Be sure to plug the controller cable firmly into the number **1** jack on the front of your **ATARI 400** or **ATARI 800** console. Hold the controller with the red button to your upper left toward the television screen.

Control Stick Operation

In keeping with official fleet jargon the Joystick will henceforth be referred to as the "**Control Stick**." As shown in the diagram, pushing the **Control Stick** forward causes your starship to dive. Pull the stick back and your ship climbs. Push the **Control Stick** left and your ship turns to port, or to the left side of the ship facing forward. Push the stick to the right to steer your ship to the starboard, or right side of the ship facing forward.

FRONT VIEW
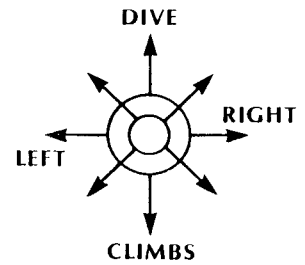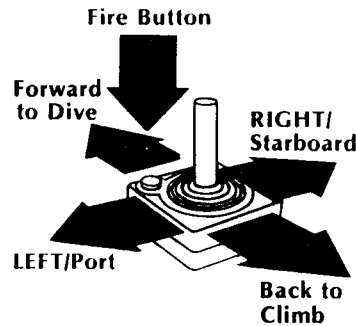
AFT VIEW
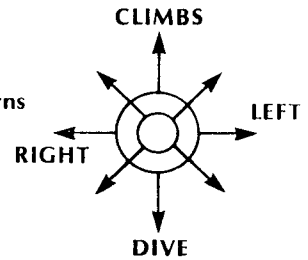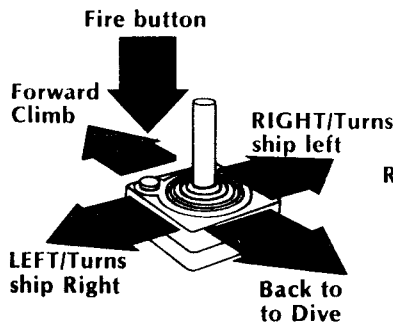
These directions apply to the **front view** of space, which means you are looking out the front of your spacecraft. When the **aft** (or rear) view of space is on the screen, pushing the **Control Stick** right and left has the opposite effect. Since you are looking backward when the **aft** view is on the screen, moving the **Control Stick** to the right causes the back of the ship to turn to the left. Moving the **Control Stick** to the left then, causes the back of the ship to turn to the right.

You will learn how to bring up the **front** and **aft views** on the screen in **Section IV.**

Press the red controller button — the fire button — to fire your photon torpedoes.

Using the **Control Stick** to steer your starship effectively and accurately will take practice. Don't be discouraged if at first this process seems awkward. Your steering ability will sharpen with time.

Console Controls
Make sure the **POWER ON/OFF** switch is **ON**, the **Control Stick** cable is firmly plugged in, and the cartridge is firmly inserted into the console slot.

Press the **SELECT** button on the console to choose the mission difficulty level you wish to play. Each time you press **SELECT** the display will show the mission level at the top of the screen. The **NOVICE, PILOT, WARRIOR,** and **COMMANDER** missions are explained fully in Section **VIII. SKILL LEVEL DESCRIPTIONS.**

After choosing a difficulty level, press **START** to begin your mission. The **SYSTEM RESET** button will abort a mission and return **STAR RAIDERS** to the **NOVICE** mission level. The Atari 🅰 key on the keyboard will also abort a mission, after which a rating will be displayed based on your score thus far.

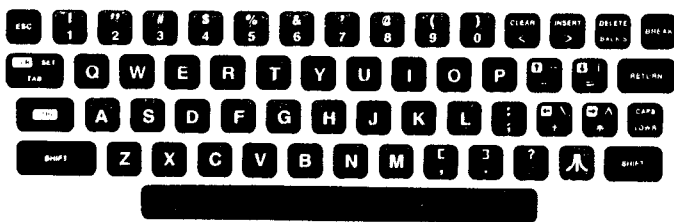(The **OPTION** button has no effect in **STAR RAIDERS**.)

The following keyboard keys control and direct the **STAR RAIDERS** game play:

0-9	Twin-Ion Engine Control (velocity or speed) Also aborts hyperwarp.
A	Aft View
C	Computer Attack Control
F	Front View
G	Galactic Chart
H	Hyperwarp Engines Engaged
L	Long-Range Sector Scan
M	Manual Target Selector
S	Shields
T	Tracking Computer
P	Pause (suspends game)

0-9—Twin-Ion Engine Control
The **Twin-Ion engines** are used to maneuver your starship within a sector when pursuing or evading the enemy. Use these keys to select the velocity or speed at which your starship travels. The corresponding speed is displayed at the far left corner of the Control Panel Display.

Key:
0—V = 00	Control Panel Display (**V** represents velocity or metrons per seconds)
1—V = 00	Your ship always moves forward. The best cruising speed is key **6** (V = 12). The Zylon warships have a maximum speed of approximately **7** (V = 25).
2—V = 00	
3—V = 01	
4—V = 03	
5—V = 06	
6—V = 12	
7—V = 25	
8—V = 37	
9—V = 43	

A—Aft View
Shows view of space behind your starship.

C—Computer Attack Control
Displays "cross hairs" in front $-\!|\!-$, and aft $-\,-$ views. Also displays the Attack Computer Display in the front view at the lower right corner of the screen.

The computer updates the horizontal (Θ), vertical (Φ), and range (R) coordinates of the attacking Zylon starship. It also locks your photons onto the target (see the section explaining the **Attack Computer Display**).

F—Front View
Shows view of space in front of your starship.

G—Galactic Chart
The **Galactic Chart** is one of your most important tools during each mission. It provides you with a display of the entire galaxy, divided into "sectors" on the screen. Each sector contains either enemy starships, a friendly starbase, or is uninhabited.

The ⊤ shaped objects are friendly starbases. The other objects are enemy targets. A sector with   means three enemy starships (also know as a task force), occupy that sector. A sector with   means four enemy starships (a fleet), are in that sector. When a sector has a   in it there are one or two enemy starships (a patrol group), occupying that sector.

You will also notice two dots on the **Galactic Chart**. One dot represents your present position, the other dot (which moves via the Control Stick), indicates your hyperwarp destination.
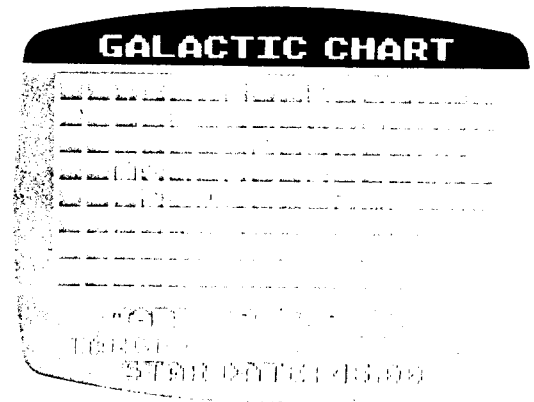
You must move the dot to the sector to which you wish to travel and then "hyperwarp" to that sector. (See **H—Hyperwarp Engines Engaged,** immediately following this explanation.) Checking the **Galactic Chart** frequently is important not only to mark the progress of the mission, but also because the enemy starships will shift periodically in an effort to surround and destroy starbases.

THE ZYLON FLEET WILL CONCENTRATE ON ONE STAR-BASE AT A TIME, AND WILL NEVER SCATTER IN AN EF-FORT TO ATTACK AND SURROUND MORE THAN ONE STARBASE SIMULTANEOUSLY.

Whenever a starbase is surrounded, you have approximately one minute (100 centons) to clear a sector adjacent to the starbase to save it. The diagram shows the necessary enemy positions for a starbase to be surrounded.
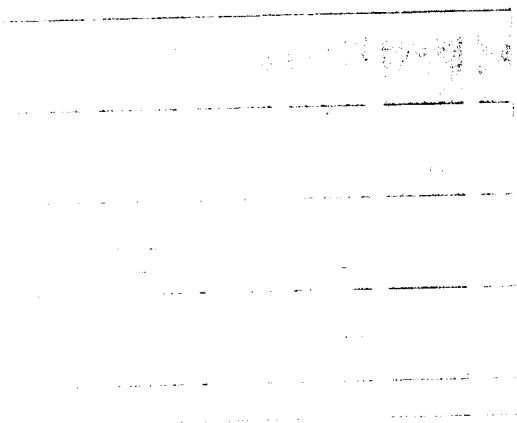
The Zylons will shift at different rates depending on their size. A patrol group will move the fastest. A task force will move at half the speed of a patrol group. A fleet will move at approximately 1/8 the speed of a patrol group.

is vital information displayed just under the **Galactic Chart** on the screen. As you move the dot to each sector, the amount of energy needed to hyperwarp to that sector is shown, (e.g. **WARP ENERGY = 700**) — based on distance; and the number of enemy targets that occupy that sector is displayed (e.g. **TARGETS = 3**).

The "**STAR DATE**" is also shown — it represents the elapsed time during a mission. The **STAR DATE** is based on units which are called centons. The enemy may jump from one sector to another when the **STAR DATE** crosses .00 or .50.

In addition, there is "**Damage Control**" (**DC**) information located at the bottom, right side of the screen — **DC:PESCLR.** The letters correspond to the following equipment:

P = Photons   **E** = Engines   **S** = Shields
C = Computer   **L** = Long-Range Scan   **R** = Sub-Space Radio

The status of the equipment is defined by color. A blue letter indicates the equipment is okay or working normally. Yellow indicates damaged equipment and red means the equipment has been destroyed.

The engines will still work even after they have been destroyed thanks to a backup impulse system. However, progress will be very slow. The shields will "flicker" when damaged. If you take an enemy photon hit when the shields have flickered off you will be destroyed. When the computer is damaged, the coordinates Θ, Φ, and R are lost. When the computer is destroyed, no computer functions are performed.

When using the Long-Range Scan after it has been damaged, you will see a mirrored image of everything in the sector (See the section describing the **Long-Range Scan.**)

H — Hyperwarp Engines Engaged

You must engage **hyperwarp** to move from sector to sector. You do this after moving the dot on the Galactic Chart with the Control Stick to the desired sector (see section on Galactic Chart).
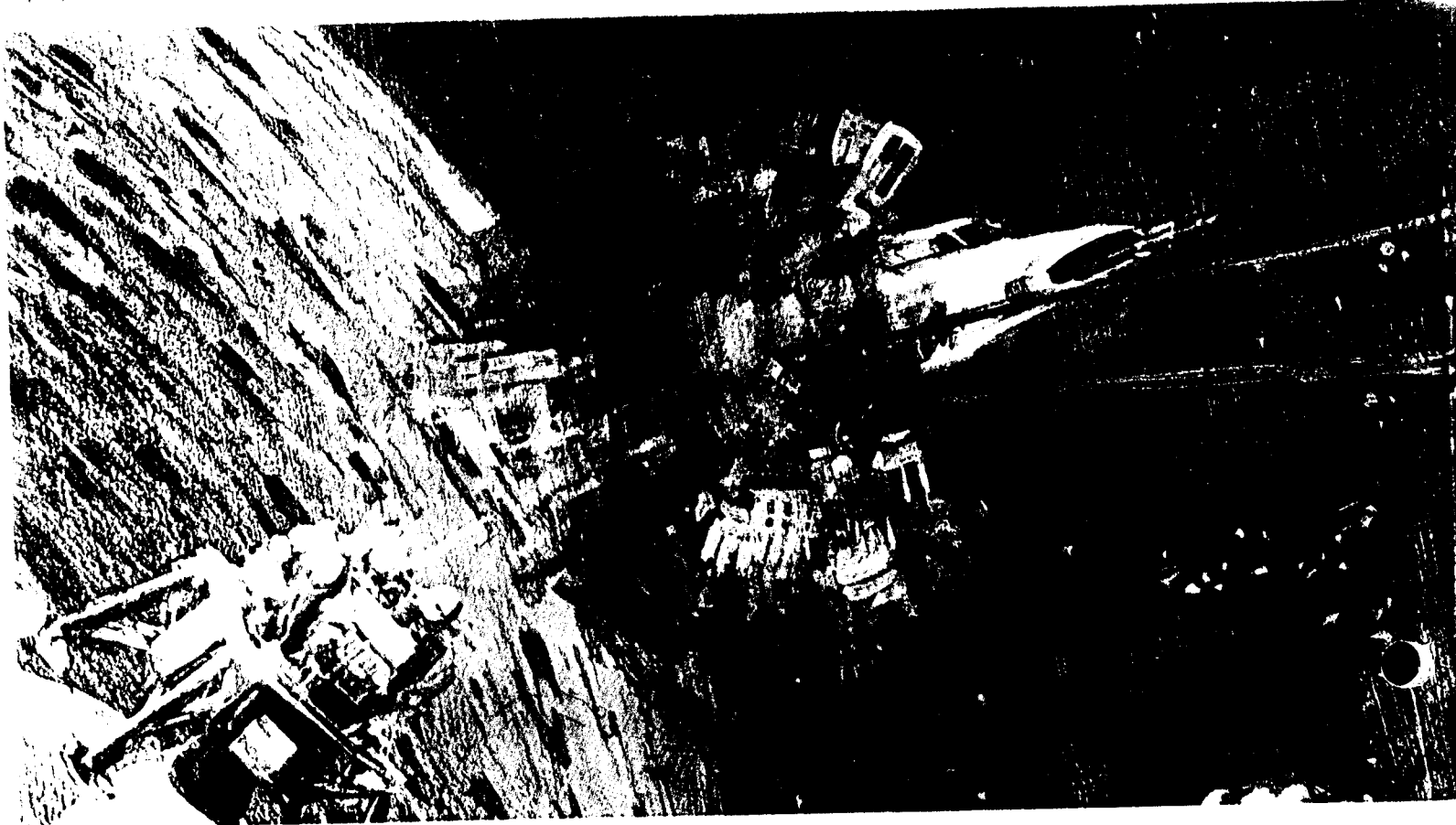
At the **NOVICE** level you need not "steer" in hyperspace. However at the **PILOT, WARRIOR,** and **COMMANDER** levels you must steer while in hyperspace. To begin a hyperjump, first make sure you are in the front view (F). Then press **H** (hyperwarp). The **hyperwarp** target marker will be displayed between the cross hairs. (See diagram).

CROSS HAIRS →

← HYPERWARP TARGET MARKER

Using the Control Stick keep the **hyperwarp** target marker lined up between the cross hairs as closely as possible while **hyperwarp** is engaged. If you get too far out of line, you may end up in the wrong sector. The difficulty in hyperwarping from sector to sector increases with the distance between the sectors.

A RED ALERT WILL BE SOUNDED AS A WARNING INDICATOR WHEN YOU ENTER A SECTOR OCCUPIED BY ENEMY STARSHIPS.

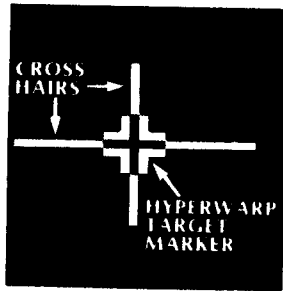The closer you jump to the center of the sector, the closer you will be to the target or targets. To abort **hyperspace,** press any one of the engine control keys (0-9).

L — Long-Range Sector Scan
This will show you a top view of the sector your starship is occupying. Your ship is in the center and all other objects in the sector rotate around it. (See diagram.) The enemy targets (and meteors) will appear as flashing squares and are larger than the other objects, which are stars. To use the sector scan:

1. Select a target.
2. Move the Control Stick to the left (the objects will rotate around you), until the target is directly in front of you.

3. Move the Control Stick forward or back (depending on the position of the target on the screen), until the target is as far away from you as possible (toward the top of the screen).
4. Use the engines to approach the target.
5. Minor course corrections may be needed as you approach the target. Repeat Steps 2 and 3 if necessary.
6. When the target is very close to your ship, stop the engines. The target should now be visible in the front view.

LONG RANGE SCAN

C. Target Destination

B. Target

A. Your starship
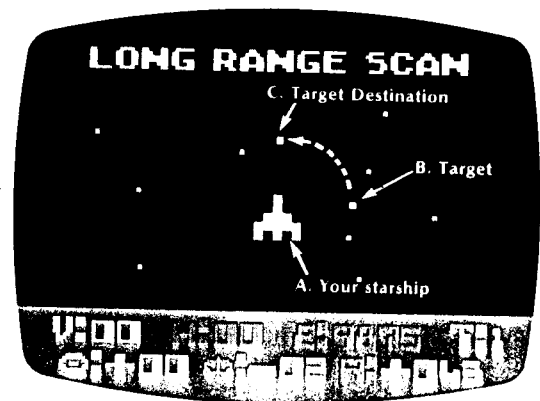
When the **Long-Range Scan** is damaged you will see a mirror image of every object which is being scanned. One object will be a reflection only. Select a target and follow procedures 2, 3, and 4. If the target moves away from you (rather than toward you), you have chosen the reflection instead of the real target.
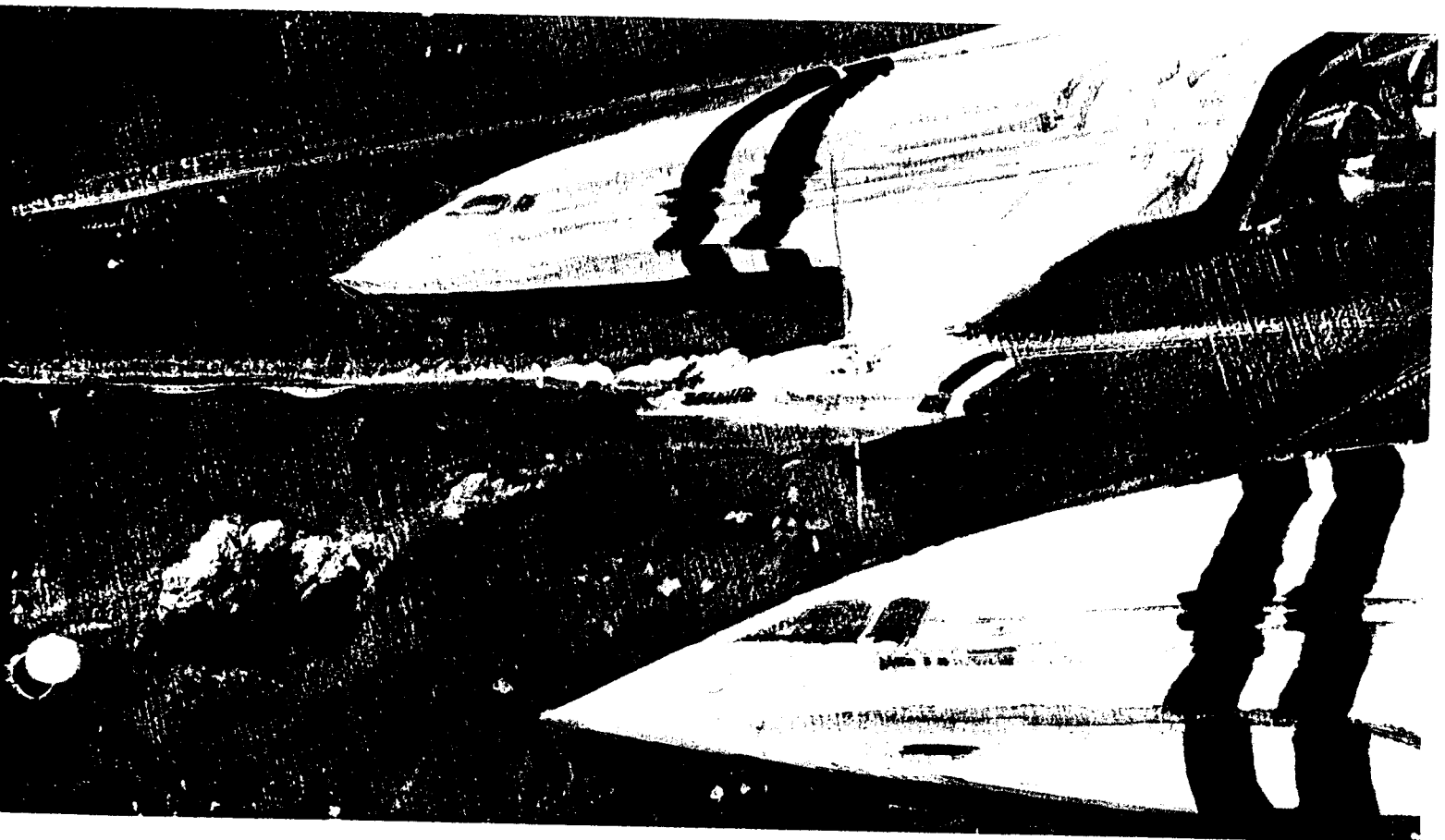
M — Manual Target Selector

When you hyperwarp into a sector with more than one enemy target in it, the computer must decide which enemy to display in the Attack Computer Display (as well as the enemy's coordinates- Θ, Φ , R — in the Control Panel Display).

Target selection then, is done automatically, provided the computer has not been destroyed. The computer will randomly select a target unless you are in a battle, in which case the computer will select the target that is shooting at you.

By pressing **M** you can manually select another target. Typically, only two Zylons will attack at one time. They are displayed as target 0 or target 1. The computer may select T=0. By pressing **M** you can change the target to T=1 (shown in the Control Panel Display).

When tracking a friendly starbase, T will be 2; during hyperwarp, T will be 3. (Note: T=2 overrides T=3.)

S — Shields

The **shields** protect your starship. When they are activated there will be a bluish tint to space. When the **shields** are not activated space will appear black. Your starship will be destroyed if hit when the **shields** are down. The Control Panel Display and Galactic Chart become yellow when your shields are damaged or destroyed.

T — Tracking Computer

When you activate the **Tracking Computer** it automatically tracks the selected target (if the computer has not been destroyed) as it moves from front to aft views in space. This, of course, will cause the screen display to shift from front to aft views in space.

WARNING: This mode should be used by experienced space pilots only. It is possible to be caught in a cross-fire in which one enemy will be in front of you and the other behind you. As they alternately fire at you, the computer will automatically change views on the screen (front to aft or aft to front). This will happen very rapidly and only experienced STAR RAIDERS will be capable of surviving.

P — Pause

Stops the mission temporarily. To continue the mission move the Control Stick in any direction. The **pause** key works at any time during a mission, and may be used to suspend hyperwarp.

WARNING: After nine minutes in which no control keys are pressed or no photons are fired, the game will automatically abort and go into the attract mode. Only a starfield will be displayed.

Control Panel Display

Displays information via the Control Panel indicators. The indicators are located toward the bottom of the screen in the front, aft, and long-range views. They are:

V:12 (Velocity)   K:18 (Kills)   E:8260 (Energy left)
T:2 (Target selected; changes to C:2 when Tracking Computer is on.)
Θ : +12 (Theta, represents horizontal offset of target, in gradons.)
Φ : +10 (Phi, represents vertical offset of target, in gradons.)
R: +236 (Range of target, in centrons.)
+ = Target is in front of ship.
- = Target is in back of ship.

Attack Computer Display

The **Attack Computer Display** appears at the bottom right corner of the screen, when the front view of space is shown. By lining up the target marker in the middle of the **Attack Computer Display** you can track and locate enemy targets, or friendly starbases.

When you center the target marker you will notice indicator marks on the edges of the display. These marks are used for automatic computer lock-on of your ships photon torpedoes.

The marks called out as **A** in the diagram indicate that the computer has horizontally locked your photons onto the target. The marks called out as **B** indicate that the computer has horizontally and vertically locked your photons onto the target. When the marks called out as **C** appear, the target is locked in horizontally, vertically, and is within range. This is the best time to fire your photons. Both photons will fire with a kill probability of 90% guaranteed.
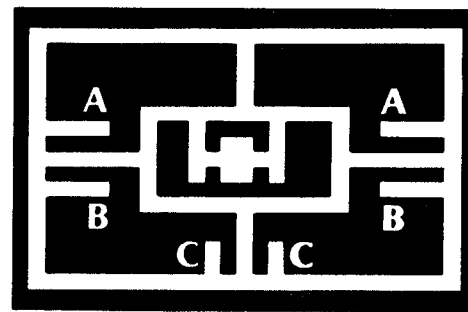
NOTE: Using the computer lock-on is the best procedure for destroying a Zylon BASESTAR.

Also note that Θ = +0, and Φ = +0 when the target is centered. Whenever you are in an empty sector the **Attack Computer Display** will be empty. Likewise, when you destroy all enemy targets in a sector, the target marker will disappear from the **Attack Computer Display**.

Sub-Space Radio

The **Sub-Space Radio** is used for updating the Galactic Chart. It relays the messages: "STARBASE SURROUNDED" and "STARBASE DESTROYED." It also generates the targets indicator, displayed on the Galactic Chart. If the **Sub-Space Radio** is damaged the Galactic Chart will not be updated. If destroyed, no radio communication functions are performed.

If the Sub-Space Radio is damaged, moving the cursor around the Galactic Chart will still indicate the number of enemy targets in each sector on the TARGETS indicator at the bottom of the screen.

You start each mission with 9999 units of energy. Every operation of your starship requires energy. There are, however, different levels of energy required for different starship functions. You may obtain a new supply of energy (provided you don't allow it to totally run out), by docking at a starbase, the procedure for which is described in the next section (**VI. STARBASE DOCKING**). If you allow your energy to run out (reach zero) the mission will be aborted.

NOTE: As a warning, the Control Panel Display flashes red when your energy supply drops below 1000 units.

ENERGY DRAIN

Reason for Drain	Unit Drain
For each enemy photon hit	100 units
For each photon fired	10 units
Per second when shields (S) are up	2 units
Per second when computer (C) is activated	½ unit
Per second for life support system (always on)	¼ unit

ENERGY USED FOR ENGINES

Twin-Ion Speed	Unit Drain Per Second
0	0
1	1
2	1.5
3	2
4	2.5
5	3
6*	3.5
7	7.5
8	11.25
9	15

*The most efficient speed is **6** (V = 12), in terms of energy used and distance traveled.

ENERGY USED FOR HYPERWARPING

Hyperwarp Distance (in sectors)	Energy Drain per Jump (in units)
0	100
1	130
2	160
3	200
4	230
5	500
6	700
7	800
8	900
9	1200
10	1250
11	1300
12	1350
13	1400
14	1550
15	1700
16	1840
17	2000
18	2080
19	2160
20	2230
21	2320
22	2410
23	2500

NOTE: Jumps over a distance of five sectors are very costly. If it is necessary to go a long distance it is more efficient to make several smaller jumps rather than one long jump. Also note that these numbers are approximate only. It is possible to find null points within a sector which vary these values slightly.

VI. STARBASE

When anything needs to be repaired on your starship, or when your energy supply is low, it is necessary to dock with a starbase.
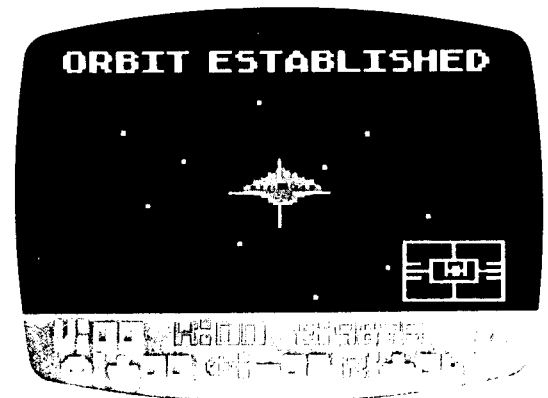
After hyperwarping to a sector with a starbase, center the target marker in the Attack Computer Display. Check the range (R) showing on the Control Panel Display to determine the distance between you and the starbase. Make sure that R is + (i.e. in front of you). Also, the coordinates Θ and Φ should be close to zero (i.e. less than ± 3). Use the Twin-Ion engines to approach the starbase.

You may want to use the Long-Range Sector Scan (L) to locate the starbase, especially if your computer has been destroyed. If so, follow the procedure described under Long-Range Sector Scan (**Section IV.**). The starbase will appear as -⦿- on the sector scan display.

Docking is established when the starbase is in the center of the cross hairs at a minimum distance from your ship. When three small windows appear on both edges of the starbase, and it is centered between the cross hairs, reduce your engine speed to 0. The message, "ORBIT ESTABLISHED" will appear on the screen, followed by the message, "STANDBY." When the message, "TRANSFER COMPLETE," appears, docking is complete and it is safe to hyperwarp to another sector.

NOTE: If you hit a button or key (other than G), or move the Control Stick before docking is complete, the operation will be interrupted and the message "DOCKING ABORTED" will appear on the screen. Retrace the previous steps to complete docking.
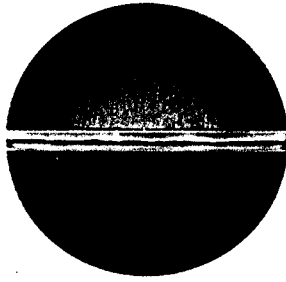
Approach the starbase at a reduced speed (1,2, or 3) for best results in docking.
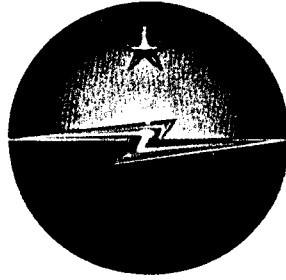
NOVICE   PILOT

WARRIOR   COMMANDER

At the conclusion of each mission your rating is calculated automatically by the computer. The rating is established by the following five factors:

1. Mission level (NOVICE, PILOT, WARRIOR, COMMANDER).

2. Number of enemy destroyed.

3. Amount of energy used.

4. Length of time taken to complete mission.

5. Number of starbases destroyed (by enemy).

These five factors are worked into the following formula to establish a rating:

$$M + 6 \text{ (\# of enemy destroyed)} - \frac{\text{energy used}}{100} -$$

$$\frac{\text{length of time taken}}{100} - 18 \text{ (\# of starbases destroyed by the enemy)}$$

$$- 3 \text{ (\# of starbases destroyed by you)}$$

VALUES FOR M

Mission Level	Bonus for Mission Completed	Mission Aborted	Penalty for Starship Destroyed
NOVICE	M = 80	M = 60	M = 40
PILOT	M = 76	M = 60	M = 50
WARRIOR	M = 60	M = 50	M = 40
COMMANDER	M = 111	M = 100	M = 90

Your rating is displayed by rank and class. The bottom rank is **ROOKIE**, the top rank is **STAR COMMANDER**, with several others in between (see below). The classes are 1 through 5, with 1 being the highest and 5 being the lowest. The classes divide each rank into five equal parts.

RATING	MISSION SCORE
ROOKIE	48-79
NOVICE	80-111
ENSIGN	112-143
PILOT	144-175
ACE	176-191
LIEUTENANT	192-207
WARRIOR	208-223
CAPTAIN	224-239
COMMANDER	240-271
STAR COMMANDER	272-303

If you fail to score at least 48 points during a mission you will receive a gag ranking, such as "**GARBAGE SCOW CAPTAIN**," or "**GALACTIC COOK**." If you receive such a ranking repeatedly, you are playing a mission level which is too advanced for your skills. Switch to a lower skill level.

VIII. SKILL DISCUSSION

Simplified NOVICE Instructions

1. If necessary, use the **SELECT** button to bring up the **NOVICE** mission on the screen.

2. Press **START**.

3. Press **S** and **C** on the keyboard (shields up and Computer Attack Display on).

4. Press key **G** to display the **Galactic Chart**.
    Using the Control Stick, move the hyperwarp destination dot to an enemy sector.

5. Press key **F** (**front view**), then engage **hyperwarp** by pressing key **H**. Your starship will hyperwarp automatically to the desired sector.

6. To find enemy targets in a sector:

    • Center the target marker in the middle of the Attack Computer Display.

    • Note that $\theta = +0$, and $\Phi = +0$, and R = a low + number when the enemy targets appear on the screen.

7. Using you photon torpedoes, destroy all enemy targets in the sector.

8. Move to another enemy sector and repeat the same procedure. It is to your advantage to go after enemy targets that are closest to, or threatening your starbases, first. Remember, if a starbase is surrounded, you have only 100 centons (one minute) to clear a sector adjacent to the starbase to save it.

Keep an eye on the **Control Panel** indicators and the **Galactic Chart** so that you are aware of the status of the mission at all times. There are 3 starbases and 27 enemy starships at the **NOVICE** level.

The mission ends when: (1) You destroy all enemy targets, or (2) you run out of energy, or (3) your starship is destroyed.

NOTE: No damage can be inflicted on your starship in a **NOVICE** mission.

PILOT Mission

There are 4 starbases and 36 enemy starships at the **PILOT** skill level. You must steer your ship during hyperwarp, which you will find adds a more difficult perspective to your flight. Your starship will be susceptible to enemy attacks, and you will find the mission more difficult in general.

NOTE: Steering during hyperwarp is necessary for **PILOT**, **WARRIOR**, and **COMMANDER** missions. Also, your starship may receive damage during these mission skill levels.

WARRIOR Mission

You will find this skill level even more difficult to survive. There are 5 starbases and 45 enemy starships to contend with during the **WARRIOR** mission. You must move quickly since enemy attacks will be frequent and generally more devastating.

COMMANDER Mission

This skill level is reserved for the most experienced **STAR RAIDERS**. There are 6 starbases and 54 enemy starships at the **COMMANDER** level. Just getting through the mission in one piece will be an accomplishment. There will be no time for hesitation and you will be under constant attack. Make sure you're capable of handling the most hazardous circumstances before you take on the **COMMANDER** mission.

IX. SURVIVAL TACTICS

Here are some helpful tactics that you may employ during a mission which will increase your chances for survival, as well as help you gain a higher rating. After you become an experienced **STAR RAIDER** you may discover some of your own.

Whenever your shields are destroyed, the next enemy photon hit your starship takes will destroy you. One way to avoid being destroyed in such a manner is to immediately hyperwarp out of the sector by hitting the **H** key. This can be done without checking the **Galactic Chart**. After you have safely hyperwarped away from the sector in which you were under attack, check the **Galactic Chart** to locate a starbase where you can stop for repairs (new shields).

In the situation just described, it is possible to take the tactic even one step further. Your shields are destroyed during an enemy attack. You know from memory that a starbase is located in a sector directly adjacent to your starship. Hit the **H** key (without checking the **Galactic Chart**), and move the target marker to the edge of whichever cross hair points in the direction of the starbase sector.

For example, if the starbase is located in the sector to the right, move the target marker to the edge of the right cross hair, as shown in the diagram.

If your steering is accurate (**NOVICE** mission level excluded), you will successfully hyperwarp to the starbase sector. In doing so without checking the **Galactic Chart**, you will have saved time, energy, and possibly the mission.

In a situation where your energy supply may run out before you establish orbit with a starbase, hit the **S** key to deactivate your shields temporarily (after you are out of enemy range). This will save you two units of energy per second while docking at the starbase. Then, with a new supply of energy you can put your shields up again and continue the mission.

If a starbase is surrounded and it appears you cannot save it, it is better to destroy the starbase than to allow it to fall into enemy hands (see **Section VII. RATING**). Additionally, two more Zylon starships will be created out of the debris, if you allow the enemy to destroy the starbase.

If your computer is destroyed, the cross hairs will disappear from the front view display. When this occurs it becomes extremely difficult to make hyperjumps. When you press **H** to hyperwarp remember the initial position of the hyperwarp target and try to keep it steady around that point on the screen.

When your Sub-Space Radio is destroyed early in a mission it is best to dock immediately. Otherwise, you may find that several starbases have been destroyed without your knowledge.

When your engines are destroyed, your speed will be very slow. You can however, use the hyperwarp engines to move within a sector. Abort the hyperjump when you are close to the target.

NOTE: It takes 100 units of energy to abort a jump.

X. TECHNICAL INFORMATION

UNITS

Time in centons/100 centons = 1 centor

Distance in metrons/100 metrons = 1 centron

Velocity is measured in metrons per second (V = metrons/sec)

Acceleration is measured in metrons per second^2 (A = metrons/sec^2)

Angles are measured in gradons (0-99)

Energy is measured in mergs