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* STAR RAIDERS II *
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Design by

Chris J. Horseman

and

Aric J. Wilmunder

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INTRODUCTION

You are the Captain of the Atarian Flagship Ares, your orders are to destroy all Zylon ships in your path. This particular mission, however, will be different from the first. The war between the Atarian Federation and the Zylon Star Empire has escalated and Federation Statisticians have determined that the Zylons are preparing for one last major offensive.

Armed with their newest weapon, the dreaded 'Planet Crusher', a battlestar capable of destroying an entire planetary system, the Zylon attack force is headed towards Terra, third planet of the Sol system, and homeworld of the Atarian Federation.

You must find the 'Planet Crusher' and destroy it before it locates and destroys Terra. Time is critical, for every centon that you waste, the evil Zylons are building new bases and becoming more difficult to conquer.

GAME ELEMENTS

- 1) Flying ship
 - Forward view
 - Aft view
 - Hunting Zylons
 - Fighting Zylons
 - Flying over planet
 - Flying down Trench
- 2) Controlling ship through Hyperwarp
- 3) Locking ship onto Zylon planet in solar system/Terra
- 4) Destroying Force Shield Generators on planet
- 5) Galactic Chart strategy
- 6) Damage Control and Energy Management

SHIP CONTROL

Primary ship control will be accomplished through the use of a Joystick or Trak-Ball. The Option key will select between Left handed, Right handed, and Trak-Ball. The controller will be used to change the ships position in space, move about the Galactic Chart, Select planets when entering a solar system, and choosing energy consumption on the Damage Control screen.

Flying of the ship will be exactly the same as SRI although some changes may be necessary for the Aft view during certain sequences. We may simply strip this portion of code from SRI as this will give us a sound base for further development. If this code is used, it will be necessary to have a complete understanding of the approach to spacial coordinates used by the original author.

With respect to other types of controllers, we may want the additional feature of ship control via the Touch Tablet. It may or may not be possible to add the additional code, but Marketing would love another sales point for the Tablets.

The Trak-Ball may also require additional code, but the interface must be studied before the final plans can be made.

OPTION KEYS BEFORE GAME

OPTION	Right/Left hand, Trak-Ball Touch Tablet?
SELECT	Training, Novice, Pilot, Warrior, Commander, and Star Commander Mission
START	Begin game

KEYBOARD CONTROL KEYS

0-9	Engines during interplanetary travel
A	Aft view
F	Forward view
G	Galactic Chart
H	Hyperwarp
P	Pause game
M	Mission Abort

ALTERNATE APPROACH

Computer Tracking system is always on. In order to Hyperwarp, simply aim your ship at your current system's Sun. We may want to have an Emergency Auto Escape to a friendly system if things get out of hand.

THE ENEMY

In SRI we were confronted by three different types of enemies; Fighters, Cruisers, and Basestars. In SRII, it would be desirable to have at least three 'space oriented' enemy ships. These ships would be fought ala the Zylons in SRI. These ships should have different strengths and perhaps different attack patterns.

In SRII we may want to have other enemies represented by Bunkers on the planet surface. After destroying the ships you encounter around a planet, you must then destroy the ground forces by flying over the surface of the planet. This may be a little bit too much for a 32K cart.

The final enemy will be the 'Planet Crusher' that can only be destroyed by a combination of defeating the perimeter defense (the fighters in space), the shield system (hot spots on the planet), Bunkers (during fly-over), and finally launching a Nova Bomb into the Thermal Exhaust Port. This should create enough game for even the most avid Star Raiders fan.

The Planet Crusher will travel between systems stomping on rebel planets and destroying Federation Outposts. Destroying a planet requires the entire force of the Planet Crusher making it incapable of planetary movement until its systems are recharged.

FEDERATION WEAPONS

The primary weapon used by each ship will be the Photon Torpedoes used to destroy ships in space. These will be the same as those used in SRI or only slightly modified. One such change might be having four Photon Tubes and the Photons would be capable of a rapid fire mode when the trigger is held down.

The secondary weapon will be the Thermo-Detonator tipped bombs used when orbiting a planet in order to destroy the Shield Generators on the planet surface. Use of these weapons should result in a flash like an atomic weapon viewed from space. Targeting of this weapon will be through the use of cross hairs and there will be a delay between launching and the explosion on the planet surface dependent on the distance from the planet. The pilot must be able to predict the location of the Field Generators on the planet surface as the planet rotates.

The third weapon will be used against the Bunkers on the planet surface. I would like to have a nice laser effect here ala Star Wars, but if this cannot be done, the Photon system may be used.

Finally we need a system for launching the Nova Bombs. This may involve a fixed set of cross hairs forcing the player to aim by controlling his craft down the Trench. This will be made more difficult by the Zylons who will be shooting at us from behind.

By fixing the cross hairs, we can use a canned sequence of a Nova Bomb entering the Exhaust Port rather than having to design a system to generate the effect. We may also want to create a canned explosion of the planet disintegrating.

Weapon systems should engage automatically but when they do, a message should be displayed on the text line informing the pilot.

If a player is desperate and cannot return to Terra for lack of energy or time, he may be able to destroy the Planet Crusher by flying himself into the exhaust port and self-destructing his ship at the center of the battlestar. This would give the player points for saving the Federation but not for returning alive.

FEDERATION DEFENSE

Your primary defense will be your Shield System. The Shield will be responsible for nullifying as much of the enemy's fire as possible. Shield strength will be indicated by a bar graph at the bottom of the forward and aft displays.

Shield strength should be an indication of the percentage of an attacker's blow your ship can absorb. After a hit, the percentage will drop and it will take time to recharge the shield system. Skill level should determine the rate at which the Shield system will recharge.

If you take a hit while your Shield is recharging, your damage will depend on the percentage of shield strength that you currently have. Which system or systems take damage will be randomly chosen, or all systems may take damage during a hit. When a system passes 75% damage, a warning message should be displayed to the player.

Your ship will always require a certain % of energy to be devoted to Shields (say 5%). This % will cover most collisions from Asteroids and other space debris. The rest of the energy allocated to Shields will be used 'charging' the system before battle. When entering an enemy sector, Shields would automatically engage. The circles representing the Shields on the Damage Control screen would become solid while circling the ship (ala Star Trek II). We would also want a beeping sound and a message to indicate Shields Activated.

DAMAGE CONTROL

During game play, various systems aboard ship will sustain damage. In SRI the damageable systems were: Photons, Engines, Shield, Computer, Long Range Scan, and Sub-space radio.

We will probably want to include most of these systems with the exception of Long Range Scan. This may be replaced by a Solar System Approach Computer. We may want to include a Nova Bomb system as well as others deemed necessary.

One approach to displaying damage would be to use Icons accompanied with bar graphs to show the percentage of damage a system has sustained. Current discussion involves having a graphics display showing the entire ship and allowing the pilot to effect repairs via a Damage Control Computer.

Damage can be repaired one of two ways.

- a) Time heals all wounds
- b) Either return to Terra for complete repairs or find a Starbase for accelerated repairs

The player will have to decide when a system has reached a critical point and return to a Starbase or Terra is necessary.

ENERGY MANAGEMENT

This will be a completely new but extremely important part of the game. Using a separate screen only slightly different from the Damage Control screen, the Pilot will be able to customize his ship for different situations. This will be an important skill to have on the more difficult missions.

Energy resources may be split between Weapons, Shields, and Engines. With this system, an accomplished pilot would be able to customize his ship into a Scout (all engines), a Destroyer (all weapons), or a Heavy Cruiser (a mix of all systems). Through careful management and planning, the Pilot should be able to take advantage of his enemy's weakness and improve his chance for survival.

One possibility is that systems could only be modified when docked or at a Starbase. Another might include minor changes that can be made during flight but require time. This might involve bar graphs of both desired levels and current levels that systems are at. A Novice player should have his system set up for him at the start.

ZYLON STRATEGY

The 'Planet Crusher' will be roaming about the stars trying to locate the Terran Homeworld. This may create some Stratego-like strategy where the opponent will not know the location of his enemy's base.

The Zylons must act with some intelligence giving the Player the feeling that his opponent is worthy. This must be projected in both the strategy of the Galactic Chart, as well as Zylon ship strategy during dog-fight sequences.

RATING/SCORE

Factors

1. Mission Level
2. # of kills
3. Amount of Energy consumed
4. Amount of Time used
5. Damage by Zylons on you
6. # of Nova Bombs used
7. # of Outposts destroyed
8. Terra lost
9. Planet Crusher destroyed
10. Your condition (live/dead)
11. Mission aborted?

For higher skill levels, we may want to use a sliding scale for increasing points.

SKILL LEVELS

SRII like its predecessor will be a game played at many levels. The Novice player should receive satisfaction from the game, but there must be enough complexity and area for growth that an advanced player will need to work. This may be accomplished by creating a number of skills necessary to travel up the ladder of skill.

In SRI, the pilot is forced to learn first how to operate all of the systems, and then those systems are made even more complex. A skilled pilot will also suffer from increased fragility of the various systems necessary to control his ship. SRII should use this feature without much modification.

Assuming a greater strategic element in SRII, different levels of Zylon strategy should be developed for both Galactic movement as well as during the Attack sequence. Other features at higher levels might include faster Zylon speed, more powerful Zylons, faster spinning planets, more Zylons, greater warp distances between planets, better marksmanship on the part of the Zylons, as well as increased frequency of movement by the Zylons on the Galactic Chart.

The use of skill levels should be to increase the difficulty of winning while also increasing the potential to score more points.

We may want to include a Training Mission for the inexperienced Pilot. This program would allow a new pilot to select any of the sub-games to practice on. This section of code might also be tied to the Attract Mode that shows all of the different game parts.

VISUALS

The game will involve a number of visual effects some based on SRI and many new ones.

These will include:

Forward view:	Front view from ship
Aft view:	Same as front except reversed
Galactic Chart:	Shows location of Bases, Sol, Enemy
Enemy Ships:	3D ships in space
Terra:	Establish orbit around a planet
Enemy world:	Destroy Zylon Shield Generators
Terrain Flyover:	Destroy Zylon Bunkers on planet
Trench:	Fly down trench to Exhaust Port
Solar System:	Exit Hyperwarp and choose planet
Explosions:	Blowing up Zylons, Bunkers, Battlestar

MUSIC AND SOUND EFFECTS

It would be nice to include a musical theme to be played after the final Battlestar explosion. Study of Star Wars and other John Williams works may be useful

General bells and whistles for message systems. Screeching sounds or some sound for Zylons would be nice as well as Photon, and explosion sounds. We may want to use some sound for the targeting device for the Exhaust Port distance gauge.

ATTRACT MODE

The Attract mode should give the viewer a sample of all of the displays as well as a simple strategy session. This would include choosing a planetary system from the Galactic Chart, entering Hyperwarp, choose a rotating planet, approach the planet, shoot Zylons, and blow up a Zylon Base. If this is not possible, then simply a sample of display screens would suffice.

This should be like seeing the 'coming attractions' at a movie theatre. Giving a hint as to what the game is about, but not giving the entire plot away.

One idea is that if the controller is moved during the Attract Mode, we would allow the user to test fly the ship. This would be an added attraction to the game but it would be nice for in-store demos.

STAR RAIDERS II MANUAL

There are many ways to approach the manual. One would be as a document given to pilots during their final briefing before leaving Terra. This would include photos and other documents about both their ships as well as those of the Zylon forces. Other documents would be a rundown of information known about the Zylon Battlestar as well as a large more detailed version of the Galactic Chart.

We can explain the need for full notes regarding the Federation ship by saying that it has recently undergone repairs after damage during some specified battle with the Zylons. We might also include a calendar of recent battles between us and the Zylons including ships lost and sectors secured.

More flavor may be added to the manual by sealing it with an official Atarian Federation Seal and giving directions for its destruction after initial reading.

Most likely, the manual will be left to others.

MESSAGES TO THE PILOT

One more SRI feature that we will want to incorporate is the upper screen Text Line. We will also, like SRI, want the Text Line to temporarily replace part of the display screen. The technique is simple enough and the visual effect is quite pleasing. Information passed on the display line should include:

- Title and Copyright Notices
- Response to Select/Option Keys
- Important Damage Control messages
- Sub-Space messages
- Orbit condition around Terra
- Closing messages
- Hyperwarp Engaged
- Solar System Scan
- Systems Engaged/Disengaged
- Red Alert
- Starbase Surrounded
- What's Wrong
- Mission Aborted and reason
- etc.

This same line should be included on both the Galactic Chart as well as the Damage Control screen in order that the Pilot is aware of relevant conditions at all times.

One possibility might be for the Pilot to receive messages from the evil Zylon Imperious Leader. These would require an intelligent routine to generate messages so that the Pilot is not swamped with the same messages every game.

GAME ELEMENTS (DETAILED)

BLASTING ZYLONS
HYPERWARP
LOCKING SHIP ONTO PLANET
SHOOTING THE FIELD GENERATORS
PLANET FLY-OVER
TRENCH SEQUENCE
ORBITING TERRA FOR REFUELING
GALACTIC CHART
MONITOR DAMAGE CONTROL
HUNTING ZYLON SHIPS
FORWARD VS. AFT VIEWING
MONITOR ENERGY DRAIN

BLASTING ZYLONS

Blasting Zylons will be the principal activity of the player. Using the 3D vector graphics, we should be able to display two Zylon ships zooming around, as well as more ships in the distance using Players.

When a Zylon is hit, we may want to see the explosion made by the ship ala the tanks in Battlezone. In the case of the TIE fighters it would be very satisfying to have the 'wings' blow off in different directions.

Points will be scored here depending on the type of Zylon destroyed. Points may be subtracted for each Photon torpedo used or else it should be tied to Energy Drain ala SRI

HYPERWARP

In SRI, part of the attraction to the game was the learning of various skills as you progress. First you learn what various keys do and later you learn to take advantage of those systems in order to improve your score.

One of the skills that you must learn is controlling your ship through Hyperwarp. Though this is a simple task, it is an integral part of the game.

In SRII, we will want to include either the Hyperwarp feature from SRI, or else a similar feature that must be learned before entering the higher skill levels. We may want an even harder level of Hyperwarp (spinning targets) in order to attract those who have perfected their skill in SRI Commander level.

The Score will be affected here in the amount of time used. A successful Hyperwarp will save the player time, so no points should be awarded for a successful jump.

LOCKING SHIP ONTO PLANET

A new game element, when exiting Hyperwarp into a solar system, we will watch as the solar system zooms in. The planets will be revolving around their sun at an accelerated rate (due to time shift in Hyperwarp) and we will see them slow down into their normal paths.

The pilot's task will be to determine which planet is occupied by the Zylons, lock into that planet using a target cursor, and then zoom into that planet and establish a standard orbit around it. Factors adding to the difficulty of this task will include speed of the solar system, the speed at which the zoom occurs, as well as the orbital radius dependent on a planet's mass.

Control for locking into planets will be a target moving in a circular path. Joystick changes orbital radius and orbital speed to match the desired planet. The cursor will flash when the planet is locked in.

Again, the Score here will be dependent on the amount of time used. If a Pilot is inaccurate, time will be wasted making up distance with sub-light engines.

SHOOTING THE FIELD GENERATORS

This sequence will follow the destruction of a planet's preliminary line of defense (the ships surrounding a planet.) When this is done, the pilot will now have a specific amount of time to destroy the targets on the planet surface before he can make his final approach for his fly-over.

What may occur is that after the final ship is destroyed, the Attack Computer will automatically lock in on the planet and begin descending to the surface. The pilot must locate and destroy all of the Force Shield Generators or the descent must be aborted.

The weapons used on the Shield Generators will be similar to Nuclear Bombs and they should provide a satisfying explosion when they impact on the surface.

A specific score should be given for each Generator destroyed and accuracy will be displayed in the Time column.

PLANET FLY-OVER

After successfully destroying the Shield Generators you will now descend onto the planet surface. When orbiting the planet, the computer would display two colors of targets. First there would be the Generators, and secondly there would be the Zylon Bunkers. After descending to the planet, the Attack computer would give directions to the nearest Bunker to your ship. After the first Bunker is destroyed, the computer would then direct you on to any other Bunkers that exist. Time will be critical here for if too much is wasted while

searching for Bunkers or if many passes are needed in order to destroy them, the Bunkers will become harder to destroy.

To make matters worse, the Bunkers will be shooting at the pilot while he is trying to destroy them. The Bunkers may be using Photon Torpedoes or some form of Guided Missile. The Pilot will be required to either dodge these or receive damage to his ship.

This might be the most action-packed sequence as well as the most unique. This might be played like a first person Scramble with rockets being fired vertically and fuel/supply Bunkers to be destroyed on the planet surface. Unfortunately, this is the only sequence that has not been experimented with. We do not know how this will work visually nor do we know the limits of the software behind it.

Points should be awarded for each Photon or Guided Missile destroyed as well as each Bunker that is ruined.

TRENCH SEQUENCE

This is the climax of the game and must be done with great care and thought.

The Trench is a solid walled real-time flight down a Star Wars trench. During this sequence, your goal is to survive the Trench defenses and release your Nova Bomb when you reach the Thermal Exhaust Port. Markers on the display will indicate distance to the Port and a tone will occur when the Nova Bombs should be released.

Sound effects should be used to indicate the distance from the Port and when the Nova Bomb is successfully launched and the pilot pulls out, a timer may begin clicking away the centons before the explosion.

During the Trench flight, we will want to have the shadows of the Zylons appear on the floor of the Trench as well as our own.

Lots of points will be awarded for the complete destruction of the Planet Crusher. The number of points should be a fraction of the points given for destroying the rest of the Zylon Fleet.

ORBITING TERRA FOR REFUELING

When one is in need of new Nova Bombs or just refueling and repairs, they must return to Terra for supplies. After orbit is established, the Supply Shuttle from SRI will rise from the planet and you will have to dock with it.

If you get the urge to fire on the Supply Shuttle, we will want some appropriately nasty fate for the pilot, i.e., a big nasty ship that comes out and destroys him...

Another approach would be to warn the Pilot after he destroys his first Shuttle. This of course would tempt him to find out what would occur after destroying a second. When a second Shuttle is destroyed, ship controls should lock up and a message from the Federation should mention how this ship's record will be surrounded forever with shame. Seconds later, a beam should flash out from the planet surface and the Pilot will watch his Shield Energy drop to zero and complete ship destruction will follow immediately.

No points will be awarded for successful refueling.

GALACTIC CHART

Strategy here will depend upon the design of the chart, but there should be some tricks necessary to take advantage of this system.

There will be no points awarded here. Points will be reflected in the game later. Time will be used depending on the distance traveled.

MONITOR DAMAGE CONTROL

This will mainly involve keeping your eye on ship damage messages and decide when to skedaddle back to a Starbase. Proper monitoring of Damage Control systems will be critical in more advanced games. The control of the systems may also increase in difficulty as skill levels rise.

No points here either except those through better games and less time wasted.

HUNTING ZYLON SHIPS

Like SRI, we should have some sort of Attack Computer used to tell us the whereabouts of our Zylon friends as well as the location of their Bunkers on the planet surfaces. The Computer will also be critical during Docking procedures with Shuttles and it may be useful when trying to locate the Exhaust Port.

Zylon ships will spend most of their time around Zylon Bases, but on occasion you may run into a Scout ship in one of the systems near the Zylon influence. Scout ships may simply try to run to the next system in order to warn other Zylons so it is to your advantage to chase after these ships and destroy them as soon as possible.

Others would include Zylon Battle Cruisers. These will be more difficult to destroy, and extreme care must be taken when you engage one.

FORWARD VS. AFT VIEWING

A required skill will be the mastery of the Aft View. Like SRI, the controls will be reversed when the Aft view is being displayed. We may not be able to display an Aft view during certain sequences (the Trench, Flyover) so during these times, the computer will shift into the Forward view while sending a message to the pilot.

Aft weapons might be slightly less powerful than Forward ones. Also, there might be only two aft torpedo tubes vs. four forward.

MONITOR ENERGY DRAIN

Like Damage Control, a good pilot must understand the drain of energy that various systems use around his ship. The best pilots must have an advantage in this knowledge allowing them to control their ships better giving them better scores.

This may be the same as Damage Control.

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