

# **SUPREME CHALLENGE**

(SEE TAPE OR DISC LABELS FOR LOADING INSTRUCTIONS)

**THE SENTINEL**

**TETRIS**

**STARGLIDER**

**ELITE**

**ACE 2**

If you encounter any problems in loading  
make sure the heads on your tape-deck are clean  
and the azimuth head alignment is okay.  
In cases of difficulty consult your dealer.

#### **WARNING**

DO NOT LEAVE COMPUTER CASSETTES NEAR ELECTRICAL OR MAGNETIC OBJECTS, E.G. TV, TELEPHONE,  
POWER PACKS, CALCULATORS ETC. AS THIS CAN CORRUPT THE COMPUTER PROGRAMME.

## SUPREME CHALLENGE

### THE SENTINEL

The object of the game is to absorb the Sentinel and replace him as ruler of the landscape. Once achieved, you may hyperspace into a new world to begin the struggle afresh.

Once you have loaded the game, the title screen will be displayed. Press any key and you will be asked to input a landscape number 0000 to 9999.

After you have entered the landscape number and hit return, you will be prompted for an 8 digit secret entry code unless you chose landscape 0000 which does not require an entry code.

Selected landscape which shows the relative positions of the Sentinel (the one standing on the tower) and the sentries, if any. Pressing any key will take you onto the landscape's surface. The Sentinel and sentries will be inactive until you expend or absorb energy. This allows you to have a look around and plan your assault on the Sentinel.

Once activated, the Sentinel and sentries slowly rotate, scanning the landscape for squares which contain more than 1 unit of energy. If they can clearly see such a square, the Sentinel/sentry will reduce the energy to 1 unit by absorbing 1 unit at a time and creating a tree randomly on the landscape. Therefore a robot becomes a boulder and a boulder becomes a tree.

You absorb things and create things by turning on your sights and centering them on the square surface below the object to be absorbed/created. Boulders, however, act as an extension of the square surface, and sights should be aimed at the side of the boulder. Boulders can be stacked and have things placed on top of them. The amount of energy you have is shown at the top left hand of the screen in the form of Robots. Boulders and tree icons. A coloured (non-blue) robot is worth 15 energy units. To move around the landscape, you must create a robot and then, with the sights still on, press the transfer key. You will now be in the new robot facing your old robot which you may absorb.

The indicator on the top right of the screen is the scan warning. If a Sentinel/sentry spots you, this indicator will be filled with specks. You have about 5 seconds to move out of view before your energy is drained 1 point at a time. Once all of your energy is drained, then you are absorbed and the game ends. The total amount of energy in a landscape remains constant, so if a unit of your energy is absorbed, a tree will be randomly placed on the landscape.

If the Scan warning indicator is only half filled with specks, this means that you are standing on: so it cannot absorb your energy. In this situation, it looks for a tree near to you and transforms it into a Meanie.

The "Meanies" job is to flush you out, which it does by forcing you to Hyperspace. The Meanie rotates quickly, making a low clicking sound, until it can see you. You will then Hyperspace to a new location.

Hyperspace uses 3 units of energy, because it creates a new robot in a random position and automatically transfers you to it, leaving your old robot behind. You are likely to end up at the same height or lower, but never on your original square. If you hyperspace with less than three units of energy, you are destroyed. Once the Sentinel has been absorbed, you can no longer absorb energy, although you can still create objects and transfer to other robots.

Once you Hyperspace, while standing on the Sentinels tower, you will be given the 8 digit entry code for a new landscape. The landscape that you are given = Present landscape number + Energy left after the Hyperspace.

#### KEY SUMMARY

	AMSTRAD	SPEC	C64
Pan left	S	S	S
Pan right	D	D	D
U-turn	U	U	U
Hyperspace	H	H	H
Create tree	T	T	T

Create robot	R	R	R
Create Boulder	B	B	B
Sights on/off	SPACE	SPACE	SPACE
Pan up	L	K	L
Pan down	</	M	<
Absorb	A	A	A
Transfer	T	T	Q
Increase volume			8
Decrease volume			7
Quit	1	1	F1
Pause	0	0	CRSR
Unpause	9	9	CRSR

#### ENERGY VALUES

Tree	1	Sentry	4
Boulder	2	Sentinel	4
Robot	3	Meanie	1

### TETRIS

#### GETTING LOADED

After loading select your starting level of difficulty. The higher the number, the greater the rewards, but the harder the task.

#### PLAYING TETRIS

A variety of differently shaped blocks fall, one by one, from the top of the screen, or playfield. You can manipulate these shapes left/right and rotate them before they land at the bottom of the playfield. The idea is to create complete horizontal lines of blocks across the playfield. When one of these unbroken lines is completed it disappears, and any blocks above fall into the now vacant area.

#### OBJECTIVE

The aim is to create as many complete lines as possible. If you leave gaps, the playfield will fill up rapidly, leaving you less room to manoeuvre. Should the pile of blocks reach the top of the screen, the game ends.

The show key displays the shape of the block that will fall after the current block has landed - useful for formulating your optimum strategy.

The rate at which the blocks fall speeds up automatically as your score increases.

#### SPECTRUM AMSTRAD COMMODORE 64

(H) High Score		(Joystick only)
(O) Options		Up - Pause
Space - PlaY		Down - Drop
(J) Joystick		Fire - Rotate
(Q) Quit	1) Show next	
(S) Show next	4) Space Drop	
(I) Left	6) Speed up	
(P) Right	7) Left	
(O) Rotate	8) Rotate	
Space - Drop	9) Right	
(Y) Speed up	Numeric keypad or keys	

### STARGLIDER

#### BACKGROUND

The Planet Novenia was a very civilised place. There had been no military conflicts for many hundreds of years. Such was the extent of the Novenian's peaceful existence. It was no longer necessary for there to be any military forces on the planet.

However, the Novenian race still had an overwhelming fear of invasion by forces from another planet - specifically the Egrons, whose Inner World dominance was now spreading to planets situated in the outer reaches of the galaxy.

After many years of research and public debate, the Novenian people decided not to install any nuclear weapons. Instead they set about devising a project in which the ultimate aim was to build a number of orbiting satellites to protect the planet from invasion by means of a battery of fusion grenade launchers. These satellites were christened the Sentinels, and they seemed to abolish all invasion-paranoia on the planet.

The Sentinels appeared to work. That is, they worked for a few years. Until the stargliders returned.

Stargliders are strange beasts. Fantastic birds which migrate every ten years. Not your normal migration, mind. Stargliders migrate offworld, taking a perilous journey into the depths of the outer galaxy.

The stargliders approached the planet Novenia, as they had done for hundreds of thousands of years before. Only this time, the Sentinels were waiting. They were programmed to destroy any invasion force, and in the "eyes" of the Sentinel control system, the stargliders were indistinguishable from any invading enemy.

The resulting carnage caused a public outcry never before seen in the peaceful Novenian society. Tens of thousands of stargliders were obliterated, and the people wanted to ensure that it would never happen again. The Sentinel control software was rewritten to recognise the shape of the starglider and not take any offensive action against it.

The reprogramming of the Sentinel system was the greatest strategic mistake in Novenian history. The Sentinels had been instructed to ignore the shape of the starglider, but had no concept of size. It was this flaw in the system that led the Egron military regime to develop a fleet of powerful invasion ships which resembled the stargliders, even down to their huge flapping wings.

The Egron invasion force flew straight past the Sentinels, and proceeded to destroy every city on the planets surface, without remorse. The Novenians were totally defenseless, and as the nuclear winter drew in, the remnants of Novenian society surrendered to the Egron commander. Hermann Kruid, as his occupation force rolled out of the giant StarGlider craft.

The inhabitants of Candrillo base on the Novenian moon were dumb-struck. It was they who were responsible for the maintenance of the Sentinels, and they felt an overwhelming sense of guilt as they stared through the telescope at the devastation on the planet below. Katra and Jaysan felt totally helpless. Katra was in charge Sentinel maintenance, and her assistant, Jaysan, was her chief engineer.

After two days of frustration and deliberation, Katra hit upon an idea. In one of the old hangars was an AGAV - Airborne Ground Attack Vehicle - a remnant from Novenian Air Force, and scheduled to be restored and exhibited in a museum. They worked on the AGAV until it was in airworthy condition. Modern laser cannons were added to its fuselage, and laser-cell refuelling nozzles was adapted from the design used on the Sentinels, so that the AGAV could refuel at any of the four major Sentinel repair depots on the planet surface.

Once all the Egron ground and air forces had been positioned around the planet, all but one of the StarGlider craft set course for home, leaving the smallest, but most powerful craft,

StarGlider One - the command ship of Hermann Druud, in control. With only one of the theoretically indestructible StarGliders left to deal with. Jaysan and Katra decide that it was time to cause as much havoc on the planet as was possible with one veteran aircraft....

## INTRODUCTION

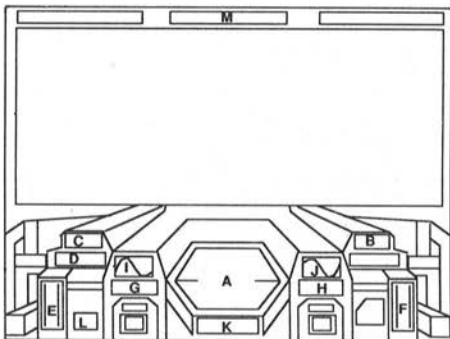
The game starts shortly after the AGAV re-enters the Novenian atmosphere and dives down to surface-level. You have full shields, laser cells, stored plasma energy, and one Proton missile. Katra has located a Sentinel repair depot immediately behind you.

Can you liberate Novenia from the tyrannical Egron Empire....?

## THE AGAV INSTRUMENT PANEL

Your AGAV has one of the most comprehensive computer control systems ever developed for a fighter craft. This means that the pilot only has to concentrate on the vital aspects of flying, such as navigation, combat, and docking at repair stations for fuel and extra weaponry.

The instrument Panel consists of the following major instruments:-



### A - LOCAL AREA SCANNER

This hexagonal screen displays the position of all objects within the AGAV'S range. The scanner can detect density and movement extremely accurately, to the extent of sensing the colours of each building, vehicle or aircraft.

### B - ENERGY LEVEL

This instrument shows a constant indication of how much energy the AGAV has stored for its Plasma Drive Unit. It is advisable to always keep the energy level above 15%.

### C - SHIELD STATUS

The Molecular Neutralising Force-Shields should NEVER be allowed to drop below 10% under any circumstances. Shields are replenished when the craft is repaired at a maintenance silo. The shields are at their weakest around the undercarriage, therefore it is important that you never allow the AGAV to scrape along the ground during flight.

## SUPREME CHALLENGE

### D - LASER CELL STATUS

All four Sapphire II laser units are fed from the laser cell. If it drains completely, your craft will be unable to fire. The laser cell can be re-fuelled at any airbase or maintenance silo equipped with a PosiLok recharger.

### E - ALTITUDE METER

The altitude meter shows your current height. If it gets below a safe level (usually 5%), the meter will flash rapidly and emit a sonic warning. You are reminded that it is an offence to fly low in a suburban area except in times of military emergency, unless you have clearance from your Area Commander.

### F - VELOCITY INDICATOR

The velocity indicator displays the current air speed, up to 2550 urads.

### G & H - BANK LEVEL INDICATORS

These twin indicators (one indicator is affixed to each wing-tip) display the level at which the AGAV is banking. The AGAV can bank to 45 degrees unladen, although cameras or missiles will alter the maximum banking angle. Both indicators should always display the same bank factor, unless one of the wings is severely damaged.

### I & J - PLASMA DRIVE STATUS DISPLAY

These waveform display units indicate various internal values of the Plasma Drive. As an AGAV pilot, you need not worry about these unless they stop completely, or start moving in a reverse direction during flight.

### K - SECTOR DISPLAY

The Novenian landscape is divided into 10,000 sectors, on a 100 x 100 matrix. The sector indicator will show the current X and Y position ranging in value between 00 and 99.

### L - MISSILE INDICATOR

The missile indicator shows the number of missiles currently on board. The maximum number of missiles allowed at any one time is two.

### M - HEADING DISPLAY

This instrument displays the heading of the AGAV in relation to the Irralya Star, in accordance to the north, south, east, west convention.

## FLYING THE AGAV

### Taking off

Once all safety checks have been completed, you may take off using the following procedure:

1. Pull Back on the control device to increase altitude.
2. Increase thrust and accelerate forwards.

The AGAV has a top speed of 2550 urads, enabling it to outrun any sub light-speed Alliance craft, as well as all Egron military craft currently in service. It is quite safe to fly at full speed, as the computer will monitor the plasma drive at all times, and modify the neutron stabilizer automatically to ensure the plasma converter is always operating within its safe range.

## FLIGHT MANOEUVRES

If you have not had full training in one of Draziv Industries comprehensive flight simulators, you should familiarise yourself with the more frequent manoeuvres required by an AGAV pilot. One of the most important manoeuvres when attacking land vehicles and escaping reprisal from a nearby enemy is accelerating, banking and gaining altitude in ne smooth operation. Likewise, when at high altitudes, it is essential that you are able to decelerate, change direction downwards, and

accelerate towards an attacking enemy target as quickly as possible.

When flying at low speeds, the bank factor of the AGAV is so acute that you will be able to turn by 180 degrees with extreme ease. Even at maximum thrust, the turning circle of the craft is very tight. The quickest way to turn by 180 degrees is to decelerate to standstill, bank left or right to the AGAV's maximum bank factor, and accelerate quickly away.

**WARNING:** During flight testing of the AGAV prototypes in the vast Tranalua desert. It was found that flying at extremely low altitude over an inductive energy powerline resulted in the absorption of small amounts of plasma energy. At the time, this seemed unimportant, but as the mk.1 AGAV's were brought into service in urban areas, where high capacity powerlines were more commonplace, the full size of the problem was realised. Daredevil rookie pilots, trying to prove their aerobic prowess, decided that flying just above the ground at high speed between the twin towers at the beginning of a powerline and following the path until swerving to avoid the apex tower was a great test of skill. This resulted in large amounts of volatile energy being absorbed by the AGAV's energy storage pod, and subsequently overloading the neutron stabilizer and inflicting fatal damage to the plasma drive. Attempts to refuel in this way will result in severe action being taken by both the Novenian airforce, and the Plasma Energy Corporation against all guilty parties.

## WEAPONRY SYSTEMS

The AGAV's main weapon is the Sapphire II quadpulse laser system. The laser is powered from a dedicated laser energy cell situated in the nose-cone of the craft, directly behind the PosiLok refuelling nozzle.

Two laser cannons are situated under each wing of the AGAV, and each group of lasers fire simultaneously.

The AGAV has two laser sight operation modes: fixed sights ensures that the sight is always in the centre of the screen, requiring the AGAV to be directly in line with its target; whereas floating sights allows the sights to move freely about the screen in the direction of the control shoe movement.

The laser fire button has a rapid auto-repeat mechanism, enabling a target to be hit many times a great speed. The Sapphire II has an armour piercing factor of 0.45 - powerful enough to destroy a vehicle with similar armour to an Alliance tank with only six direct hits. The laser cell has a capacity for around 250 full-power laser pulses and can be recharged by a PosiLok station at any Alliance airbase, maintenance depot or silo.

As a desperate measure, and provided your shields are sufficiently intact, it is possible to intercept enemy craft and ram them if no other option is available. For this to be successful, the enemy should have little or no shield or force wall of its own.

## TELEVISION GUIDED MISSILE SYSTEM

The AGAV is fitted with a revolutionary new system: The VidiMon remote-controlled television guided missile system, designed for use against targets which cannot be destroyed using laser cannons.

Using a high-definition video camera, the AGAV pilot is able to transmit pictures directly back to the AGAV while the missile is in flight. An automatic sliding visual display has been incorporated into the craft which monitors the flight of the missile.

The missiles flight is started by pressing the **LAUNCH** button on your keyboard console.

Once the missile has been launched, you can guide it using the normal AGAV flight controls (the AGAV itself will simply hover in its current position under computer control). The plasma drive will only be able to transport the missile for a few seconds, before its store of plasma energy runs out and the missile self-destructs.

#### DOCKING AND MAINTENANCE PROCEDURE

During a flight, if you need to refuel the plasma drive, laser cell, or replenish the shields you should approach the nearest airbase and follow the standard docking procedure. During a state of military emergency, or if the AGAV has been damaged and is in need of immediate attention, you may dock at an Alliance space station repair silo.

The Alliance silos are vast underground chambers with a sloping entrance building at ground level. The entrance hatch to the silo is marked by a laser strobe which is easily detectable by the AGAV's Enhanced Vision System. The silos are used to build and maintain all Alliance space stations and large military air vehicles, but also have facilities available for the AGAV. Not all space stations maintain geostationary orbit, so as they approach the entrance, the silo will rotate to face the space station using the NavSynch system, and then pull it in using its tractor beams. For this reason, the silo may be rotating when you approach it.

#### CURRENT DOCKING PROCEDURE AS FOLLOWS:

1. Approach the silo, and position yourself at the correct altitude for entry. Manual flight into the silo is necessary, since the AGAV is too small to be automatically pulled in using the tractor beams.
2. Slowly guide the AGAV through the doors to the silo. Keep the AGAV central at all times, as hitting the door or a wall could result in major structural damage being inflicted upon your craft.
3. Once inside the silo, your Enhanced Vision System should alter your display so that only relevant sections of the silo are visible.
4. If you need to collect any new equipment, such as a replacement television guided missile, or armaments for special projects (such as sonic bombs, or Mk. 14 proton missiles), the Chief Engineer will deposit the equipment at an AGAV collection point, which is usually situated near the centre of the silo.
5. The silo's internal traction system will pull your AGAV towards the collection point, where an AGRO droid unit will lock it into place on the PosiLok Refuelling Point. When your laser cell has been refuelled, the force shields will be replenished, and any superficial damage will be repaired by the AGRO androids.

#### INTERROGATING THE SILO COMPUTER

The Alliance Information Computers are installed at strategic places in the silo, and provided you have security clearance, you can call up any military or local information that is available to the Alliance using this option.

#### LAUNCHING FROM THE SILO

When the AGAV has been prepared, you will be escorted to the launch pad. To launch from the silo, wait until an AGRO unit has ignited the plasma drive. When the drive reaches full power, press the button on the console marked **LAUNCH FROM SILO**.

Once you have launched from the silo, accelerate slowly

forward, but do not try to increase altitude until you are clear of the silo.

#### AGAV SPECIFICATION

The main features of the AGAV are as follows:-

##### PLASMA DRIVE

The retro-thrust plasma power units are a development of the Mk. 6 neutron fusion-drives which were used to great effect in the single-seater GS20 fighter class craft. They have been substantially redesigned to incorporate a neutron-stabilizer circuit, which has almost completely eliminated the spontaneous explosions occasionally experienced by unfortunate GS20 pilots who flew above plasma storms in the ionosphere, against the advice of their Atmosat data reports.

##### MOLECULAR NEUTRALISING FORCE SHIELD

These are the latest concept in shield technology and have been developed at great cost by the Irata University Molecule Research Unit. The shields work by fusing all unstable molecular structures into an integral part of the shield shell, therefore minimising the destructive force of any solid matter coming into contact with the force shield. The second advance in the shield design is in dealing with laser bolts, by converting laser energy into sound waves. This is a great improvement over the energy-thirsty fission based shields used on all previous Alliance units.

##### LASER CANNONS

The AGAV class craft retain the tried and tested Sapphire II laser system, which has been fitted with a new longer-lasting laser energy cell, using the new PosiLok cell refuelling system now installed at all airbases and outlying service depots. The original duo-pulse unit has been modified to a quadpulse system for the first time to take advantage of these developments.

##### COMPUTER SYSTEM

The AGAV is the first craft to have a ship's computer specifically designed for a single craft. Draziv Industries have worked in conjunction with Imperial Business Machines, to produce the P-CAT (ProtoIntelligence - Communication and TransProcessor). The P-CAT is the pilots main interface with the AGAV, and informs the pilot of the ships status at all times using its inbuilt SynthaVoice circuitry, message projection, and the ergonomically designed control panel instrument displays.

Because the AGAV has been designed as a low-flying attack and reconnaissance craft for use in uncharted landscapes, there is no computer controlled navigation system. The advantage of this decision is that in the event of the enemy gaining control of an airbase, they would be unable to control an AGAV remotely, or follow its exact flightpath.

The P-Cat development team have been assigned to develop the computer control systems for the newly-announced Sentinel Defence Initiative (referred to as the "Sky Wars" program by the media), and will therefore be unable to produce updated versions of the P-CAT-system in the future.

##### TELEVISION GUIDED MISSILE SYSTEM

One of the most important developments in the AGAV program has been the VidiMon system. VidiMon is a remote-controlled television guided missile system, consisting of a high-definition video camera mounted on a Proton missile powered by a miniature Plasma drive unit, a result of 15 years research at the Hibbard Technology Centre.

## SUPREME CHALLENGE

### COMPUTER ENHANCED VISION SYSTEM

The greatest problem encountered by most attack craft in the past has been searching out tanks and armoured vehicles in built-up areas, in order to destroy them. Tanks can easily hide behind buildings or under bridges, and take pot-shots at fighter craft.

The blister canopy of the AGAV is actually part of a complex display system. Rather than looking at the outside world with standard infra-red goggles, the canopy actually intensifies the normal levels of background gamma and x-ray radiation, and enhances the edges of all solid matter to give a stunning translucent display of anything within its visual range, even if objects are behind solid buildings.

The inclusion of the enhanced vision system makes the AGAV the most potent seek-and-destroy craft ever developed for the Alliance.

### SPECTRUM CONTROLS

A - DECREASE ALTITUDE  
Q - INCREASE ALTITUDE  
R - REARVIEW SCANNER  
O - PITCH LEFT  
P - PITCH RIGHT  
L - LAUNCH MISSILE  
X - ACCELERATE  
Z - DECELERATE  
S - LAUNCH SUPER MISSILE  
SPACE BAR - FIRE LASERS  
BREAK - PAUSE

### AGAV FLIGHT CONTROL

To pitch left or right, increase or decrease altitude, and fire lasers, use either the joystick or the keyboard to accelerate and decelerate.

When using One-Hand mode, you may accelerate and decelerate by pressing FIRE combined with pitch up/down.

### COMMODORE 64

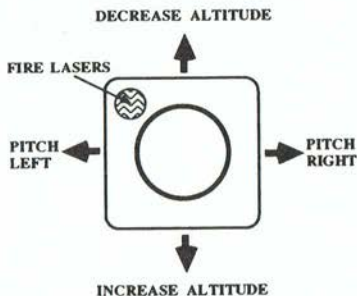
Q - SOUND OFF  
S - SOUND ON  
K - RE-DEFINE KEYS  
L - LAUNCH MISSILE  
I - INTERROGATE COMPUTER WHEN DOCKED  
@ - TOGGLE ONE-HAND MODE  
Z - BANK LEFT  
X - BANK RIGHT  
B - ACCELERATE  
/ - INCREASE ALTITUDE  
] - DECREASE ALTITUDE  
SHIFT - DECELERATE  
RETURN - FIRE LASERS  
CLR HOME - RESUME  
INST DEL - PAUSE  
← - ABORT GAME

### AGAV FLIGHT CONTROL

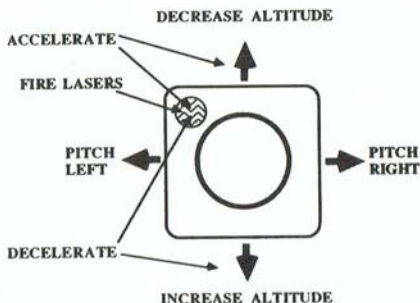
To bank left or right, increase or decrease altitude, and fire lasers, use either the joystick or the keyboard in Normal Mode, and use the keyboard to accelerate and decelerate.

When using One-Hand mode, you may accelerate and decelerate by pressing the FIRE button on the joystick and then pushing the joystick forwards or backwards.

### NORMAL MODE



### ONE HAND MODE



### AMSTRAD

Q - INCREASE ALTITUDE  
A - DECREASE ALTITUDE  
R - REARVIEW SCANNER  
O - BANK LEFT  
P - BANK RIGHT  
L - LAUNCH MISSILE  
Z - DECELERATE  
X - ACCELERATE  
SPACE BAR - FIRE LASERS  
S - LAUNCH SUPERMISSILE  
ESC - PAUSE

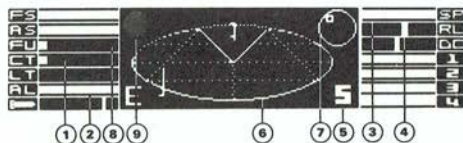
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When using One-Hand mode, you may accelerate and decelerate by pressing FIRE combined with pitch up/down.

## ELITE

## CONSOLE READINGS



- Cabin temperature will increase and the console register will register this when your ship flies too close to the sun.
- Altitude. Your altitude above your destination planet can be crucial. Flying too near its surface will be fatal.
- Forward velocity should be maintained at maximum on planetary approach. Keep it low during space station approach, and minimal for final docking.
- Gyro orient bar indicators show right/left roll and dive/climb status.
- S refers to the space station and indicates that you are on target for it and within its protective range.
- Flight grid scanner. This sophisticated instrument displays a three dimensional view of space in the immediate vicinity of your ship, seen from a point behind and above it. The precise position of any ship within its range can be pinpointed.
- Compass. This instrument first picks up a target planet while it remains out of range of the main flight path scanner. When the planet's space station nearest to you comes within range of it, the compass picks up that instead. When the dot is small, the object is behind you; when large and in the centre of the compass circle, it should be visible through your front viewfinder.
- Fuel level.
- (SPECTRUM AND AMSTRAD ONLY)** Status indicator. If this indicator is green, all is safe. Yellow indicates a possible danger. Red is immediate danger. Flashing red indicates critical danger. Danger could be enemy craft getting too close to a sun etc.

## MAKING FOR YOUR TARGET WORLD

## Hyperspace and related controls

Having left the space station you will be in low orbit above the planet Lave, moving at low velocity. Decrease your velocity to absolute minimum before coding the astrogation console for Hyperspace Jump.

**(Commodore)**

11,13,15,17 During space flight only, f1,f3,f5,and f7 provide access to views all around your ship.

H Use 4 or 5 to display a chart (galactic or local, respectively), and move the smaller cross to choose a larger planet, press f1, then hit H. After a short delay, the hyperjump motors will engage.

**(Spectrum)**

1,2,3,4 During space flight only, 1,2,3 and 4 provide access to views all around your ship.

H Use I or O to display a chart (Galactic or local, respectively), and move the smaller cross to choose a new planet, press 1, then hit H. After a short delay, the hyperjump motors will engage.

**(Amstrad)**

1,2,3,4 During space flight only, 1,2,3, and 4 provide access to views all around your ship.

H Use 5 or 6 to display a chart (Galactic or local, respectively), and move the smaller cross to choose a new planet, press 1, then hit H. After a short delay, the hyperjump motors will engage.

J Even in the safest systems there can be unseen dangers, and you will be well advised to approach orbit space, and the safety of the space station, as quickly as possible. Increase forward velocity to maximum. At this point you can take full advantage of the space-skip facility (J). **(On Spectrum and Amstrad this is the Torus Jump Drive).**

## HYPERDRIVE ACROSS GALAXIES

**(Commodore)**

## CTRL H

The intergalactic hyperdrive is expensive and can be obtained only from planets at Tech level 10 or higher. It can only be used once, and will take you to a system in a whole new galaxy (i.e. a new 5 map). There are 8 such galaxies and making 8 jumps will return you to your starting galaxy. The Inter-Galactic Hyperdrive is engaged by pressing CTRL H.

**(Spectrum and Amstrad)**

## G then H

The intergalactic hyperdrive is expensive and can be obtained only from planets at Tech level 10 or higher. It can only be used once, and will take you to a system in a whole new galaxy (i.e. a new 1 map - Spectrum, a new 5 map - Amstrad). There are 8 such galaxies and making 8 jumps will return you to your starting galaxy. The Inter-Galactic Hyperdrive is engaged by pressing G then H.

## DOCKING PROCEDURE

Locate the Coriolis station and approach it. The entrance tunnels to all these stations face the mother planet. Fly near to the station and then on towards the planet (monitoring altitude carefully). By turning a half circle you will now find your ship orientated towards the entrance.

Approach the final moments of docking at DEAD SLOW SPEED. Failure to dock cleanly can be fatal but may simply result in your scraping the sides of the aperture, with consequent loss of defensive shield(s) and quite possibly your cargo. Manually control the Cobra's roll motion to match the rotation of the Coriolis station. The entry port must be as nearly horizontal as possible.

If docking is successful; the protective field across the station entrance is penetrated, and a break pattern appears on the screen. Berthing is handled automatically.

## AGGRESSIVE WEAPONRY

ITEM	TECH LEVEL	PRICE/CR
Fuel	Always	Varies
Missile	Always	30
Large Cargo Bay	Always	400
ECM System	2	600
Pulse Laser	3	400
Beam Laser	4	1000
Fuel Scoops	5	525
Escape Capsule	6	1000

## SUPREME CHALLENGE

Energy Bomb	7	900
Extra Energy Unit	8	1500
Docking Computers	9	1500
Galactic Hyperdrive	10	5000
Mining Lasers	10	800
Military Lasers	10	6000

(Commodore) 3 offers weapons and other - non-combative - hardware for sale.

(Spectrum and Amstrad) 4 offers weapons and other - non-combative - hardware for sale.

### LASERS

Pulse lasers initially housed only in the front of the ship, and so no sights appear across rear or side views until such time as you have sufficient credits (from combat and trading) to afford lasers for these mountings. As we shall see, with sufficient cash you will also be able to upgrade pulse to more powerful beam lasers.

### MISSILES

Missiles are always available, whatever the nature of your destination world, though no more than four may be carried at any one time. Before a missile can be fired it must be locked onto a target. When fired, it will home in on that target and destroy it, unless your enemy successfully takes one of the precautions described above. The missile launch mechanism is very reliable and hardly ever jams.

### ECM

E - An ECM System (literally Electronic Counter Measures System) is offered for sale at Tech level 2, and may be used any number of times given sufficient energy replacement. When activated by the E key, ECM destroys all missiles in your vicinity.

### NON-COMBATIVE EQUIPMENT

#### Fuel

Fuel is always available. You can refill your tanks to full (7 light-year) capacity - no less is permitted.

#### FUEL SCOOPS

Fuel Scoops may be fitted to the hull at a planet of Tech level 5 or higher. These enable a ship to obtain free hyperspace fuel by "skimming the sun" - flying close to it at a high velocity.

Once fuel scoops are installed, you can scoop up an object (such as a cargo canister) by keeping it in the lower half of the screen view area while flying right up to it.

### CARGO BAY EXTENSION

One cargo bay extension can be bought, increasing the hold space from 20 to 35 tones.

### DOCKING COMPUTER

C & P (Spectrum and Amstrad C only) This available from all Tech level 9 planets; they are fitted to the ship's flight control system and enable it to dock the ship automatically. The auto-docking sequence is triggered by the C key and switched off by P.

(Spectrum and Amstrad - The auto-docking sequence is initiated by the C key).

### INTERGALACTIC HYPERDRIVE

#### CTRL H

The intergalactic hyperdrive is obtainable only from planets at Tech level 10 or higher, and can only be used once. The Intergalactic Hyperdrive is engaged by pressing CTRL and H simultaneously.

(Spectrum and Amstrad - Hyperdrive is engaged by pressing G then H).

### INTERGALACTIC TRADING

The Cobra Mk III, designed primarily as a trading ship, combines combat efficiency and manoeuvrability with substantial cargo space (20 Tonne Canisters) and with scoop attachments for space debris, jettisoned cargo and space rock.

Most space stations have made the process of trading very simple, in order to facilitate a fast turnover in goods and ships. Import and export tariffs - which are high on some worlds - are automatically added or deducted and this is reflected in the prices shown. The auto-trader system, employed by the Cobra, does not allow for more specific trading deals to be performed.

ITEM		AVERAGE PRICE/CR
Food	(Simple organic products, see below)	4.4 Tonne
Textiles	(Unprocessed fabrics)	6.4 Tonne
Radioactives	(Ores and by-products)	21.2 * "
* Slaves	(Usually humanoid)	8.0 * "
Liquor/Wines	(Exotic spirits from unearthly flora)	25.2 * "
Luxuries	(Perfumes, Spices, Coffee)	91.2 * "
* Narcotics	(Tobacco, Arcturan Megaweed)	114.8 * "
Computers	(Intelligent machinery)	84.0 * "
Machinery	(Factory and farm equipment)	56.4 * "
Alloys	(Industrial Metals)	32.8 * "
* Firearms	(Small-scale artillery, sidearms etc.)	70.4 * "
Furs	(Includes leathers, Millennium Wompom Pelts)	56.0 * "
Minerals	(Unrefined rock containing trace elements)	8.0kg
Gold		37.2kg
Platinum		65.2 * "
Gem-stones	(Includes jewellery)	16.4g
Alien Items	(Artefacts, Weapons etc.)	27.0 Tonne

\* These items are defined as illegal by the Galactic Government, so trading in them is risky.

If you wish to buy, numerically indicate the amount you wish to purchase; autoSCAM modules will immediately load your purchase into the cargo bay. Your screen will indicate your remaining credit facility.

When all items for sale have been offered to you your cargo hold status will appear to confirm your purchase.

The Cobra trade ship must dock with a Coriolis space station before buying or selling cargo. It has no Free Space trade facility, apart from routine jettisoning of canisters.

Once docked, the selling process is automated, although there is no requirement to sell.

Demand for goods varies widely and prices within planets fluctuate, but GalCop regulations prohibit planets from advertising their requirements or announcing their market prices beyond their own System Space. Any trader, therefore, approaches all transactions with a certain financial risk.

Trade depends upon demand, and selling prices depend upon



the level of demand on the planet, and its available money. None of these factors can be assessed before docking.

Agricultural planets invariably have excess produce at reasonable purchase prices, and such food sell well at industrialised, middle-to high-technology worlds. Raw materials, and ores, will sell well to middle-tech worlds, which are usually able to refine them, and the refined product can fetch excellent prices at worlds of very high tech status.

The rules are complex, and anarchy and piracy has its effect on causing the rules to change.

In trading with a planet, consider its economic profile:

**AGRICULTURAL WORLDS** need specialist food and raw materials, but mostly basic machinery and spare parts. If they are rich, they need luxuries and high tech industrial machines. They produce food in quantity, raw materials and specialised "organic" items, like some textiles.

**INDUSTRIAL WORLDS** need agricultural produce; raw materials (for refining); resource exploitation machinery; (if rich) high tech goods. They produce basic items of need for civilised worlds: beds, seals and gaskets, power storage units, basic weapons, mass produced fertiliser, mass produced medicines etc.

**SUMMARY OF CONTROLS**  
(COMMODORE 64) (SPECTRUM) (AMSTRAD)

**SPACE FLIGHT CONTROLS**

* Anticlockwise roll	<	N	<
* Clockwise roll	>	M	>
* Dive	S	S	S
* Climb	X	X	X
Increase speed	Space Bar	SPACE	SPACE
Decrease speed	/?	SYMBOL SHIFT	/?
Front view	F1	1	1
Back view	F3	2	2
Left view	F5	3	3
Right view	F7	4	4

\* Joystick can be used for these manoeuvres on all systems.

**NAVIGATIONAL CONTROLS**

	COMMODORE 64	SPECTRUM	AMSTRAD
Hyperspace	H	H	H
Intergalactic jump	ctrl H	G Then H	G Then H
Distance to system	D	D	D
Cursor cross Home	O	B	Copy or B
Cursor cross control	lft/right cursor	NMSX	Cursor keys/SX
	up/down cursor		
Galactic chart	4	I	5
Local cluster chart	5	O	6

**SPACE COMBAT CONTROLS**

Fire laser	A*	A*	A*
Target missile	T	T	T
Fire missile	M	F	M
Unarm missile	U	U	U
ECM	E	E	E
Energy bomb	☉	W	TAB
Escape capsule	←	Q	ESC
Docking computer on	C	C	C
Docking computer off	P	C	C

\* Or fire button

**TRADING CONTROLS**

Launch from station	F1 only if docked	1	1
Buy cargo	" " "	2	2
Sell cargo	2 only if docked	3	3
Equip ship	" " " "	4	4
Galactic chart	4	I	5
Local cluster chart	5	O	6
Data on system	6	P	7
Market prices	7	K	8
Status page	8	L	9
Inventory	9	ENTER	O
Find Planet	F only if docked	R	F

**GAME CONTROLS**

Game skip	J	J	J
Freeze game	Inst/Del	CAPS SHIFT	DEL
Continue game	Ctrl/Home	SPACE	CLR
Initiate save	@	SYMBOL SHIFT	@

(Only when docked)

**OTHER CONTROLS**

Note: These controls can only be used while the game is frozen.

Keyboard recentering toggle	A	R	R
Keyboard damping toggle	Run/Stop	D	D
Keyboard/joystick toggle	K	K	K
Reverse joystick *	Y	Y	Y
Reverse joystick +	J	B	B
Docking music on/off	M		
Sound effects off	Q	Q	Q
Sound effects on	S	S	S
Flashing red/yellow toggle	F	1	1
Planet surface lines	P		
Start new game	←		

\* Y Direction only  
+ Both directions

**COMMODORE 64**

The keyboard recentering toggle (A) will disable and re-enable the recentering in roll and dive/climb control. When recentering is enabled, a small amount of climb (or clockwise roll) cancels any dive (or anticlockwise roll) and vice versa.

The keyboard damping toggle (RUN/STOP) will disable and re-enable the automatic damping of a roll, dive or climb while in keyboard control.

The J key will reverse both channels of the joystick enabling it to be held either way around. The Y key will reverse the Y-Channel only so that pushing the joystick forward will result in a climb and pulling it back will result in a dive; roll will not be affected. The J and Y keys can be used in conjunction.

The F key will make dial information appearing in red flash red and yellow. This will make the screen display clear for users with black and white televisions or monochrome monitors.

**SPECTRUM AND AMSTRAD**

The keyboard recentering toggle (R) will disable and re-enable the recentering in roll and dive/climb control. When recentering is enabled, a small amount of climb (or clockwise roll) cancels any dive (or anti-clockwise) and vice versa.

The keyboard damping toggle D will disable and re-enable the automatic damping of a roll, dive or climb while in keyboard control.

The B key will reverse both directions of the joystick enabling it

## SUPREME CHALLENGE

to be held either way around. The Y key will reverse the Y-direction only so that pushing the joystick forward will result in a climb and pulling it back will result in a dive; roll will not be affected. The B and Y keys can be used in conjunction.

## ACE 2

### OVERVIEW OF "ACE 2"

AIR COMBAT EMULATOR TWO (ACE 2) is a head to head flight and combat simulation for one or two players, each flying a different type of fighter. Plane One is a carrier based aircraft, while Plane Two is stationed at an airbase. In the single player mode, the human controls Plane One, and the computer flies Plane Two, using very advanced artificial intelligence to execute both offensive and defensive manoeuvres. Plane Two is from a desert country, with a western coast line. Plane One is based on a foreign aircraft carrier, which is positioned out of territorial waters.

### ACE 2 is really two games:-

#### (1) CLOSE RANGE DOGFIGHT

Both aircraft are armed with aerial cannon, and with close-range heat-seeking missiles. They are placed at a random map position, but fairly close to each other. The planes must fight each other using the available weapons, and if one aircraft is shot down, the game continues, both pilots receiving a fresh plane. The game ends when one of the pilots has no more aircraft left.

#### (2) FULL-SCALE AERIAL AND GROUND ATTACK

The country of Plane One has positioned a Spyship, close to the coast of its rival, whose mission is to monitor an inshore radar station. Contrary to all expectations, the inhabitants have reacted aggressively to this action, and have sent a single plane, from an airbase to the east of the radar station, to destroy any enemy aircraft, and sink the enemy vessel. Help is summoned, and a single, carrier based fighter is sent, with orders to shoot down the attacker, and then to destroy the aforementioned radar station. Each aircraft has an aerial cannon, and can be further armed with a variety of short and long range air-air missiles, and an air-ground missile. The pilots must choose the weapon load; the section ARMING THE AIRCRAFT explains this fully.

### SETTING THE OPTIONS FOR "ACE 2"

Use either joystick to move the arrow up and down, and press fire to change an option.

#### 1) COMMENCE CONFLICT

Move the arrow to the top, and press fire when you are satisfied with the options.

#### 2) COMBATANTS

Set for One Player, or Two Players

#### 3) COMPUTER OPPONENT SKILL LEVEL

Only switchable if playing against the computer. Changing this value (1-20) will increase the skill and ability of the computer pilot.

#### 4) COMBAT SCENARIO

Change this, to obtain the type of game that you wish to play, either CLOSE RANGE DOGFIGHT or FULL SCALE CONFLICT (see above)

#### 5) NUMBER OF PLANES EACH

Effectively, this is the number of "lives" allowed, and is normally set to 3, but can be increased to a maximum of 20, to give a really long game!

#### 6) CRASH DETECTION

Normally set to ON, this can be turned OFF, and when either plane crashes into the sea or the ground, the aircraft is not destroyed. Recommended for new pilots!

#### 7) NUMBER OF MISSILE HITS REQUIRED TO KILL

This is normally set to 3, but can be reduced, to give a more realistic representation of the destructive power of modern weapons!

#### 8) SAVE THESE OPTIONS TO DISK (DISK BASED GAME ONLY)

Use this to save the current options to the disk, so that when the game is next loaded, they are automatically selected.

### ARMING THE AIRCRAFT (ONLY NECESSARY DURING THE FULL-SCALE CONFLICT GAME).

When you see the picture of your aircraft, move the arrow down, to select "ARM" and the arming menu will appear. Move the arrow to a weapon name, and press fire to increase the number that will be carried. The program will ensure that the weapon load selected is in the carrying capacity of the aircraft:-

CANNON - 3000 rounds (fixed)

HEAT SEEKING MISSILES - maximum of 8, but less if other weapons carried.

RADAR-GUIDED MISSILES - maximum of 6, but none may be carried if any air-ground/air-ship weapons are carried.

AIR-GROUND/AIR-SHIP MISSILES - maximum of 2.

### FLYING THE AIRCRAFT IN "ACE 2"

This part of ACE 2 has been designed as a simulation of flying a Mach 2 combat aircraft, but with many of the complex and difficult aspects of piloting removed. Here are some of the things about which you don't need to worry:-

Undercarriage control

Flaps setting

Rudder Control

Engine Temperature

Decrease in turn rate at very low and high speed Keeping below maximum safe speed

Avoiding maximum g-forces

The following information applies to flying EITHER aircraft.

#### 1) ENGINE POWER

Use the two keys specified, to increase or decrease the power of your turbofan jet engine. At more than 75% power (that is, when the thrust bar indicator on your instrument panel is more than three-quarters full), the afterburners are engaged. This drastically increases thrust, but at the price of heavy fuel consumption. Afterburners are needed to fly at speeds above Mach 1.0 (about 760 knots).

#### 2) USING THE JOYSTICK

Moving the joystick up or down will change the pitch angle of the aircraft. If the plane is flying upside down, pulling the joystick back will cause the aircraft to dive; when the plane is not upside down, the aircraft will climb. Observe your pitch indicator.

In order to turn the plane, it must be put into a bank. Moving the joystick left or right will do this. To turn quickly, put the plane in a steep bank, and pull back on the stick. Note that when the aircraft is in a steep bank, moving the joystick up or down will have little or no effect on the pitch of the plane.

#### 3) STALLING AND CEILING

Stalling occurs when the speed of the aircraft is not sufficient to keep the aircraft in flight. In a real aircraft, the stall speed varies according to its situation, but in ACE 2 it has been fixed at 140 knots. The ceiling (maximum altitude of the aircraft) is 60000 feet.

#### 4) HANDS ON THROTTLE AND STICK CONCEPT (HOTAS)

Real aircraft, such as the F-18 Hornet, and the F-15 Eagle use the HOTAS concept in the design of their flight controls. The most important controls that are needed by the pilot during aerial combat are placed on either the throttle (the lever to control the engine's power), or the joystick. The pilots left hand is usually on the throttle, his right hand on the stick. The flight controls to ACE 2 have been designed in a similar way; all the controls for Plane One are at the left of the keyboard, and those for Plane Two at the right. We recommend that each player sits

to the appropriate side of the computer, with his right hand on the stick, and the fingers of his left hand on, or near the thrust, weapons selection, and defence keys. You may wish to vary this arrangement to suit your own needs.

### AIRCRAFT INSTRUMENTATION

#### NOTE: REFER TO THE ENCLOSED DIAGRAM PLANE ONE

The instrument panel of Plane One represents the latest type, with the information being presented on cathode ray tubes (CRT's). The bottom of the left CRT shows the name of the current weapon selected, and how many units of that weapon you have:-

#### CANNON - AERIAL CANNON

#### HEAT AA - HEAT-SEEKING AIR-AIR MISSILE

#### RADAR AA - RADAR GUIDED AIR-AIR MISSILE

#### AIR-GRND - AIR-GROUND MISSILE

At the left of centre CRT is the RADAR SCANNER. The dot in the middle is your aircraft, and radar contacts (missiles, enemy planes etc) to the front of your plane are shown above this dot. The radar automatically adjusts its display, when the target is at close range, and you will notice that the scale lines on the side of the display, will change.

To the right of the radar is the PITCH DISPLAY. This is a representation of the apparent movement of the horizon, as the pitch of the aircraft is changed. Thus, when the aircraft is flying with the nose a pitch zero, the pitch bar which represents the ground, occupies the bottom half of the display. As you increase your pitch, you will see the ground appear to move down, and the pitch bar moves in a similar fashion. At the right of the centre VDU, is the aircraft roll indicator, which indicates the banking angle of your plane.

### PLANE TWO

The instrument panel of Plane Two represents an older design, and features CRT's as well as conventional instruments.

At the extreme left, the weapons selector switch shows the current weapon selected:-

#### C - CANNON

#### H - HEAT SEEKING AIR-AIR MISSILE

#### R - RADAR GUIDED MISSILE

#### S - ANTI-SHIP MISSILE

The operation and the meaning of the PITCH BAR, COMPASS, RADAR, DIGITAL READOUTS, POWER AND FUEL BARS, is the same as that of Plane One.

### USING THE MAP

The map can be displayed on either player's screen. The black dot is Plane One, and white dot is Plane Two. The map also shows missiles, the spyship, and the radar station.

The aircraft carrier and airbase are NOT on the map; they are situated to the west and east of it.

### USING THE AIRCRAFT WEAPONS SYSTEMS IN ACE 2

Both the aircraft are armed with similar weapons, and similar capabilities. They have an AERIAL CANNON for very close range work, HEAT-SEEKING AIR-AIR MISSILES for close range, RADAR-GUIDED AIR-AIR WEAPONS for long range shots, and AIR-GROUND (Plane One) or AIR-SHIP (Plane Two) MISSILES.

#### 1) AERIAL CANNON

Mounted in the port wing root of each aircraft, this fires cannon shells in a line of the direction of flight of the plane. Use the cannon against the enemy aircraft, when it is less than one mile away. To aim the gun, move the aircraft so that the centre of the gunsight is over the desired target. Try to fire at an aircraft from

behind the target. Several cannon hits will be needed to destroy the plane.

#### 2) AIR-AIR MISSILES

Note: ACE 2 is initially set so that three missile hits are needed to destroy a target, but this can be reduced to two, or even one (see SETTING THE OPTIONS).

i) HEATING SEEKING AIR-AIR MISSILES THESE ARE SHORT RANGE WEAPONS (RANGE LESS THAN 8 MILES). This is a FIRE AND FORGET WEAPON, which means that once the missile has been fired, the pilot does not need to guide it to its target; he can forget the missile.

Point the nose of your aircraft towards the target plane. You should see a sights box, indicating the position of the target, which will appear as only a dot at extreme range. The message panel will print the target's range and altitude, and will tell you when the sensors in the missile have locked on to the heat source (the enemy plane). The message "TARGET LOCKED" means it is OK to fire. Once you fire, you have no control or influence over the missile. If the target is close, try some cannon shots.

ii) RADAR GUIDED AIR-AIR MISSILES THESE ARE LONG RANGE WEAPONS (RANGE LESS THAN 25 MILES).

This is a SEMI-ACTIVE RADAR GUIDED MISSILE, which means that the missile must be guided to the target by the radar from your aircraft. As with heat-seeking missiles, the sights box will indicate the target, the panel will say "TARGET LOCKED" and you may fire. THIS IS WHERE THE USE OF THE MISSILES DIFFERS. Having fired the radar-guided missile you MUST keep the target aircraft within the sights box, for the whole of the missile's flight (about 30 seconds if the target is 25 miles away).

Should the target "move" away from the sights box for a few seconds, the radar will be unable to find it, and the missile will be lost. Note that the sights box moves around, so you do not need to point the plane DIRECTLY at the target.

#### 3) AIR-GROUND/AIR-SHIP MISSILE

The operation of this device is the same, both for Plane One and Plane Two, although the actual missiles are different. Approach the target at below 2000 feet, and at a speed of 500 knots or less. Point your aircraft so that the target is within the sights box, and when the panel says "TARGET LOCKED", fire the missile. YOU MUST MAINTAIN YOUR AIM ON THE TARGET, whilst the missile flies towards it. As with radar-guided air-air missiles, if the target should "move" from the sights box for more than a few seconds, the missile will be lost.

### SCORING

CANNON HIT ON TARGET AIRCRAFT	20 POINTS
MISSILE HIT ON TARGET AIRCRAFT	50 POINTS
ENEMY AIRCRAFT DESTROYED	200 POINTS
ENEMY GROUND TARGET DESTROYED	2000 POINTS

### DEFENDING YOUR AIRCRAFT

If an enemy missile is fired at you, launch flares or chaff (the game selects the correct one), to decoy the missile. You have 6 flares, and 6 chaff pods. Flares and chaff are most effective when the missile is about 1 mile away; the instrument panel will tell you the range.

Either climb or dive to change your altitude by several thousand feet, to avoid the missile. If an enemy aircraft is behind you, and quite close, either turn sharply, or pull up quickly, to move away from it. If the range is less than a mile, and you cannot get away from it, keep banking, pulling back, then rolling to a different angle, and pushing forward, to avoid the enemy cannon fire.

When attacking a ground target or ship, watch out for enemy surface to air missiles, and take the measures described above, to avoid them.

If you ARE hit, your controls will not respond for a few seconds,

