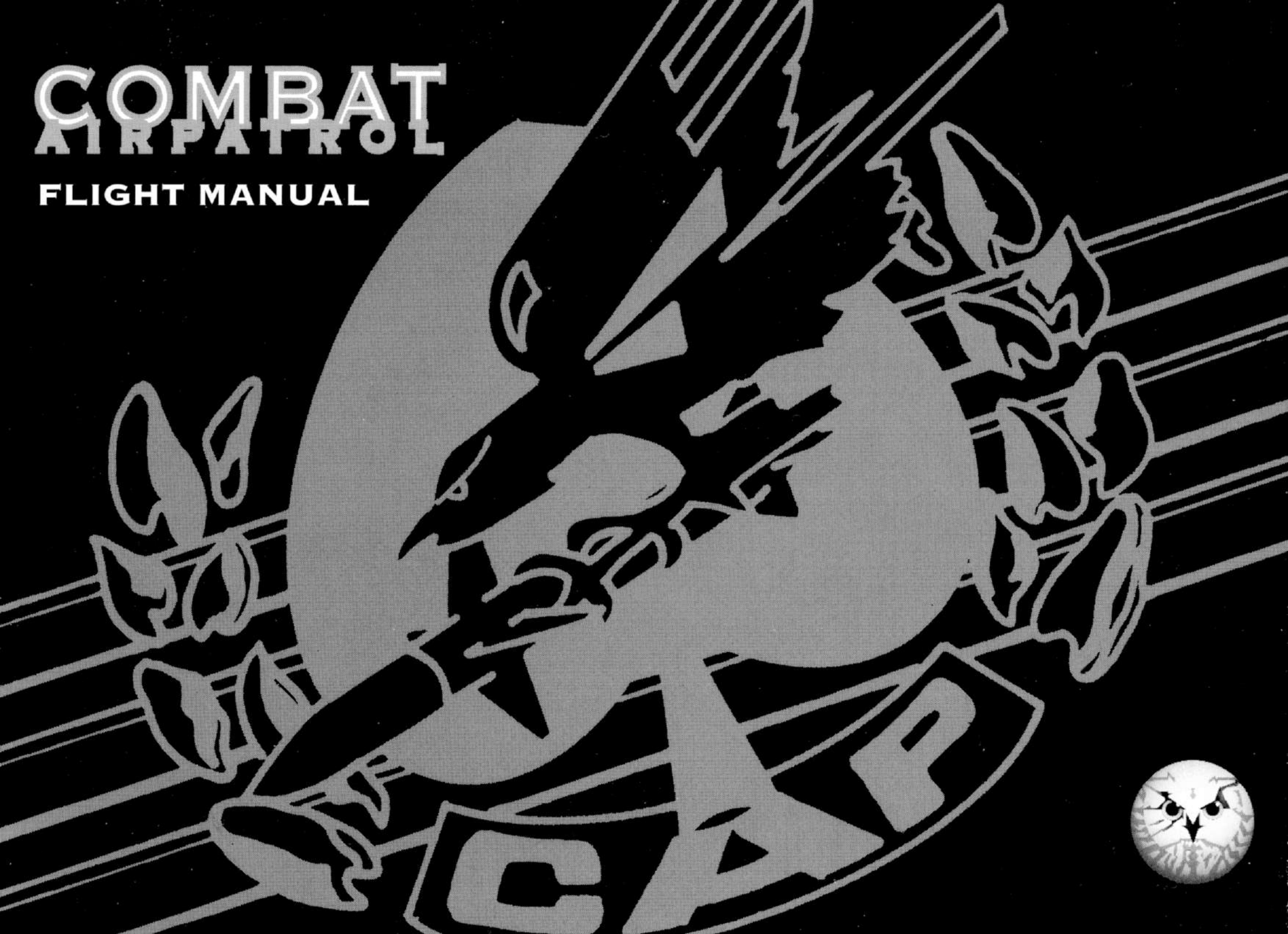


# COMBAT AIRPATROL

FLIGHT MANUAL

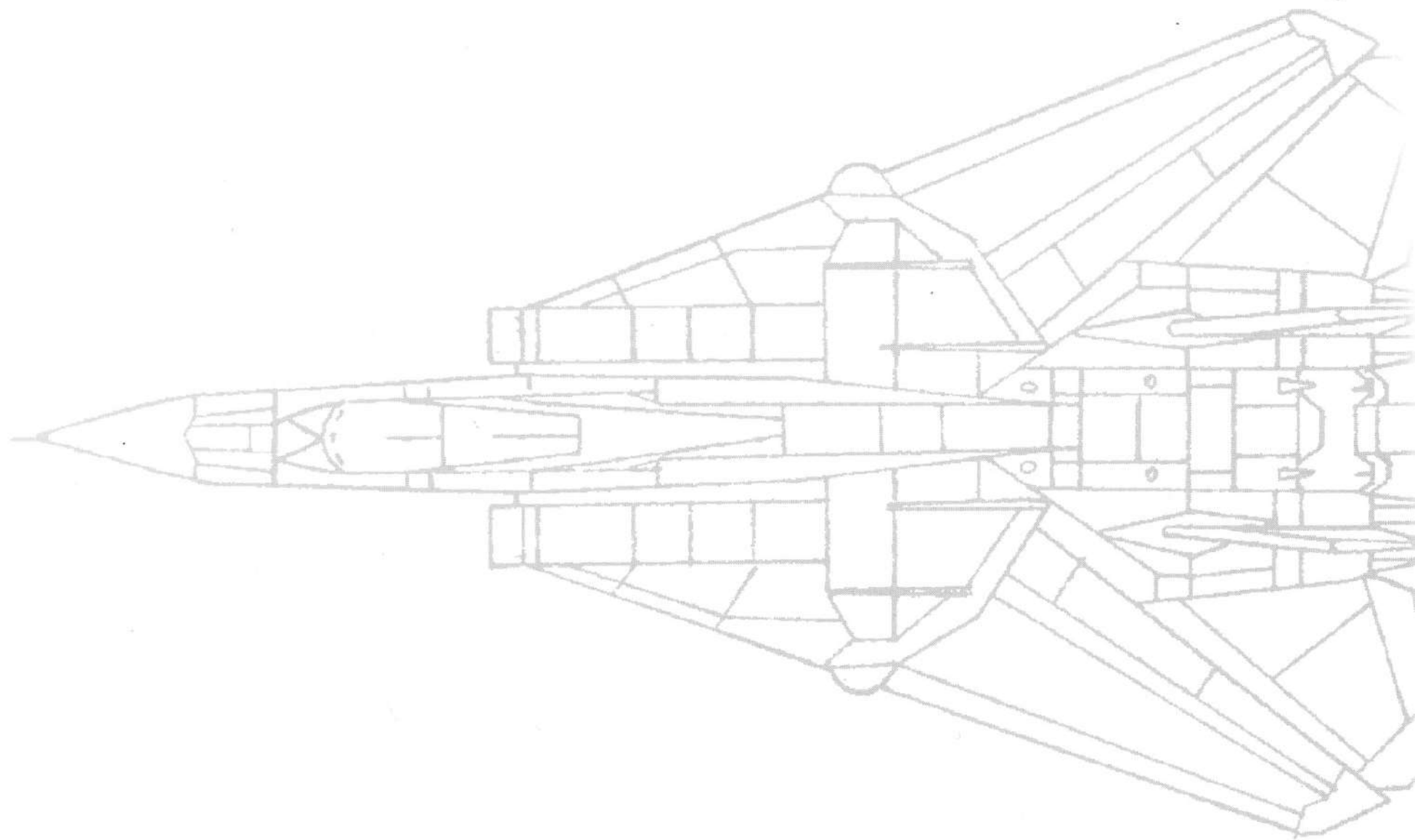






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## LOADING INSTRUCTIONS

### System aim9

Length	3
Height	0.63
Width	0.63
Speed	3
Range	17.70



# LOADING INSTRUCTIONS



## AMIGA

Insert disk 1 into the internal drive and turn on your Amiga. The introductory scenes will now load. Once completed, insert disk 2 into the internal drive and follow on-screen

prompts to insert disk 3 (note that it is not necessary to use disk 1 if the intro is not required. In this case, disk 2 can be used from boot up.) The game will now begin. If the game is left to enter demo mode Shift & Esc will revert back to the main menu screen.

We suggest that a backup copy is immediately made of disk 3 as this disk is written to throughout the game. Ensure the disk retains the original disk name and is not prefixed with 'copy of'.

## INTRODUCTION

## System aim 7

Length 3.67

Height 1.03

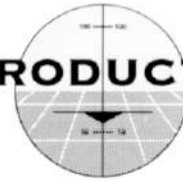
Width 1.03

Speed 4.00

Range 100



## INTRODUCTION



To most of us, Operation Desert Storm was seen as a victory. It was the culmination of months of unwarranted aggression on the part of one large country over another, more peaceful nation. As such, the outcome was regarded with both joy and relief.

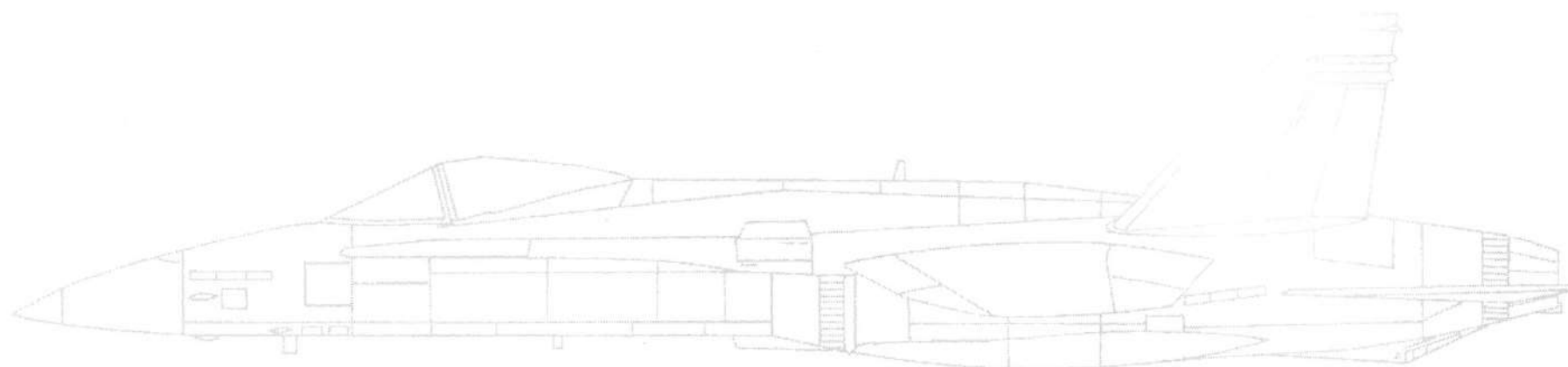
But whatever the political reasoning behind the invasion of Kuwait- by either side- to the front-line troops involved, it was a situation they had all been trained for and were ready to accept. Unlike other occupations, the only time the soldier gets to do his job is during warfare. For many of them,

this was a rare opportunity and, as far as they were concerned, this was their job and they were out to do it well.

The conflict in the Gulf was unique in many respects. It came at a period when all the main coalition powers involved were cutting back on military spending and rationalising defence forces. It also gave the commanders of the armed forces and weapons' developers a unique opportunity to test modern weapons under battle conditions. Never before had the weapons been so technologically advanced and reliant on electronics. Years of development had equipped



the allied forces with a huge array of defence and attack mechanisms from electronic scrambling systems, aimed at confusing enemy intelligence and communications, to laser guidance systems for missiles. The Gulf War was to be a test for them all- both hardware and personnel alike- and was to prove the skill and determination of all involved to the full.



## CHRONICLE OF THE WAR

## System aim54

Length 4.02

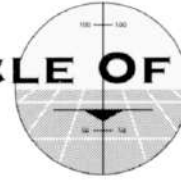
Height 0.92

Width 0.92

Speed 5

Range 200

# CHRONICLE OF THE WAR



The Old World has always been an area of border quarrels and bloody wars. Over literally thousands of years, empires have risen and crumbled and the various races of peoples who live in this turbulent area have moved to and fro.

An objective view highlights Sadaam Hussein as a man with a mission. Claiming descendency from Nebuchadnezzar, he was driven by a will to lead his people to dominancy and pursued this quest with a remorseless vigour. After a drawn-out and bloody war with Iran, Iraq briefly rested and turned its attentions upon

its tiny neighbour. Iraq had long quarrelled with Kuwait over the Rumaila oil field which lay on the border between the two countries. Iraq protested that Kuwait was 'stealing' oil from this shared oil field and forcing down the price of crude world-wide. This was in direct opposition to the wishes of Sadaam who was aiming to raise world prices to pay for urban reconstruction within Iraq itself.

This was not however, the only possible explanation for his particularly vicious actions and many Western commentators were quick to



point out other, more sinister and selfish motives. Apart from regular grumblings issuing from Iraq claiming Kuwaiti territory for its own, Sadaam's determination to become a hugely powerful figure on the world stage, to lead a religious and political upheaval amongst the peoples of the East and to field an immense military presence which could take-on the most powerful armies of the West was almost transparent in its direction.

The early morning silence of August 2 1990 was broken by the sound of advancing Iraqi tanks moving quickly towards the Kuwaiti border. Less than two hours later, they were pressing upon the outskirts of Kuwait City, threatening its population of 1.7

million people and throwing Kuwait under the spotlight of world attention.

Little resistance lay in the path of the experienced and well armed Iraqi troops now entering the city. Strike aircraft, principally Migs, pounded key targets in the centre and launched rocket attacks against the Emir's palace. Ground troops were held momentarily at bay as the palace guards fought valiantly for their Emir who escaped with minutes to spare to neighbouring Saudi Arabia.

And so Kuwait became one small province of the expanding Iraq. The action was unanimously condemned by the United Nations Security Council. Saudi-Arabia, who found a huge and aggressive force on their

borders with the former Kuwait were thrown into panic and the West, lead by the USA, vehemently denounced this aggression and promised 'action' would be taken. Not for a moment did Sadaam realise just in what form this 'action' would come. He seemed to think that his position, several hundred miles away from the nearest 'western' power was enough to keep him safe. He was wrong.

Apart from moral issues- where the whole population was effectively taken captive and held against it's will, economic issues undoubtedly played an important part in provoking swift action by coalition countries.

Iraq was a major exporter of crude oil. Kuwait too relied upon oil to keep its

economy thriving and allowed this tiny country to possess one of the highest standards of living in the world. But by invading Kuwait, Iraq now held even greater control over a considerable proportion of the worlds oil fields- and could now lever its own, inflated, pricing policies into place. Apart from this, what seemed to particularly startle the outside world was the fact that the Iraqi shadow now lingered on the border of Saudi Arabia and their vast reserves of oil.

The United Nations were outspoken in their condemnation of this brutal attack and, after exhaustive discussions within the Security Council, passed a resolution which enforced a blockage around both Iraq

and the annexed Kuwait. This prohibited Iraq from selling its oil on the world market and effectively cut all other trade with the outside world in the effort to force Sadaam to retreat through economic pressures. The hope was in vain.


The world eventually lost its patience. Following the invasion, Iraqi diplomats had promised the invasion was a temporary measure to remove a 'tyrannical' leadership. The West and Eastern neighbours of Iraq were not convinced and, after a short period of diplomatic wrangling, the inevitable happened. A coalition force, headed by the USA. but involving troops from Great Britain, France, Saudi Arabia, Kuwait itself, Oman, the United Arab Emirates and several

other countries was formed and, after gaining U.N. approval, determined to enter the Gulf area in an attempt to both protect the surrounding areas from the threat of attack and perhaps, launch an attack to free Kuwait.

History has told of the course of events that followed and it is not the place of this short chronicle to mirror the outstanding performance of all those involved in the conflict on the coalition side. Rather, this is where we join the campaign. Allied forces are massed on the border with Kuwait on Saudi territory and are prepared for the attack. The Roosevelt lies in the Gulf within striking distance of all strategic Kuwaiti targets and all Navy crew members are on full alert.

**The decision  
TO RETAKE IRAQ  
IS  
MADE...**





## THE ALLIED FORCE

### System aim65

Length 2.50

Height 0.30

Width 0.30

Speed 1.50

Range 40

## THE ALLIED FORCE



### **THE USS THEODORE ROOSEVELT (CVN-71)**

The aircraft carrier, Theodore Roosevelt, is a vital part of the carrier fleet of the US navy. It's huge strike/defence capabilities allows the US to deploy an impressive range of both strike and intercept aircraft to any part of the world in an extremely short space of time.

The 1000 foot long vessel is powered by two nuclear reactors which offer enough fuel for over 15 years of normal operation and can propel the 97,000 ton carrier at speeds of up to 30 knots. It has four individual flight

decks, complete with C-13-1 MK 7 catapults which accelerate the aircraft along the significantly shortened runway and allow them to reach take-off speed of around 160 mph in under 310 feet.

The Roosevelt houses a maximum load of approximately 85 aircraft which offer a variety of tactical and operational capabilities. Anti-submarine defence is provided by the SH-3 Sea King helicopter and the S-3A Viking aircraft which work in collaboration with an extensive on-board Anti-Submarine Warfare Module to provide a submarine



'screen' of outstanding effectiveness.

Carrier escort facilities are offered by both the E-2 Hawkeye and the F-14 Tomcat. The Hawkeye possesses a rotating radar dome affixed to the top of the fuselage which can detect targets at long range. Information is then passed on to the F-14 interceptors which can visually identify the target and advise/carry out any further action.

Airborne electronic defence is provided by the EA-6B Prowler which commands a potent armoury of signal-counteracting instruments. The jamming of communications' signals and the disruption of enemy radar allow friendly aircraft considerable advantages when operating within

electronically-defended territory.

The principal air-strike role aboard the Roosevelt is shared by two aircraft- the A-6E Intruder all weather attack aircraft and the F/A-18 Hornet strike fighter. These squadrons carry out all air-surface attack missions and offer a particularly effective strike capability.

## THE F-14 TOMCAT

The Grumman F-14, or Tomcat, was developed as a no-compromise multi-purpose fighter aircraft. During years of service throughout the world, it has become the backbone of the US. Navy fighter capability because of its outstanding performance in all areas of aerial combat.

It is powered by two General Electric F110 engines which accelerate the aircraft up to a speed of 1,560 mph (Mach 2.3), making 'straight-line' performance comparable to any fighter aircraft in the world. But what makes the F-14 really exciting is the way it can use this performance. Previously, fighter aircraft were full of compromise - usually the payoff

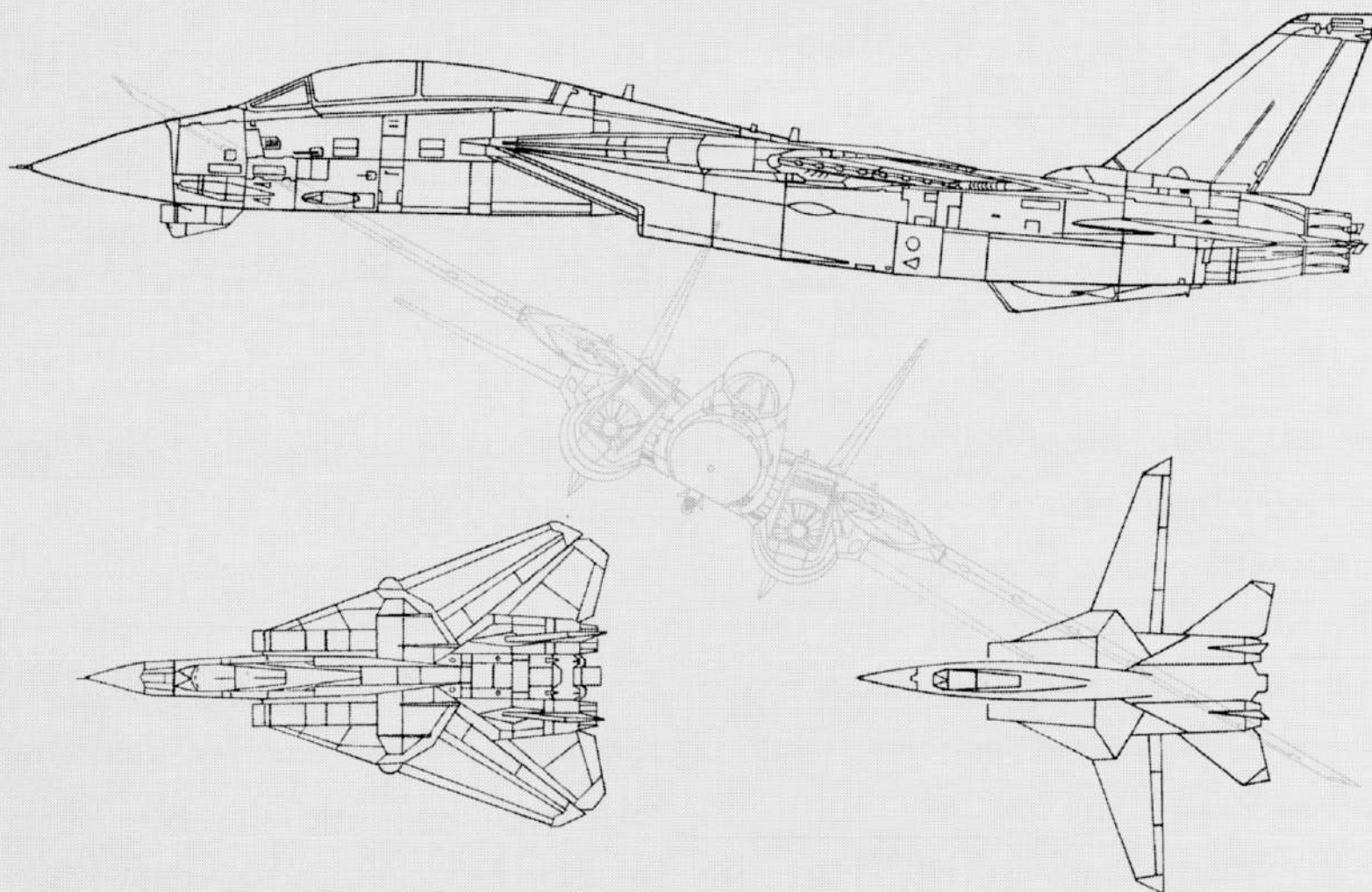
between speed and agility. The development team behind the F-14 practically ironed out the need for compromise making the Tomcat not just fast, but agile as well. Then they added a host of the latest weapons, controlled by the AWG-9 weapons control system. This allows the aircraft to detect over 20 targets simultaneously and select/attack the 6 most threatening (whilst tracking the remaining targets). All in all, they had developed what is possibly the most awesome fighting machine in the world today.

The weaponry of the F-14 matches its performance capabilities in every aspect. It is able to carry a mixed payload of air-to-air (A/A) missiles which allow the F-14 to fulfil a variety



of important airborne attack or  
intercept roles.

## F-14 TOMCAT



TOMCAT



## THE F-18 HORNET

The McDonnell Douglas/Northrop F/A-18 Hornet (to give it its full title) was conceived to fulfil a multi-purpose attack/fighter role which could also meet US Navy specifications. It utilises two General Electric augmented turbofans which output 32,000lbs/thrust- offering maximum speed capabilities of 1,200 mph (unladen) at altitude.

The large wing area, strengthened and widened fuselage (allowing for a larger fuel payload) and redesigned avionics pay tribute to the Naval origins of the F-18, meaning increased range and take-off/landing capabilities. It also allows the F-18 greater self-sufficiency in the field and the ability

to carry an extensive missile payload.

The weaponry carried by the Hornet is usually a mixture of both air-to-air and air-to-ground missiles, depending upon operational requirements. In addition to the weaponry detailed on the following pages, standard armament includes a single M61 cannon mounted in the nose cone.

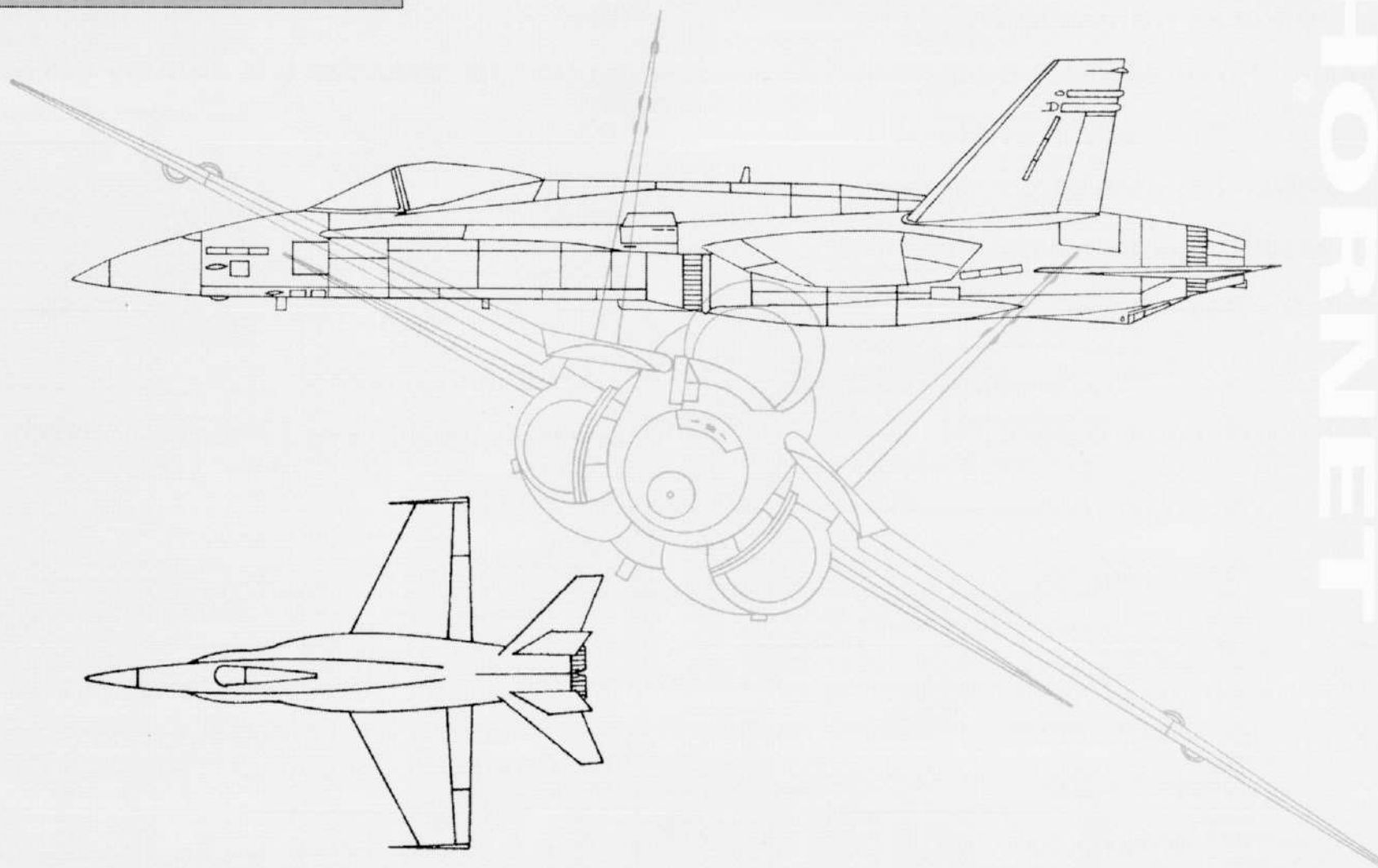
The weaponry for both aircraft is categorised into air-to-air and air-to-ground classifications. The F-14 has an option on all A/A missiles whilst only the Sparrow and Sidewinder A/A missiles are available to the F18.

Conversely, only the F-18 can carry A/G weapons. One important note to the detonation of A/A missiles is that they are fitted with fuses which are

sensitive to the proximity of the target aircraft. This means that a direct hit is

not necessarily required for a kill as the missile will explode without contact.

## F-18 HORNET





## **COMBAT AIR PATROL OBJECTIVES**

Combat Air Patrol is primarily concerned with the expulsion of enemy forces from within the pre-invasion boundaries of Kuwait. Obviously, it is very much up to the individual just how important any follow-up measures would be once the Iraqis have pulled out of Kuwait -

if you manage to achieve that! You may decide that coalition forces should in fact have continued the retaliation up to the point where Iraq itself was invaded and the fleeing forces 'neutralised'. It is entirely down to your discretion.

Another objective in any re-invasion scenario would have to be Sadaam himself and CAP includes mechanisms where by you might just catch a glimpse of him in your HUD sights!

**ARMAMENT****System aim84**

Length 3.86

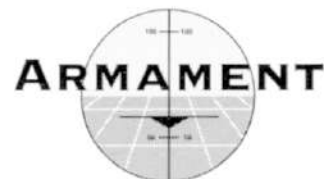
Height 0.76

Width 0.76

Speed 0.75

Range 92





## **AIR-TO-AIR**

### **F-14 & F-18**

#### **Vulcan M61 Cannon**

The Vulcan Cannon fires up to 100 high-velocity rounds per second through six barrels. The aircraft carries an advanced targeting system which calculates the distance, heading and velocity of the target and aims the cannon ahead of the target according to these calculations. This means that the cannon is not necessarily aimed directly at the target but ahead of it, allowing for the movement of the target aircraft in the period between firing and striking.

#### **To fire**

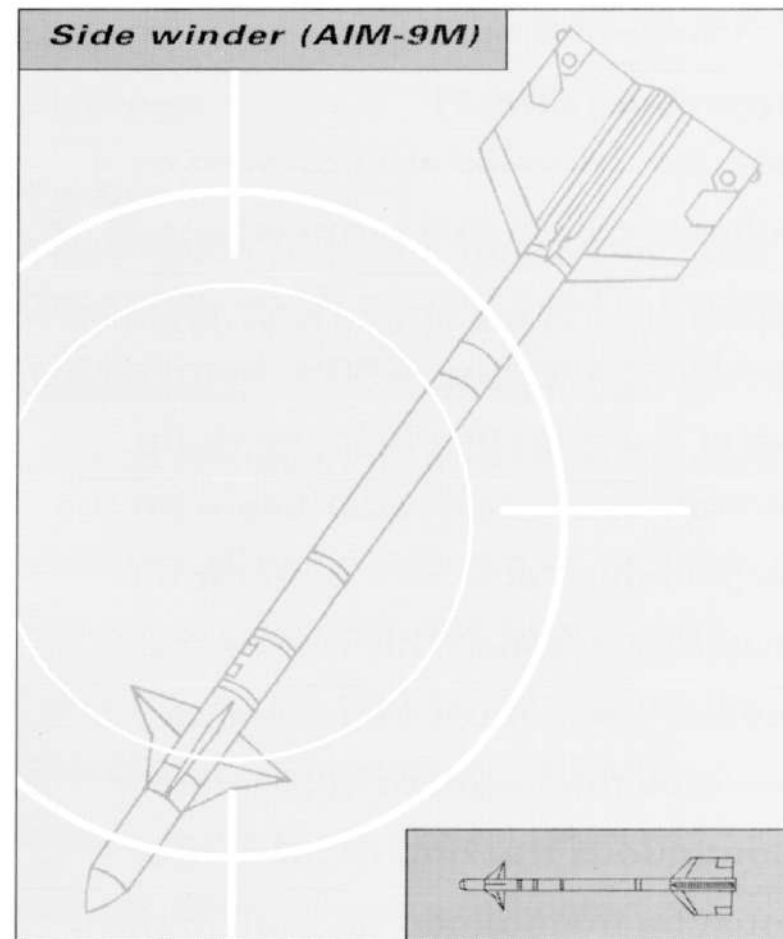
When on the cannon mode, the HUD display will indicate this with the GUN discrete (discretes are either letters, numbers or symbols displayed on the HUD) and the number of remaining rounds - initially 250. A circular aiming discreet appears on the HUD and a square target box will surround any targets viewed through the HUD. Align the target box with the aiming discreet and a SHOOT message will appear below the HUD when the cannon is on target.



## F-14 & F18

### Sidewinder (AIM-9M)

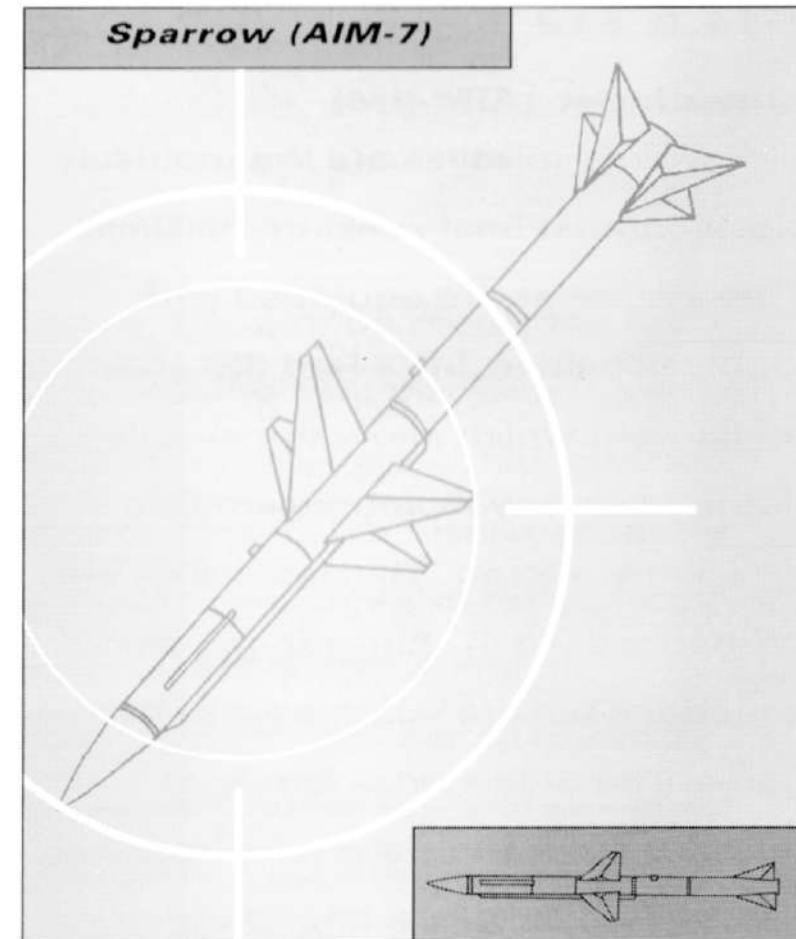
Sidewinder missiles are the mainstay close-combat heat seeking missiles. These missiles are equipped with highly sensitive Infra-Red (IR) seeking equipment which allow the missile to home-in on any IR source emitted by an enemy aircraft. These missiles are primarily used in short range combat situations but are vulnerable to decoy flares. The Sidewinder family of missiles have an operational range of up to 11 miles with a flight time of around 20-60 seconds. Firing accelerates the missile up to Mach 2.5 in a little over 2 seconds.



## **F-14 & F18**

### **Sparrow (AIM-7)**

Sparrow missiles are powered by a solid motor up to a terminal speed of Mach 4. These feature advanced radar guidance systems (SARH- Semi-active radar homing) in which the firing aircraft bounces a radar beam off the target which acts as a path for the Sparrow missile. This means the launch plane must be travelling towards the target to 'illuminate' it. Continuous tracking of the target must be maintained up until impact.



## F-14

### Phoenix

Phoenix is a weapon unique to the Tomcat which was developed as the ultimate in A/A missiles. Costing well over \$1/2 million each, the Phoenix has a range of 125 miles (the longest range of any A/A missile) and a maximum speed in excess of Mach 5. It features advanced radar tracking capabilities for accurate target identification together with a default attack mode which assumes the target is travelling head-on; a notoriously difficult strike scenario. Once launched, the Phoenix tracks the target long-range under internal guidance, switching to radar to illuminate the target when within close range. The Phoenix carries a

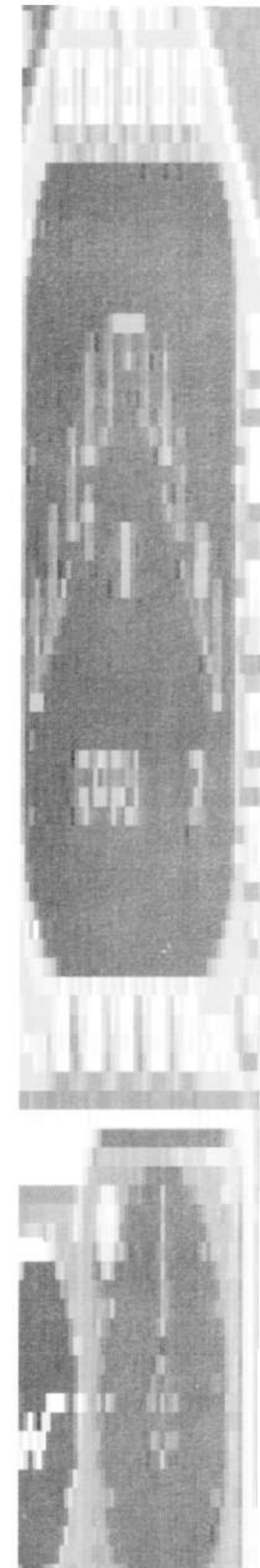
large annular blast fragmentation warhead.

### To fire

The missile selection for A/A combat is imperative if a high kill ratio is to be maintained - the range indicator is vital to achieve this and must be used.

With the HUD on A/A mode, choose the appropriate missile by toggling through the current payload with the Ctrl button - Short range missiles (Sidewinders) are abbreviated to SDWR. Sparrows are indicated as SPRW - Phoenix are PHNX.

When the MFD indicates an enemy presence (see section on MFD's, page 86) choose the missile following these rough range guidelines. Bear in mind that because of the nature of air



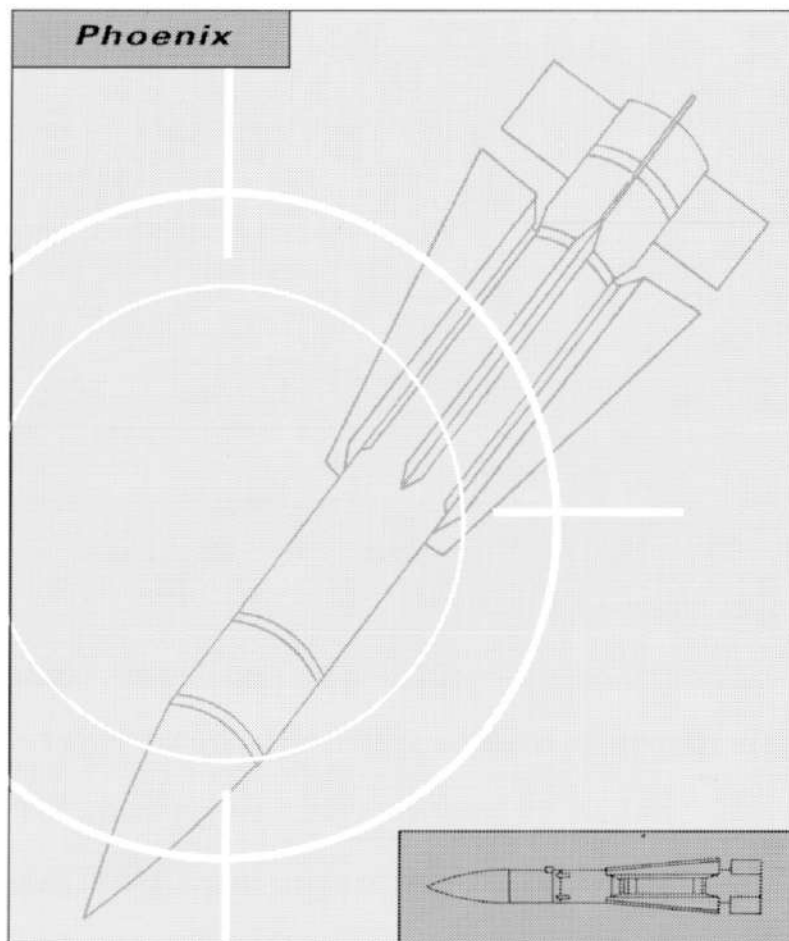
combat which is played out at high speed in 3 dimensions, there are an infinitely variable number of strike possibilities. Therefore any guidelines must be modified with regard to any individual strike scenario.

For example, the effective operational range of a Sidewinder is considerably lengthened if the target is flying directly towards, rather than away from, the firing aircraft. Since the flight time of a Sidewinder is up to 1 minute, it will take longer to reach the latter aircraft and therefore it is up to the pilot to determine which missile is the most appropriate - a decision upon which his life may well depend!

With a Sidewinder selected, a large circular discrete will appear on the

HUD. If a target is locked-on to within this zone, there is a high strike probability. Press 'T' to command the missile and aircraft systems to search for a target. At this command, the aircraft radar systems will search and lock-on to a possible target, surrounding it with a square box. The missile-borne target detection systems will then follow this with a diamond shaped discrete which, when it reaches the square discrete will indicate a lock-on target. The missile is now ready to fire and a lock-on target alert will be audible. This is identical for all A/A missiles although the Sparrow, being a missile of the SARH type requires the launch aircraft to continue in the direction of the target until strike is achieved. Phoenix

and Sidewinder can be fired - after lock-on is achieved - and left to strike the target under internal guidance.



### **SIDEWINDER**

<i>Range</i>	<i>Speed</i>	<i>Duration</i>
11 miles	Mach 2.5	60 seconds

### **SPARROW**

<i>Range</i>	<i>Speed</i>	<i>Duration</i>
62 miles	Mach 4.	3.5 mins

### **PHOENIX**

<i>Range</i>	<i>Speed</i>	<i>Duration</i>
150 miles	Mach 5+	Max. 7 mins

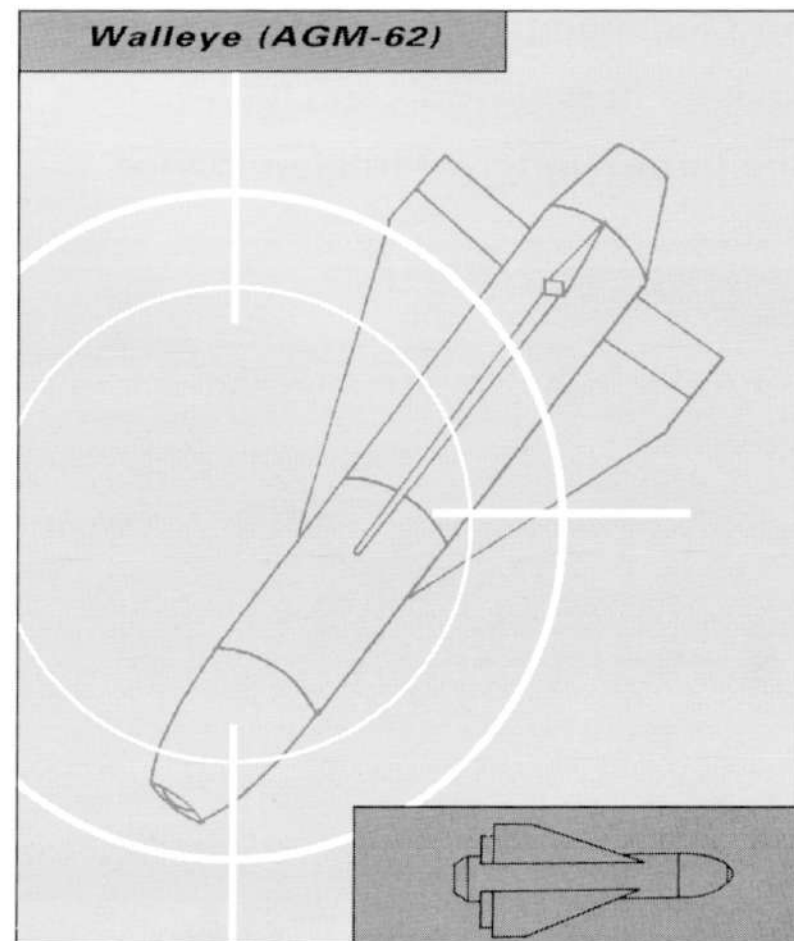
## AIR-TO-GROUND (F-18 only)

### Walleye (AGM-62)

The Walleye was described as 'the most accurate and effective air-to-surface conventional weapon ever developed anywhere' by the US. military. Despite being an unpowered glide bomb, it has a TV guidance system which offers target identification and the facility to glide the bomb towards the target.

#### To fire

Must be released at medium to high altitudes. Pressing F10 will allow you to view through the missile TV camera. Press fire to release the bomb and the missile is then steered into the target using the same controls as were used to fly the plane. Ensure the release aircraft is in level flight before switching to missile control.





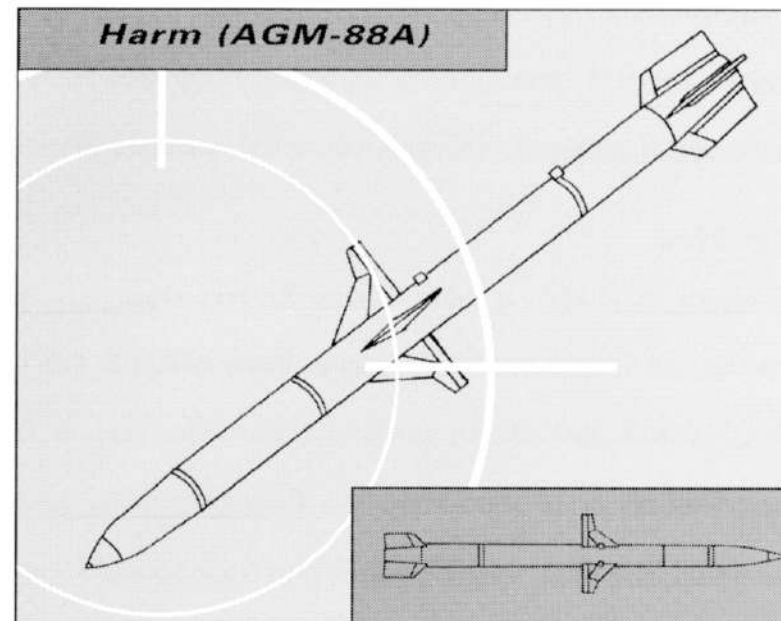
## **F18 only**

### **Harm (AGM-88A)**

Harm is an abbreviation for High-speed Anti-Radiation Missile and fulfilled a need for a missile which could detect and lock on to enemy radar radiation and destroy the source, ideally before the unit could be turned off - thus the high-speed requirement. If the missile is detected and the targeted radar facility shut down, the Harm continues its flight path, invariably striking the target with accuracy. Specifications include Mach 2+ performance, body length of 13' and range of around 12 miles, depending upon conditions and altitude.

### **To fire**

Select the Harm missile in A/G mode on the HUD display. Using the radiation receiver in the nose cone of the Harm, the missile will detect any ground based radiation source which can then be locked-on to by pressing 'T'. Toggle between this and other radiation-emitting targets by pressing 'T'. Once fired, the missile will automatically home in on the source.



## **F18 only**

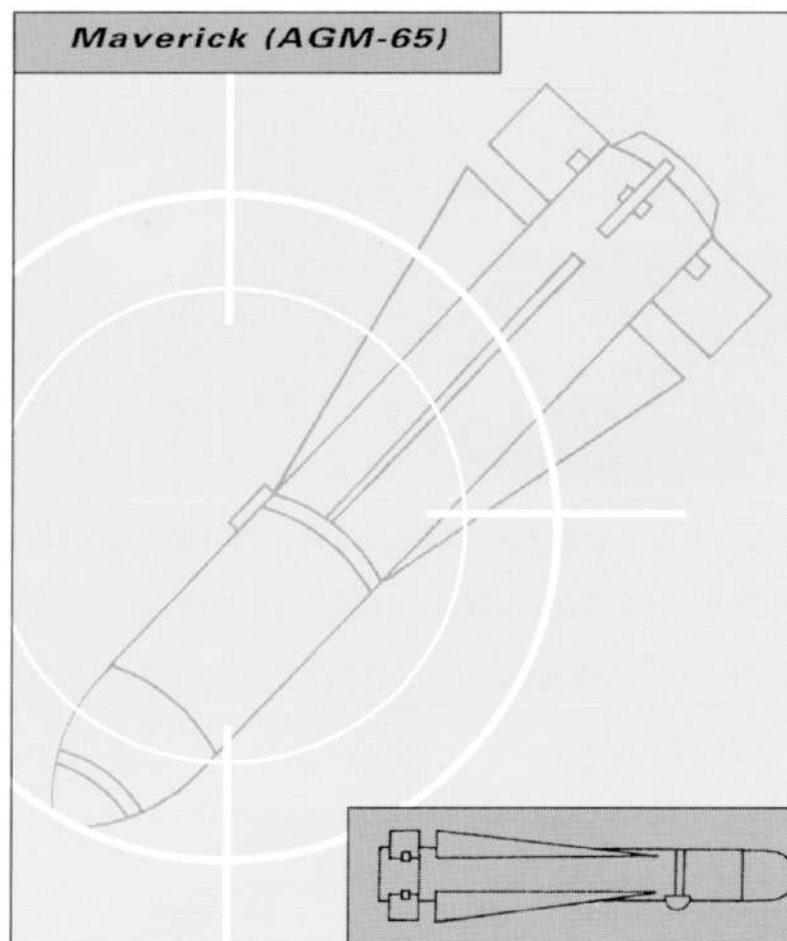
### **Maverick (AGM-65)**

Maverick is an air to surface missile that fills an important gap in the attack capabilities of a large number of aircraft and was designed for just that - to be a compact missile designed for carriage by several planes. The first Maverick possessed a TV guidance system which the pilot could point at and lock-on to a target. Later Maverick systems were fitted with an I.R. imaging system which allowed great accuracy, even at night.

### **To fire**

Select the infra red view from the nose of the Maverick by pressing F10. A cross hair sight will appear in the centre of the screen. To fire the Maverick with accuracy, you must

carefully manoeuvre the aircraft so the cross hair sight is over the target. Note that you are not moving the cross hair but the aircraft to attain target lock-on. When this is attained, press the SPACE bar to command the



missile to search the selected area for a valid target. The Maverick will then scan the area selected looking for possible targets. Once the scan is complete, it will lock-on to a target, surrounding it with a box. Break the lock with the 'X' key. To select any other possible targets, move the cross hair towards the new target and re-lock. Press fire to release the weapon. It is possible to zoom in or out using the [ ] keys at any time.

## **F18 only**

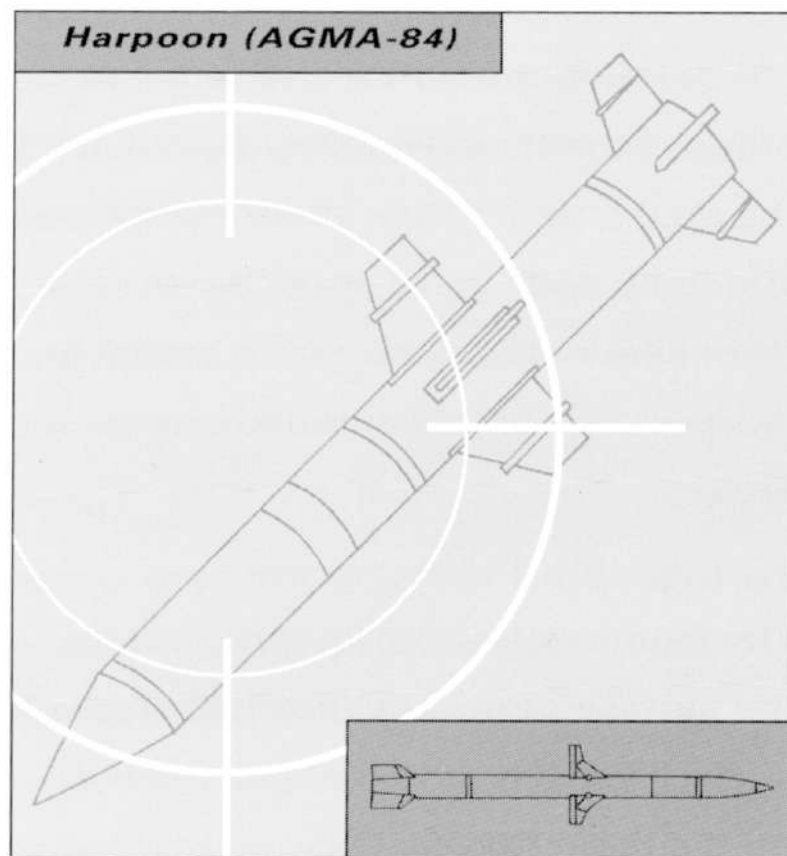
### **Harpoon (AGMA-84)**

Harpoon, as the name suggests, is primarily an anti-ship missile of the sea-skimming type. This means that once launched it hugs the sea, evading ships radar, only breaking into the radar detection zone when pin-pointing the target and seconds before actually striking the vessel. In the final attack phase, the Harpoon suddenly pulls up to strike the target from above- thus hitting the vessel in its most vulnerable and damaging area.

### **To fire**

The F-18's radar continuously scans the surface of the sea looking for surface vessels which are displayed on the radar MFD's. Once a target is

selected by pressing 'T' it will be transferred onto the HUD display with a targeting box surrounding it. Press fire, and the missile will guide itself into attack trajectory at wavetop height, using its radar in its strike phase.



## **F18 only**

### **Slam (AGME-84)**

Slam, the Stand-off Land Attack Missile, is a variant on the Harpoon, used for land-based targets. Replacing the radar homing guidance system of the Harpoon, which would be useless against appropriate targets on land, Slam is fitted with the Maverick I.R. seeker and the Walleye TV guidance system which, combined with a modified warhead suitable for the penetration of fortified targets (rather than metal skinned ships) makes the Slam a powerful ASM (Air-to-Surface Missile).

### **To fire**

Flying into the vicinity of and towards the target, the missile is launched in its general direction. F10 allows you

to view from the nose of the missile and manual guidance is attained by pressing the space bar and controlling in the same manner as the Walleye. Manual control should be used only when the target is in visual contact as the internal guidance systems will direct the missile with a much higher degree of accuracy over long distances than a pilot could hope to. Ensure level flight is maintained before switching to missile control.

## **F-18 only**

### **Mk82 (500lb) Mk83 (1000lb) Mk84 (2000lb) freefall bombs**

This family of bombs fulfil a vital tactical role in the arsenal of any strike aircraft. Essentially a traditional freefall bomb, the range includes Low Drag (LD) and High Drag (HD) varieties. The LD bomb allows the attacking aircraft to release the bomb some distance away from the target - the bomb then continues the trajectory of the attack towards the target. The HD bomb possesses a mechanism which scoops the air as the bomb descends, slowing the drop rate of the bomb. This ensures the bomb falls vertically into the target and allows the pilot to fly straight over the target to release the bomb. It

also lets the pilot clear the target before the bomb detonates - eliminating the possibility of blast damage to the aircraft.

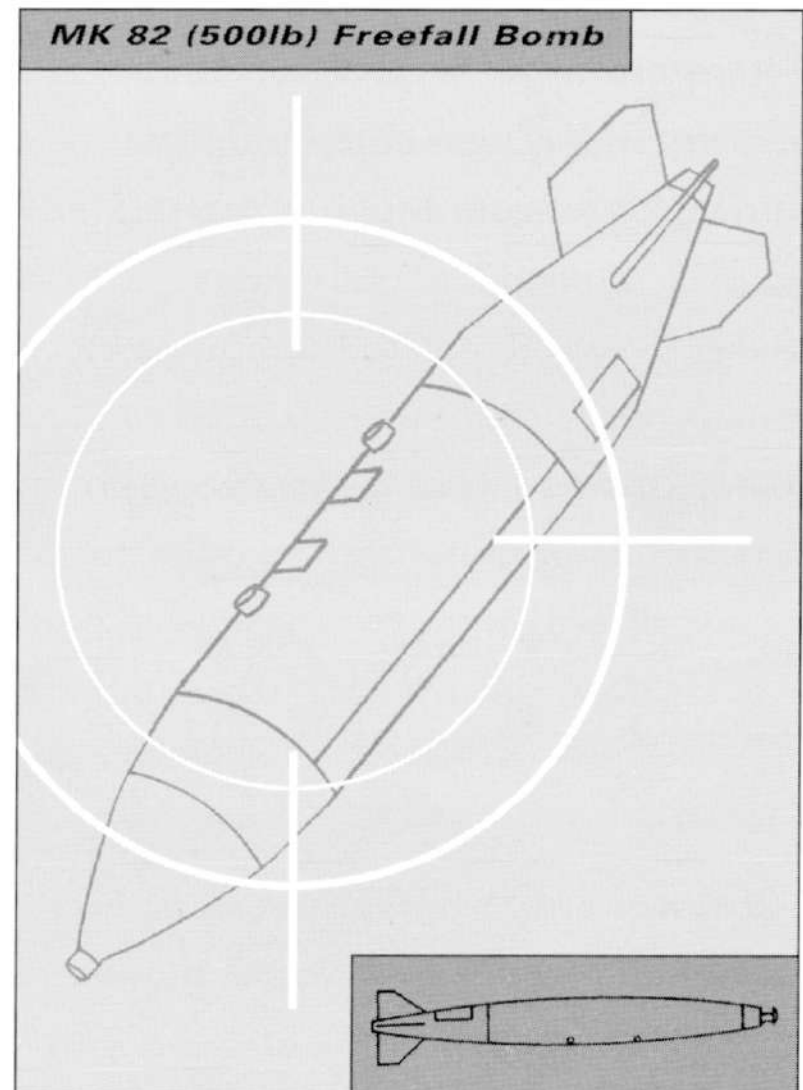
The type of bomb used depends upon the individual attack requirements and it is up to the pilot to decide which is suitable for any given strike scenario.

### **To fire**

#### *Level bombing*

Align the central cross-hair on the HUD display with the target. Next, lock on to the target by pressing the Space bar. If the lock-on box is not aligned with the target, release locking by pressing 'X' and then re-lock. As you close with the target, a vertical line is drawn on the HUD which allows you to keep on course

for the target. If the line deviates from the centre of the display, alter your course in the direction of the deviation until the line is re-centred.





When the top of the line hits the centre of the screen, the bombs must be released.

#### *Dive bombing*

Dive towards the target after gaining sufficient attack altitude and a circular CCIP symbol (continuously computed impact point) will be displayed - showing the point of impact if the bombs were to be released to that moment. Once the CCIP is over the target, release the bombs.

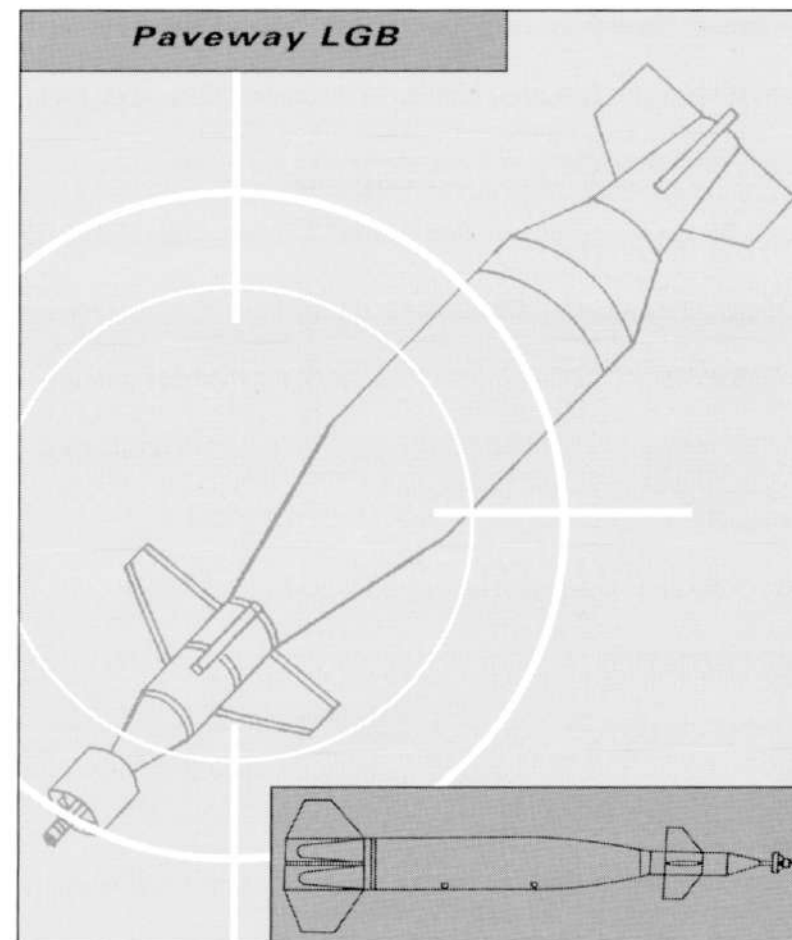
### **F-18 only**

#### **Paveway LGB's (Laser Guided Bombs)**

Paveway were developed out of a need for a tactical free-fall bomb which could be guided with extreme accuracy towards tactically strategic targets. The Paveway therefore allows standard freefall bombs to be converted into advanced LGB's with a subsequent improvement in accuracy. The guiding laser may be mounted upon either the release aircraft or another aircraft - or even carried by ground troops. The modern Paveway family used by the F-18 consists of the Mk83 (1000lb) & Mk84 (2000lb). CAP requires that the strike aircraft must be carrying the ASQ 173 laser tracking system before LGB's can be used.

### LGB bombing

Once LGB has been selected on the HUD weapons selection mode, fly towards the target at a uniform altitude and press F10 to view from the laser designator. Use the zoom keys ([)] for a more accurate view of the target and position the designator over the target. Lock-on to the target with the spacebar or 'T' key - press 'X' to cancel lock-on - and press fire to release the bomb. If the bomb is released with enough altitude and the plane was flying towards the target, then the bomb should hit if released within range. Typical Gulf War release altitudes were 15 to 20 thousand feet, so the attacker was above AAA (Anti Aircraft Artillery) levels.



## **F-18 only**

### **Zuni Rockets (LAU)**

Zuni are fired from a wing-mounted launcher and are especially effective against such 'soft' targets as supply columns and infantry units. Each launcher contains 19 rockets with an effective range of around 4 miles.

#### **To fire**

Line up the target with the HUD cross-hairs and press fire. Target identification is possible using the zoom keys.

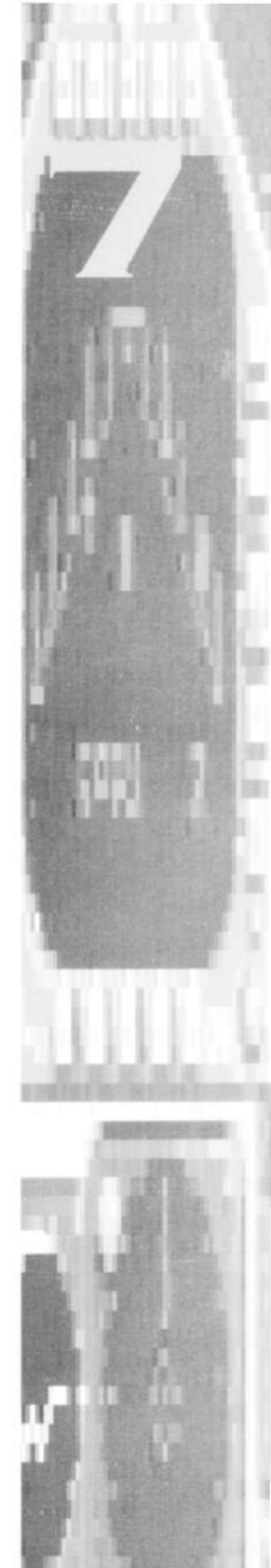
## **OTHER PAYLOADS**

### **Tarps**

The tarps pod is fitted to an F14 for reconnaissance missions. This pod contains an advanced camera unit which films a target during a fly-over reconnaissance mission to produce a picture of extremely high definition. The footage can then be used to plan attack missions.

#### **To Use**

Fly over the target and press F10 to view the tarps camera image. Adjust your flight path to pass directly over the target - continuing to view the ground through the tarps camera. Press fire to begin recording. Recording lasts for about 1 minute.



### **Laser Tracker (ASQ 173)**

The laser tracker is a facility that is mounted beneath the aircraft and allows laser guided bombs to be used by the aircraft. It offers electronic imaging of the terrain immediately surrounding the plane from which the target may be selected.

#### **To Use**

With the target within visual range, press F-10 to access the tracker. The cursor keys (or equivalent control) will allow the pilot to direct the movement of the tracker and move the cross-hairs over the target. The cross hairs must be placed over the target with extreme accuracy and therefore a magnification facility is available. Use the [&] keys to magnify the image through a factor of x2 up to a

maximum of x32 magnification and press 'T' to select a target 'X' breaks the target lock-on.

## **Chaff**

Chaff is carried by fighter aircraft as a defence against radar-guided missiles. When the aircraft detects radar lock-on by an approaching missile, it is necessary to release a cloud of metal strips behind the plane which fools the missile into thinking the cloud is a target - thus the missile destroys the chaff.

## **To Use**

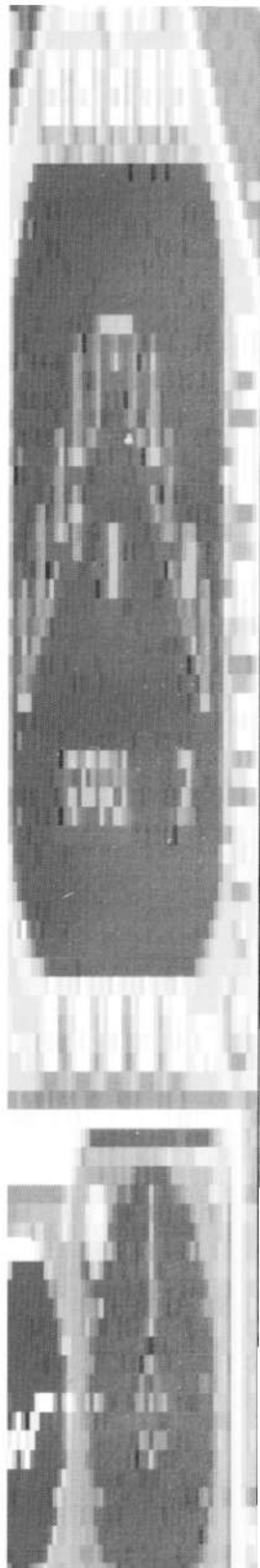
When the missile warning indicators (see page 94) display an incoming radar guided missile and the onboard computer says 'missile warning' then press 'D' for decoy and chaff will be released.

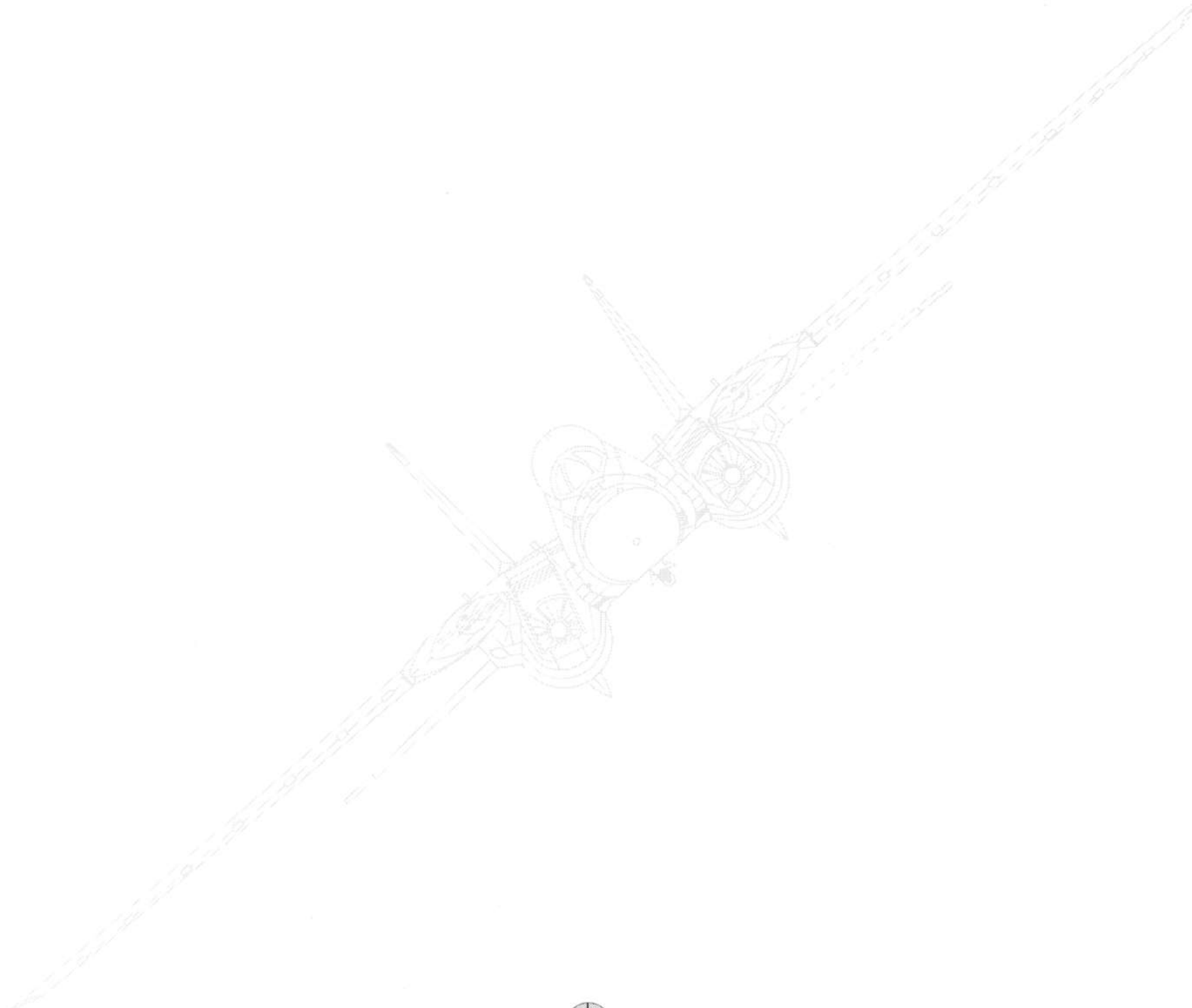
## **Infra-red Flares**

When an infra-red guided missile is tracking your aircraft, flares must be released to decoy the missile. These flares burn with a greater intensity than the aircraft engines and therefore should attract the missile. After releasing the flares, evasive action must be taken to distance the aircraft from the flare as soon as possible.

## **To Use**

When the missile warning indicators (see page 94) display an incoming infra-red guided missile and the onboard computer gives an audible 'missile warning' then press 'F' to release flares.









## FLIGHT OPTIONS

### System aim88

Length 4.02

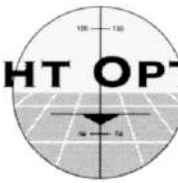
Height 1.11

Width 1.11

Speed 2

Range 18.5

## FLIGHT OPTIONS

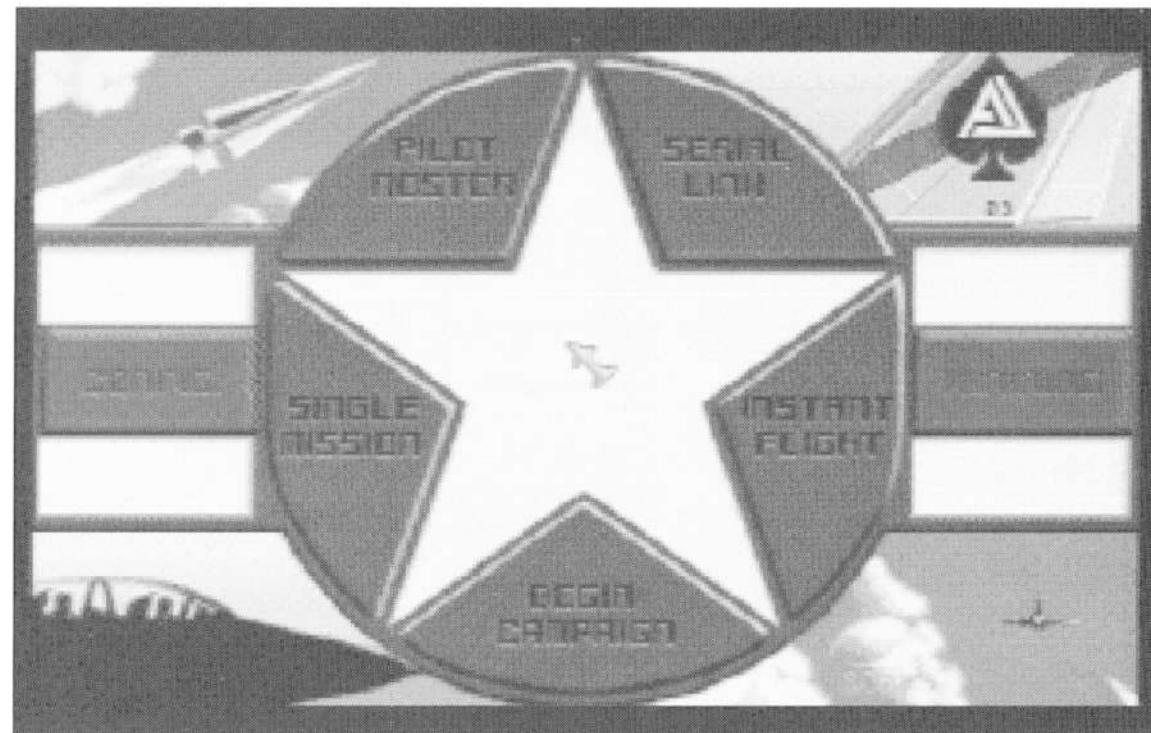


### MAIN MENU

When CAP initially loads, the game will revert to an automatically scrolling demonstration mode. To escape from this click the left mouse

button. If the game is in 'flight' mode, quit back to the main menu by pressing 'Shift & Esc'.

**The main menu screen offers 7 selections.**



## **CONFIG**

- Selecting this option allows you to select both SIMULATION and 3D WORLD options.

## **SIMULATION**

allows you to alter the simulation realism levels.

### ***Constant Speed***

- If you possess a fast-running machine which makes the game almost unplayable, select 'on' - the game will run slower with an increase in smoothness. If using a slower machine, select 'off'.

### ***Max. Enemy Aircraft***

- The number of enemy aircraft in the skies at any one time can be chosen.

### ***Personal Damage***

- Make your aircraft invincible by disallowing damage.

### ***Wingman Damage***

- Turn off for invincible wingmen.

### ***Unlimited Weapons***

- Turn on for an unlimited number of the weapons selected in the Hangar Deck.

### ***Crash Damage***

- If you collide with the ground, you will not be destroyed if turned Off.

### ***Hill Collision***

- Attacking certain targets may be difficult due to the surrounding hills. Select off to fly straight through them.

### ***Campaign Mission Start***

- Choose between beginning each mission of your campaign over your home carrier or over the target. 'Random' positions you randomly over either your carrier or target.

### **3D WORLD**

#### ***View Depth***

- Select HIGH for terrain in the distance to be visible but with a slightly slower screen update rate. LOW offers a faster sim speed with slightly less distance detail.

#### ***Day/Night***

- ON allows both day and night flight. OFF allows day flight only.

#### ***Clouds***

- Turn clouds ON or OFF.

#### ***Visible Payload***

- In-game payload simulation on/off.

### **TRAINING**

A mode which allows both novice and experienced pilots to fine-tune their skills in a large number of areas.

Flight training and weapons training against both air and ground targets is offered to hone your skills in all areas of combat.

## FLIGHT DECK/AIRBORNE

Select from any of the options and then from either FLIGHT DECK or AIRBORNE depending upon whether you wish to practice take-off or miss take-off and begin your training at altitude. Note that the Flight Deck or Airborne options are deactivated when certain options have already been selected - select Catapult and you cannot begin at 10,000 feet! If an option under the Weapons heading is selected, you will enter the hangar deck for armament before training can commence. This will allow you to practice take-off with a full payload.

Refer to the contents page to access the required information to practice the various options.

## PILOT ROSTER

Allows you to select a new identity, starting your first mission as a Rookie pilot, or to continue a saved game, taking on the experienced or Veteran status. You must enter the pilot roster before entering into a campaign, single mission or training session.

The list of pilots is displayed with their current status, rank and squadron identity. VFA-9 is the call sign of the Roosevelt's F-18 squadron, VF-41 is the F-14 call sign.

### **KIA**

lists pilots who have been Killed In Action. Needless to say, these pilots are no longer in a condition to commence any further combat air patrols.

### **RET**

lists pilots who were retired from the force, primarily due to injuries caused by ejecting from aircraft too often (ejecting several times may cause compression of the spine or one of a number of other disorders which will make the pilot unfit to fly). DISHON records pilots who were given a DISHONourable discharge due to malingering.

### **MIA**

refers to Missing in Action, usually after being shot down over enemy

territory.

### **POW**

is Prisoner of War. You are held to the end of the conflict in an Iraqi detention camp.

The pilot roster screen offers four sub-menus- Select, Info, Erase & Save.

#### **Select**

- Allows an existing pilot to be chosen continuing from a previous campaign.

#### **Info**

- Offers pilot information & statistics. Rank, previous mission success rates, squadron details etc. are recorded here.

#### **Erase**

- Highlight an existing pilot and select erase to remove the pilot from the roster and sign on as a new rookie



pilot. You're then asked for the pilot's name, call sign (the pilot's code name in the air) and the type of plane to be flown. choose from (F) fighter - F-14 or (A) attack - F-18.

### **Save**

- Save your current pilot and campaign position to disk. Even though your campaign & pilot status are continually updated throughout the operation, you are required to save your pilot to disk if you wish to leave Desert Storm to continue at a later date.

### **SERIAL LINK**

Allows the option of connecting two machines together for joint manoeuvres - or for a 'friendly' dog-fight. To activate the serial link ensure that a 'Null Modem' cable is linking

two computers together via the serial interface.

Each player then selects a pilot from the Pilot Roster screen. Next, choose which player and machine will be the 'master'. This machine will have to do more processing than the 'slave' machine and it is therefore advisable that the faster machine is used for this. If both machines are similar, choose which player wishes his pilot records to be updated to be 'master'. That player will then choose 'Serial link' from the main menu.

Both machines then exchange information. When this is complete, the master player will then select a mission, arm the aircraft at the hangar deck and enter the mission. The slave

player will do likewise and join the master player. Then decide if you're enemies or friends!!!

Serial players may choose any flight options - training, single mission or campaign. Enter a campaign by selecting a veteran pilot and then EXIT to return to the main menu. Then select Serial Link.

## MISSION SORTIES

## System f14

Length 19.18

Height 4.89

Width 19.60

Speed 2.34

Range 1600

## MISSION SORTIES



### INSTANT FLIGHT

When you first enter CAP, the instant flight option is an ideal selection for the novice or rookie pilot. This option places you above an enemy airfield piloting an F-14 and allows the rookie to familiarise his or herself with the flight controls. If night skies cover the gulf, 'I' gives cockpit instrumentation lighting and may be used in conjunction with your wing-mounted Infra-Red imaging equipment. 'V' selects a forward-looking mode, whilst 'C' offers a view of the COMED - with map view of the surrounding area.

### SINGLE MISSION

This option allows an individual sortie against a single selected target. Both air and ground attack are available although your role on a mission will depend on the type of mission. Air to air combat can be undertaken using either aircraft but if a ground attack role is selected with an F-14, you will escort attack aircraft into the target. Select the mission from the list of targets:

### **Fleet Barcap**

With enemy aircraft approaching the fleet, intercept aircraft must be scrambled to stop them. F-14's are the ideal deterrent although F-18's equipped with Sidewinders or Sparrows are mighty adversaries.

### **Bridge Busting**

Bridges were a primary target during the initial phases of Desert Storm. Taking out bridges meant that a vital artery of communication, not to mention troop and vehicle movement, was cut.

### **Train Busting**

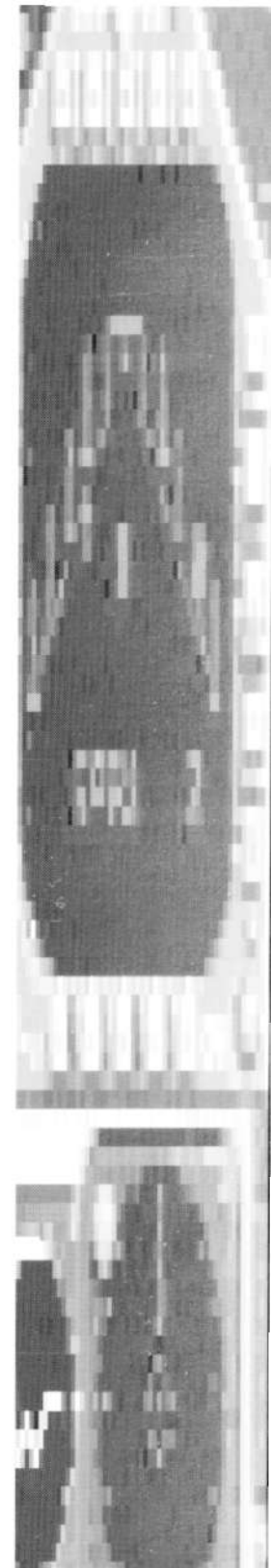
Similar to Bridge attack, trains allowed for rapid movement of troops into the fighting zones. Railways were vital to the Iraqi war effort.

### **Convoy Strafe**

The movement of large numbers of troops or armoured vehicles across both Iraq and Kuwait made important strike targets for Allied pilots. Strafe relates to the use of heavy cannon fire at a target.

### **Runway Strafe**

Air supremacy was perhaps the overriding objective of the early campaign. Knock out the runways and aircraft cannot mobilise.



### **Airfield Shelters**

Aircraft and important flight equipment were stored in bunkers and shelters close to airstrips. Airstrips can be repaired relatively easily. Aircraft and precision equipment suffering a direct hit cannot.

### **AAA suppression**

Anti-aircraft artillery shells are fitted with altitude and proximity fuses. This means that if the shell passes close to the aircraft, it will detonate - a direct hit is not required - and the shrapnel can prove extremely hazardous. The altitude fuse detonates the shell when it passes a certain altitude - the altitude that the gun crew calculates to be your height. Ignore them at your peril!

### **Scud Strike**

Scud missiles posed a huge threat to the stability of the Gulf region during the war. These mobile long-range missiles were capable of carrying nuclear, chemical or massive conventional warheads and were the most effective long-range weapons of mass destruction available to the Iraqis. Their destruction was imperative.

### **Convoy Strike (maritime)**

Both warships and cargo vessels would take up a convoy formation for maximum defensive capabilities. These targets combine massive defensive firepower and small targets.



### **Oil Rig**

Oil rigs were erected in the Gulf in peace time to extract oil. During the conflict, they were strategically important and often housed enemy heavy artillery emplacements. These were notoriously difficult to attack from the air.

### **Gun Boats**

Fast, well armed and tiny, these targets provide perhaps the most testing of air-ground strike scenarios.

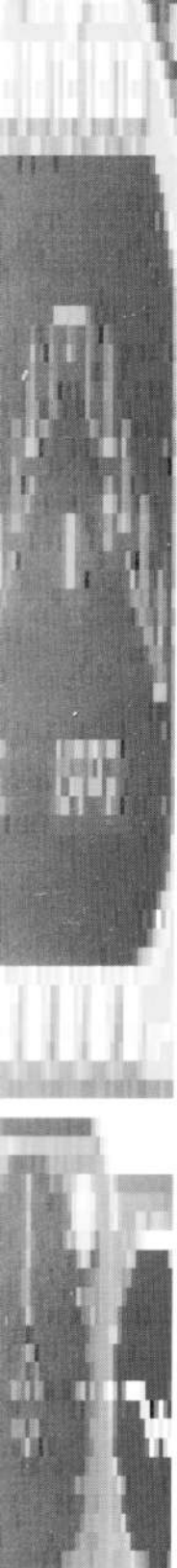
### **Tarps Recon**

Before heavy bombing of a target could be undertaken, important reconnaissance, including filming of the target, must be carried out for later analysis.

### **Surface Threat**

Surface attack upon the fleet by the enemy was an ever present threat. Attacks would comprise a number of vessels with a variety of attack/defence mechanisms and required both courage and accurate attacks from aircrews.

Once the option is selected, choose whether to take-off from the flight deck or remove the need for take-off and appear over the target.



**System f18**

Length 17.11

Height 4.89

Width 11.45

Speed 2.2

Range 1063

**THE CAMPAIGN**

## THE CAMPAIGN



Mission results are displayed during debrief.

The campaign is what Combat Air Patrol is all about. Here, the entire outcome of the war is in your capable hands and your performance is the make or break factor. Hundreds, if not thousands of lives are your responsibility and any decision you make in the comfort of the strategy room may mean the difference between life and death for any one of the 800,000 coalition troops at your disposal on the ground.

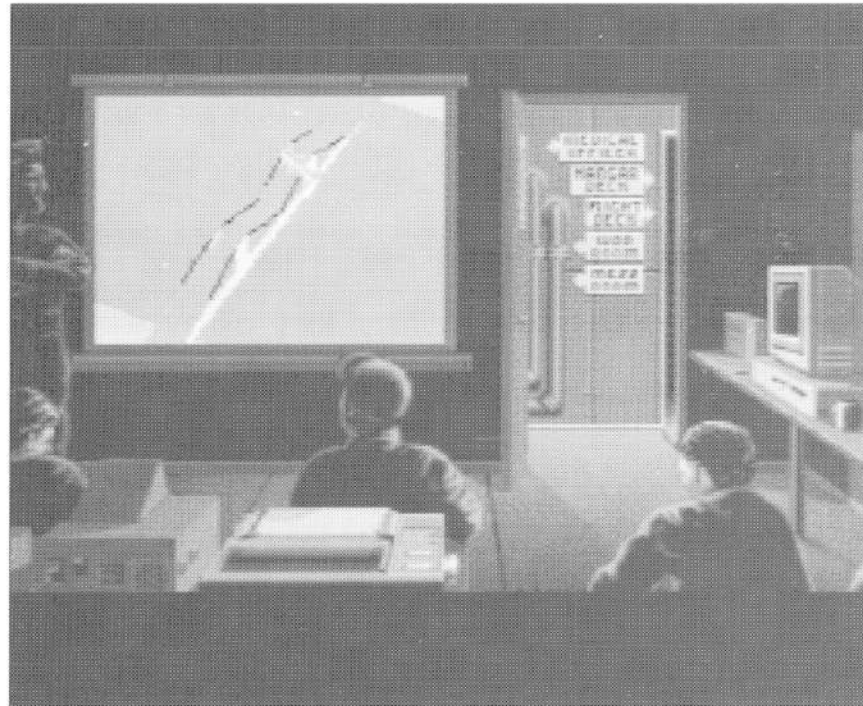
When entering into a campaign you must first go to the Pilot Roster screen

(described on page 47) to select a pilot identity. After this, you will find yourself in the Briefing Room. After completing a mission, you will be debriefed and then will return to the War Room before re-entering the Briefing Room to be given your next mission. This is because once you enter Combat Air Patrol, the campaign and first objectives have been decided. After this initial mission, ground troops are mobilised and it's all down to you.

## STEP 1: THE WAR ROOM

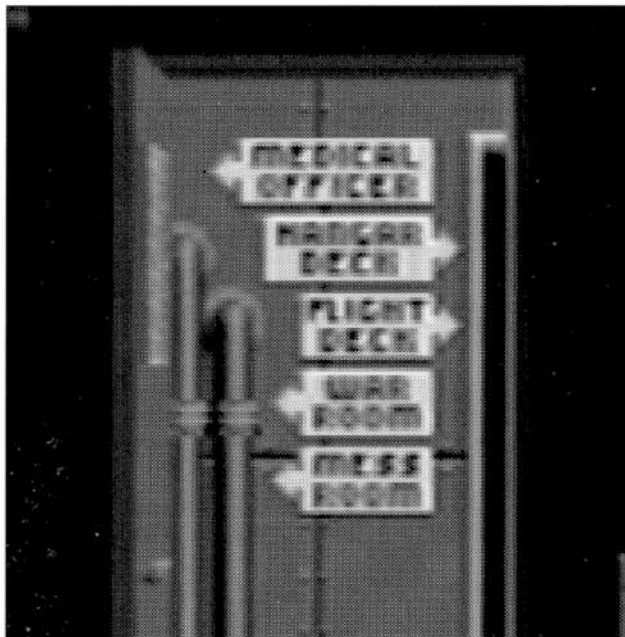
The first step in any conflict is to determine a campaign strategy. To do this, you must enter the war room.

The War Room contains a detailed map of both friendly and enemy forces. The position initially illustrated shows Iraqi forces in control of Kuwait and in a strong defensive position. Allied forces are prepared for an



invasion with all land units on the battle plan.

The first step when in the War Room is to decide upon a strategy. Desert Storm priorities were based upon the need to free Kuwait city and then drive Iraqi forces from sovereign Kuwaiti territory. Your objectives may be different.



## **GROUND ATTACK**

Once in the War Room, you will see a key to the respective units on the bottom right of the screen and a compass to the left of it. The key allows unit identification whilst the compass, in addition to pointing direction, is an active icon. The clipboard to the top right of your screen allows you to issue orders to selected units.

### **Armoured Division**

Comprise advanced battle tanks such as Challengers and M1 Abrams.

Armoured Units can barrage an enemy unit up to 3 'cells' away (a cell is the distance a unit can move in one turn). Effective against all other targets.

### **Mechanised Infantry**

Light armour including Warriors, Bradley AFV's, MRLS launchers. Especially effective against infantry & supply.

### **Infantry**

Basic infantry unit. Effective against other infantry units and supply.

### **Supply**

Provide all necessary food and ammunition supplies to any unit. If a Supply unit moves into a 'cell' occupied by a friendly unit, that unit will be 'absorbed' and will fully resupply that unit. If a supply unit moves into an enemy unit, it will partially resupply that unit. Similarly, if an enemy supply unit is captured,



then it will partially resupply the capturing unit.

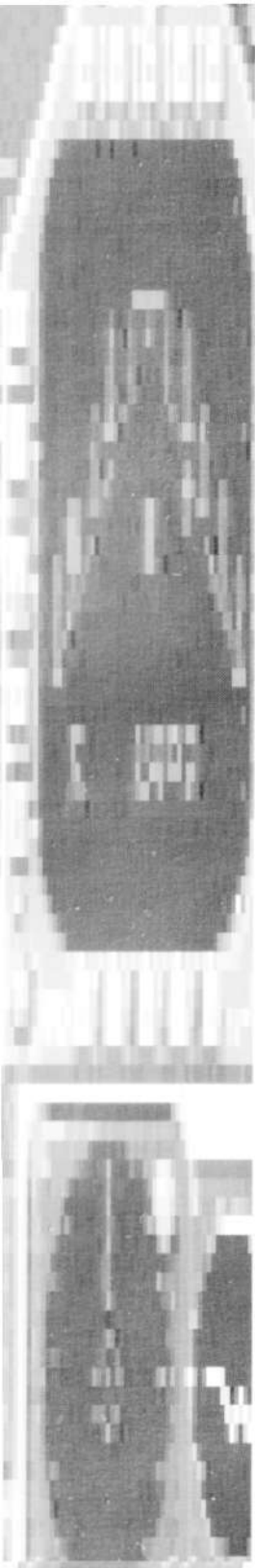
### **Commanding Air Strikes, Barrages or Reconnaissance**

To issue a command to a unit, move the mouse pointer over any of the clipboard command options and click with the left mouse button. The pointer will change into a command pointer. Move the pointer over the unit you wish to attack/barrage/reconnoitre and click the mouse. The selected unit will then display an order flag over it. Each command (except the Status Report command) can be used three times per day. The Status Report command offers an update as to the operational readiness of each selected unit. Hold down the

left mouse button over a unit to access this information. To alter any command, click on the unit to remove the command icon and choose a different target.

### **Moving a Unit into Battle**

Clicking the mouse pointer over the cardinal points of the compass will change the pointer and allow you to direct each individual unit on the battlefield. For example, click on North and the mouse pointer will change to a 'N' representing North. Next, select a unit you wish to move in that direction and click on it. An arrow pointing North will appear below the unit. You have now ordered that unit to proceed in a Northerly



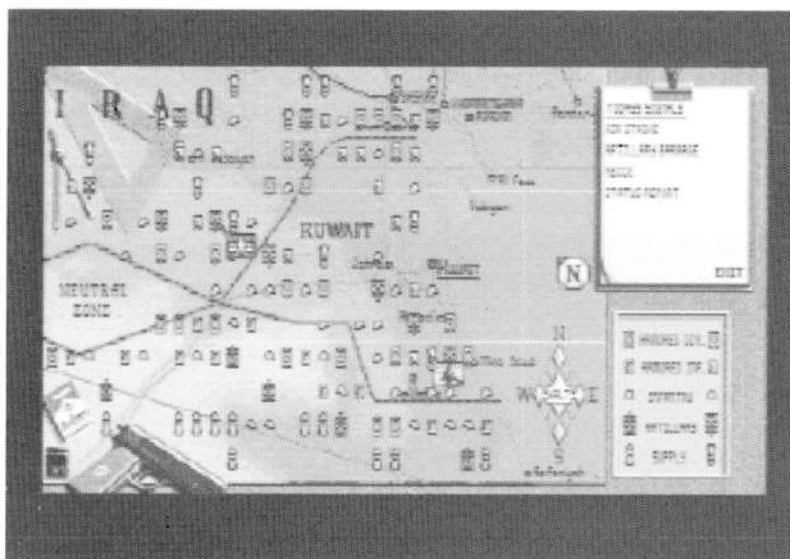
direction. In the course of a day, the unit will move one space to the North on the map. If the unit runs into an enemy, a battle will commence. Note that keeping the left mouse button held down and moving the pointer across several units will command several units in one sweep.

This means that it is imperative that the attacking unit is, at the least, an equal match for the enemy. Attacking a complete armoured division with a weakened infantry unit may not result in the result you were looking for! The choice of strategy is yours and the direction the campaign takes depends upon your tactical abilities and your performance as a pilot in completing your mission.

Once the appropriate strategy is decided, you must select EXIT to enter the briefing room. Once you re-enter the War Room after your mission, you will see your previous orders executed before entering new campaign commands.

## STEP 2: THE BRIEFING ROOM

The briefing room is where all mission information is briefed in to the pilots. Once on the briefing room screen, you will see a scene familiar to thousands of active service pilots throughout the world.



The picture below shows the layout of the briefing room and the equipment it contains.

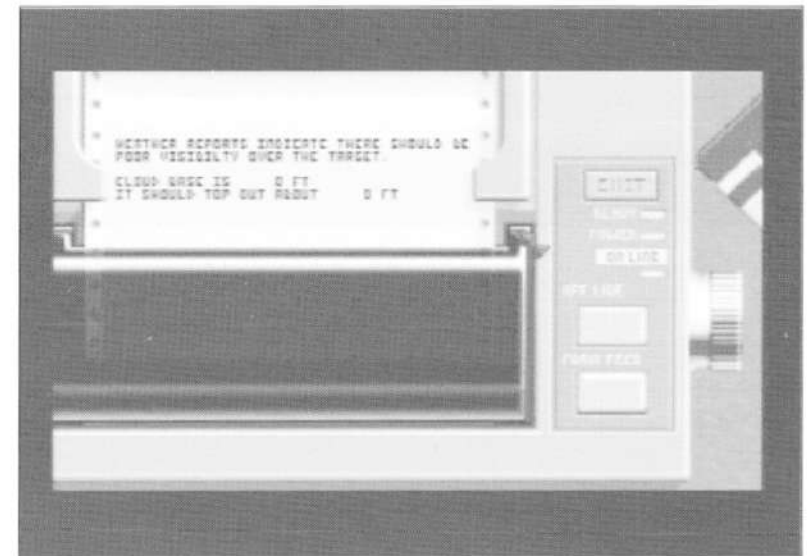
From the data displayed in this room, you will be able to recognise the target, identify appropriate attack strategies and be familiar with your mission flight path. To access this information, you must consult three vital pieces of briefing room equipment, each of which is accessed by simply double-clicking on the appropriate graphic on-screen.

### STEP 3: THE RECON/MISSION PROJECTOR

The first is the projector which projects both previous reconnaissance photography of the target, offering a fly-past view of the target, and current mission details. These details include; mission requirements, threats, fuel status, radio-frequencies and strike force details. Click on the projector itself to access this information.

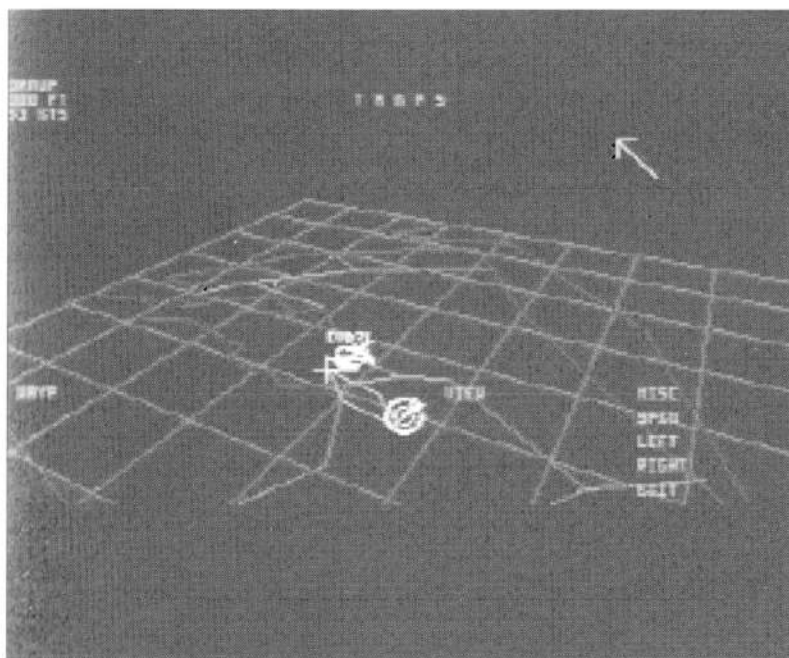
### STEP 4: WEATHER REPORT PRINTER

The second piece of equipment is the Printer which offers an up to the minute weather report indicating cloud cover and other useful flight information. Click upon the printer for a quick print-out. Click on EXIT to return to the Briefing Room.



## STEP 5: TAMPS DISPLAY

The final piece of briefing room equipment is the TAMPS display (Tactical Aircraft Mission Planning System). This is a vital piece of kit which allows the pilot a graphic display of the gulf area. The map can be rotated and manipulated to give an 'all-angle' display which includes the



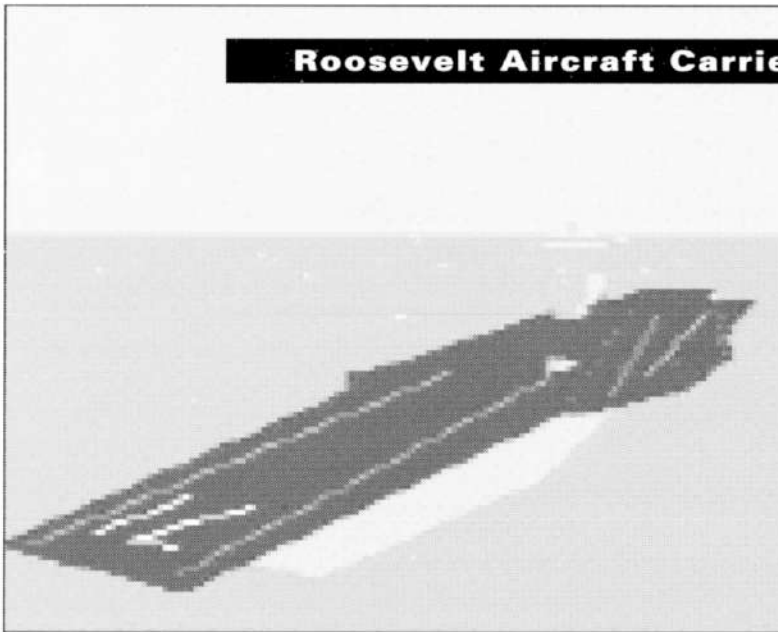
position of your mother vessel, waypoints (or planned mission flight path from carrier to sortie position to return) and an overview of the area. The display also pin-points known threats, such as SAM & artillery sites and airfields which will be encountered if the flight path is stringently adhered to - although the TAMPS allows the pilot to vary his flight path to avoid threats.

***Blue lines - Coast***

***Red lines - Country Borders***

***White lines - Waypoints***

**Roosevelt Aircraft Carrier**



**Friendly Victor  
Airborne Refuelling Tanker**





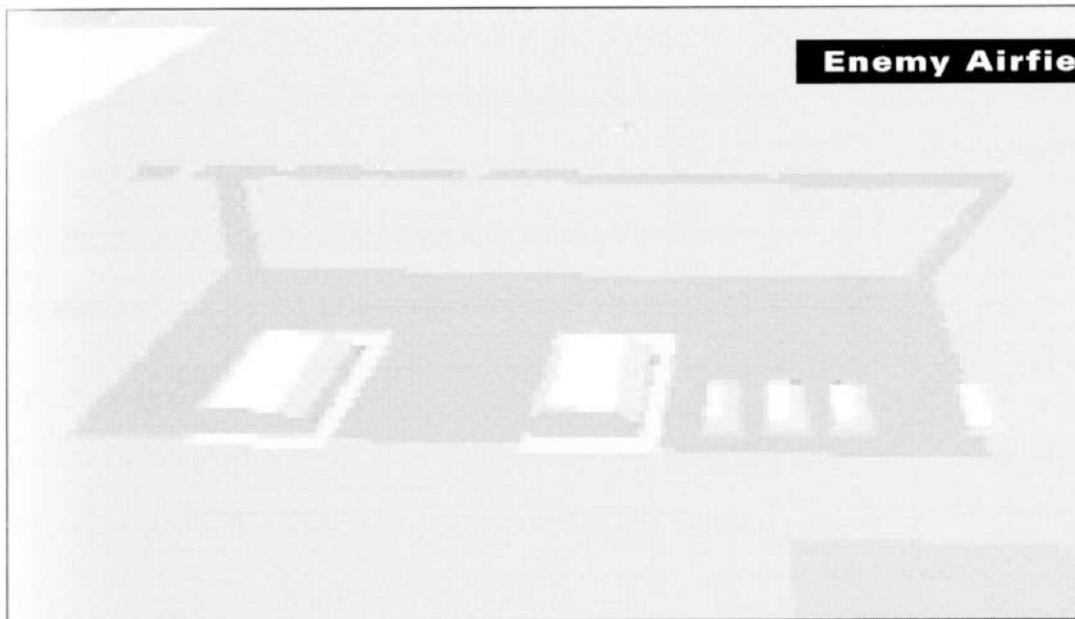
**Anti Aircraft Artillery**



**SAM Sites**



**Enemy Airfields**



## VIEW MENU

### ***Full***

- View the entire Gulf region.

### ***Target***

- View the target in relation to the carrier and current waypoints.

### ***Waypoint***

- Click on this option to zoom-in on the currently selected waypoint.

### ***Threat***

- This option highlights any enemy positions which you may encounter. From this information, you may wish to alter your flight path to avoid particularly heavy anti-aircraft artillery.

## WAYPOINT MENU

This menu allows you to view and manipulate current waypoints. Once a waypoint is selected, it may be moved using the cursor keys.

### ***Next***

- Move cursor to next waypoint.

### ***Prev***

- Move cursor to previously viewed waypoint.

### ***Split***

- Will create a new waypoint between the currently selected waypoint and the previous waypoint. This can then be moved and manipulated as required.

### **Delete**

- Remove the currently selected waypoint. The projected flight path will now pass between the previous and the next waypoints.

### **Alt**

- Adjusting the altitude of waypoints tells you and your wingmen (other aircraft on the mission) at what height they should fly. Setting the waypoint above 15,000ft will fly above anti-aircraft artillery. Use the left mouse button to increase altitude, the right to decrease. The waypoint altitude is displayed to the top left of the TAMPS screen.

### **Velocity**

- Increasing velocity makes you more difficult to hit with AAA but uses more fuel. If you're flying a long mission

and engage in air combat, you will use more fuel. Mission velocity is displayed to the top left of the TAMPS screen. Increase mission velocity using the left mouse button on the Velocity menu option, decrease it using the right mouse button.

## **A NOTE ON WAYPOINTS**

A waypoint is a position towards which the aircraft will fly and is used to guide the aircraft towards and away from the target. Once a waypoint is reached, the aircraft should head towards the next waypoint. Waypoints are calculated to steer the attacking aircraft away from enemy threats and direct the aircraft to the target using the most direct and safest course. The type of waypoint currently selected is displayed to the top left hand side of the screen.

There are a number of waypoints that are not moveable on the TAMPS. The initial waypoint is the position all aircraft will head towards to attain mission formation. This waypoint is not removable.

### ***The Formup waypoint***

is immovable because it is the point at which your aircraft and your wingmen group together before undertaking their mission.

### ***The Attack waypoint***

is also immovable because this is positioned directly on the mission target and is used to guide the attacking aircraft on the bombing run.

### ***The Land waypoint***

directs the returning aircraft back towards the carrier and is therefore immovable.

If it is expected that Airborn refuelling will be required, it is wise to either move your flight path close to the refuelling tanker or move the tanker close to your flight path. The position

of the tanker can be altered on the TAMPS screen by holding down the SHIFT key while pressing any of the CURSOR keys. Remember that your tanker aircraft is just as vulnerable to attack as you are so position it carefully and away from enemy threats.

The UP arrow is North.

### **MISC. MENU**

Use Spin to start or stop the display rotating. Choose Left to rotate clockwise, Right to rotate anticlockwise.

Exit leaves the TAMPS for the Briefing Room.

### **MEDICAL OFFICER**

Once a mission is selected, you may decide, for any of a number of reasons, you wish to sit out a particular sortie and let the battle commence without you. To do this, you must lie - plain and simple. Any fighter pilot worth his salt is eager to do his job and to sit it out is irreconcilable. Unless, of course, you're ill!!! Visit the Medical Officer, by selecting the Medical Officer sign, and plead your case... although be warned, don't push your luck too often or you may be discharged for malingering.



## **FLIGHT DECK**

This option takes you straight onto the flight deck of the Roosevelt, missing out the Hangar Deck altogether.

## **MESS ROOM**

Return to the Pilot Roster using this selection. If another pilot is selected, you will return to the main menu.

## **HANGAR DECK**

Once you have been briefed, your next step is to select the appropriate armament for your F-14 or F-18. To do this, select Hangar Deck from the corridor sign-icons. This will take you to the deck below the carrier runway to where your aircraft awaits. If the

mission is an air-to-air intercept or escort, you will find an F-14. Ground attack missions will require an F-18.

The picture to the right shows an F-18 ready for arming. All missiles are available to the F-18 except Phoenix. F-14 can only carry Phoenix, Sparrow and Sidewinder missiles. Extra fuel tanks, the Tarps recce pod and LGB Targeting System are also available.

## **Default.**

This option immediately arms the aircraft with a selection of missiles. It can be used to quickly arm your aircraft with a range of weaponry which can then be slightly modified using the remove and add options.



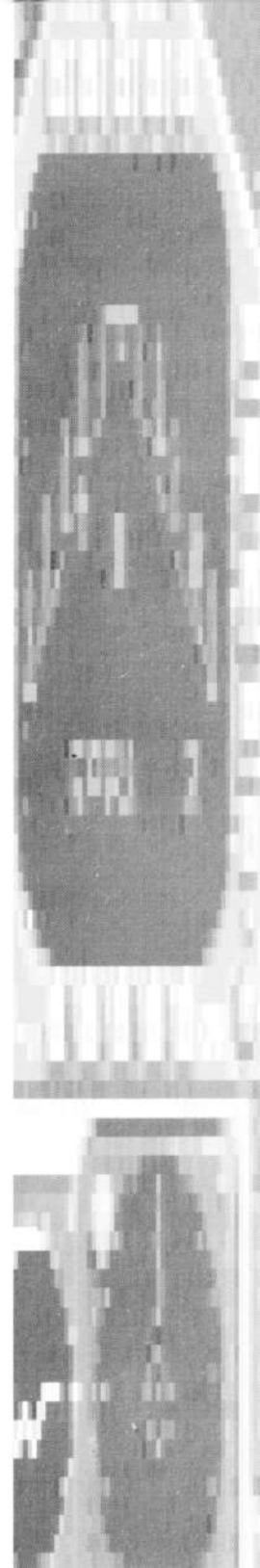
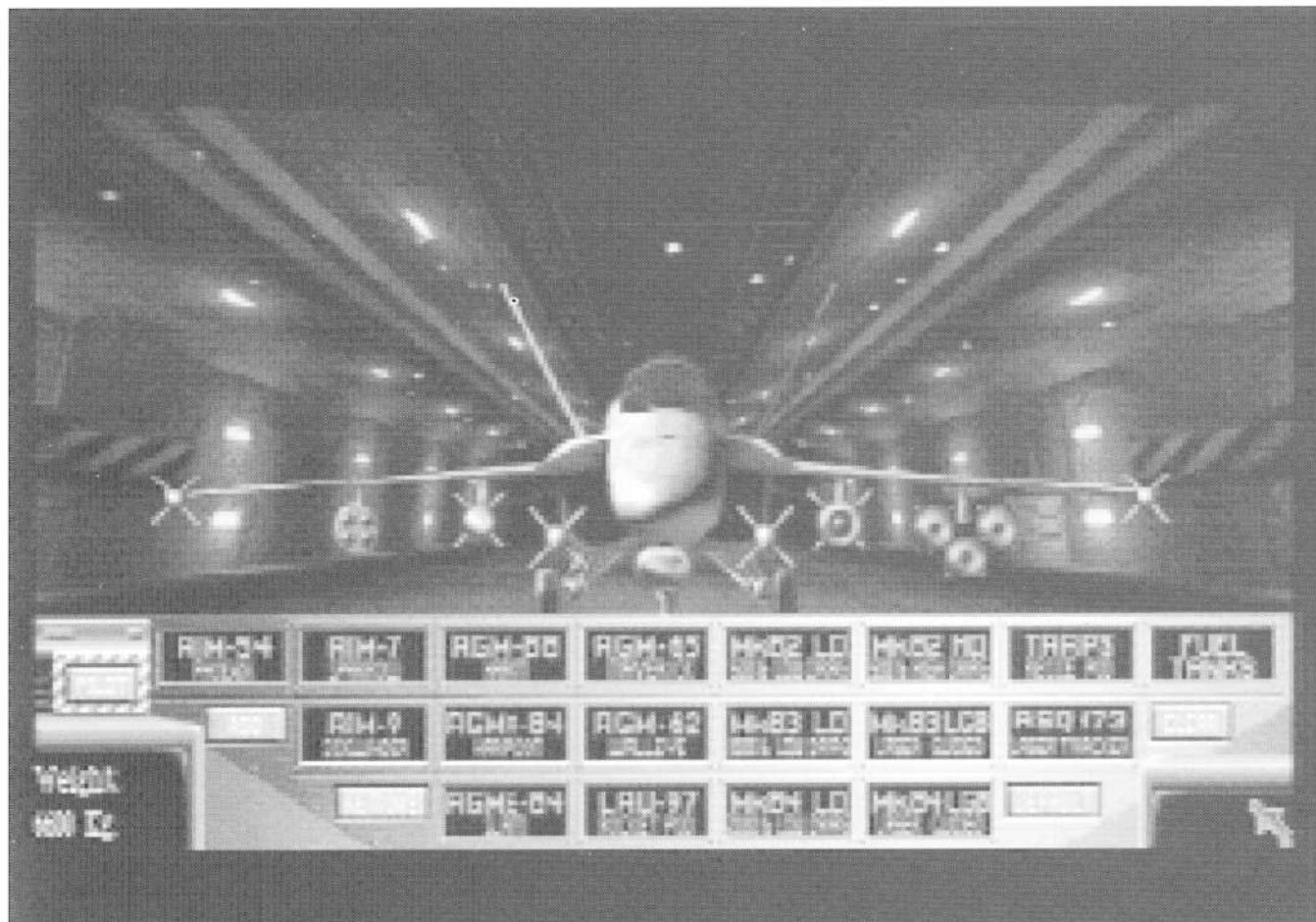
### Clear


Strips the aircraft of all payload. All pylons are free to accept armament.

### Add

The missile-shaped pointer is already in 'add' mode. This mode is necessary

to place missiles on free pylons. With the pointer in 'add' mode, move the pointer over the required weapon and the pointer will become that weapon. Then hold down the left mouse button and drag the weapon to any available





pylon. Arrows below the aircraft will indicate which pylons are suitable for holding that particular weapon. When the arrows become highlighted, release the mouse button to mount the weapon on the pylon.

### **Remove**

Click on the remove icon and the pointer will change. You may now place the pointer over a missile on any pylon and remove it with by pressing the left mouse button.

Once your aircraft is fully armed, select Pilot to move to the carrier flight deck and begin the mission (note that you must initially press F1 to enter the cockpit).

**System A6**

Length 16.88

Height 4.78

Width 16.10

Speed 0.94

Range 850

**FLIGHT CONTROL SYSTEMS**

# FLIGHT CONTROL SYSTEMS



## THE COCKPIT DISPLAY

As you enter the Cockpit, you see the control and instrument panels, the outside world, through the cockpit windows, and the HUD (Head Up Display) upon which some flight and all combat information is displayed.

### The Control Panel

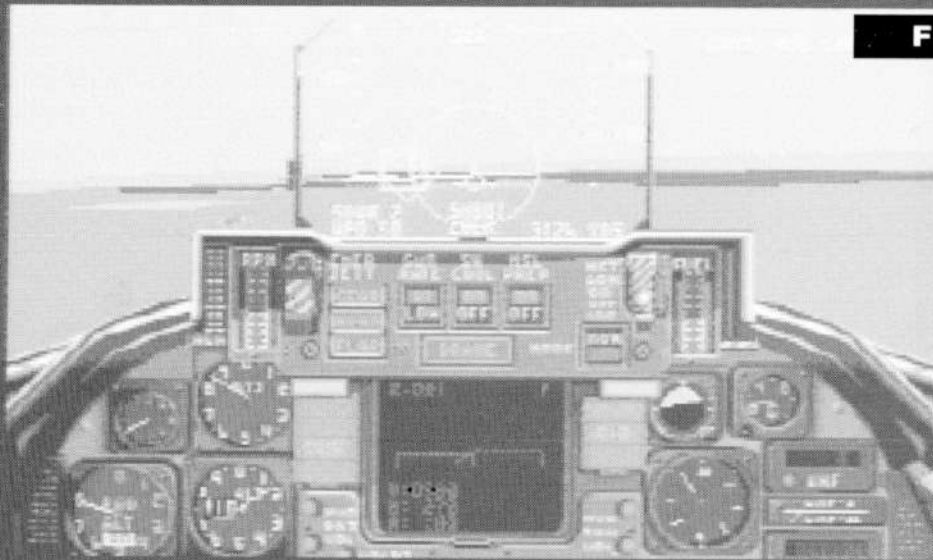
Both the Tomcat and Hornet share a number of controls and instruments which are essential for any aircraft. These instruments, such as altimeters and speed indicators may however be displayed in a slightly different manner, often using a variation upon

a standard instrument. The cockpit displays below illustrate precisely where each piece of flight information is displayed on each aircraft.

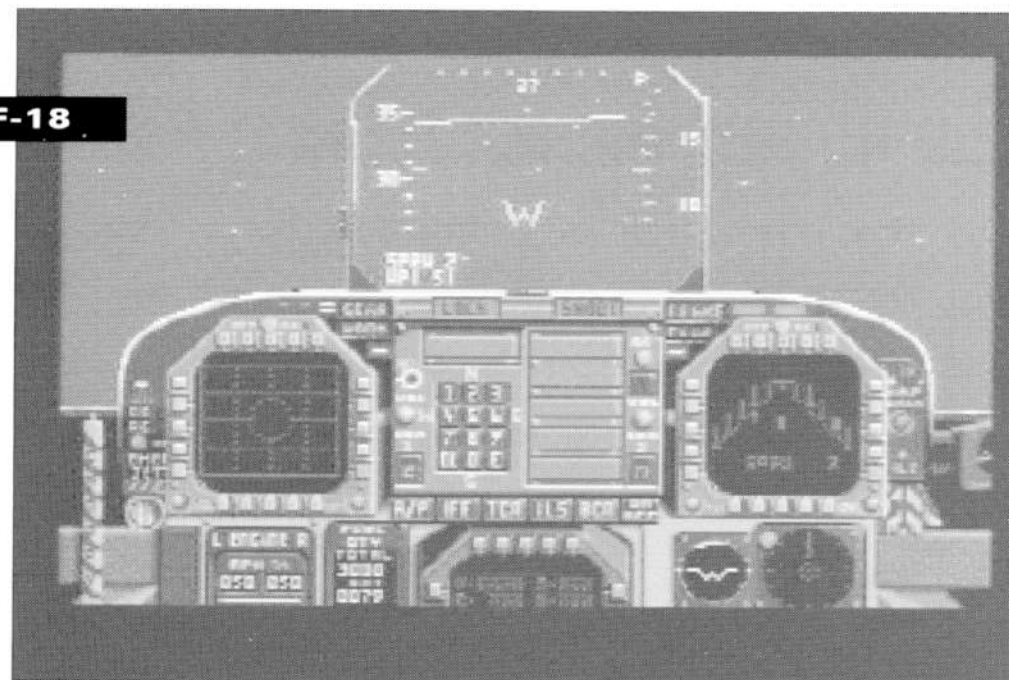
### Instrument descriptions

HUD- Head Up Display. A glass projection screen upon which flight information is displayed which was developed to allow easier information accessibility for the pilot. Three scale measurements for speed in knots, heading in degrees (with waypoint finder), and altitude in feet are displayed. The artificial horizon indicator can be seen in the centre whilst other flight and combat

F-14



F-18



information is displayed in the form of discretes (letters displayed on the HUD) to the bottom of the screen.

### **Direction W indicator**

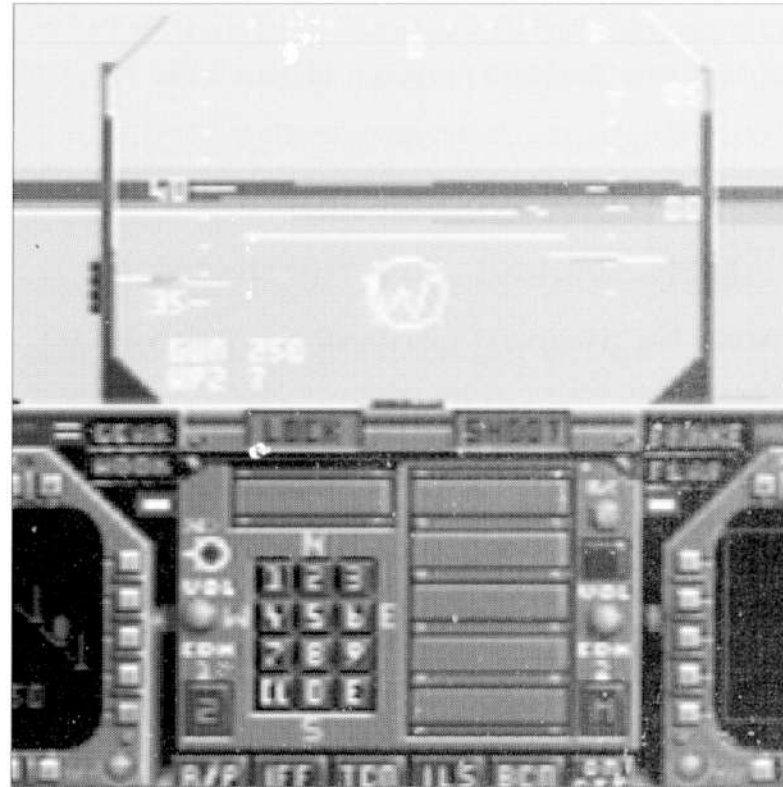
This symbol shows the actual direction the aircraft is heading. If the symbol was ahead of the aircraft in the air, the aircraft would fly straight through it. Note how the discrete drops down the screen as a climb is achieved. This is because the plane cannot ascend directly to the required point. The inertia upon the aircraft is such that it may well be pointed in the required direction but heading to a position below that point as the aircraft attempts to adjust its course.





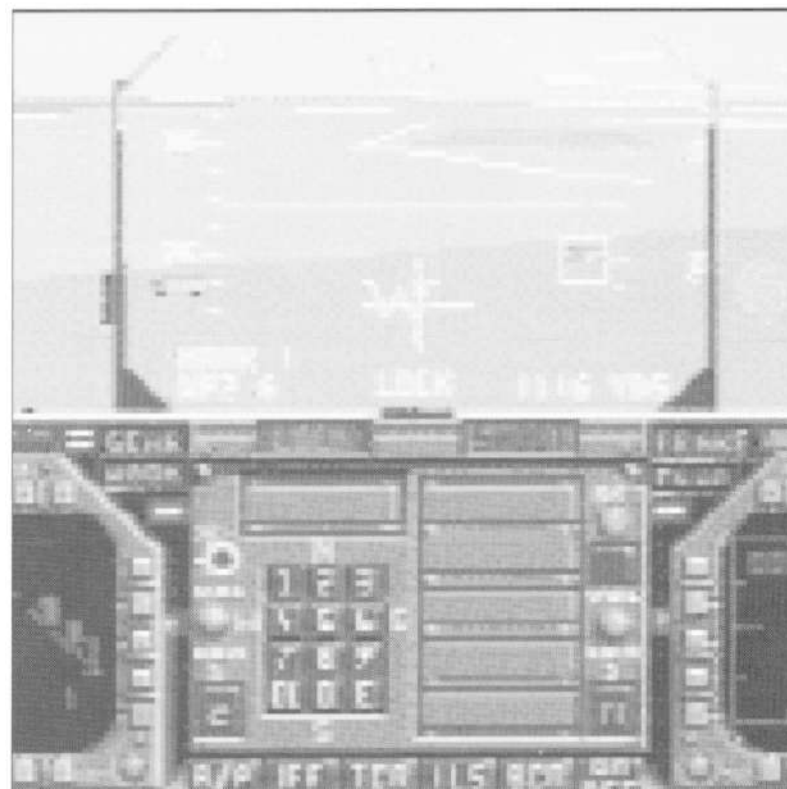
### **Gun 250 WP! 150**

This discreet would appear to the bottom left of the HUD and tell the pilot the HUD mode (in this case, Air to Air mode), which weapon is selected, which Waypoint he is heading towards (in this case Waypoint 1) and the distance in nautical miles to the waypoint (here 150 miles). Note that in A/A or A/G mode, the pilot tells which mode he is in by the weapon name on the HUD.



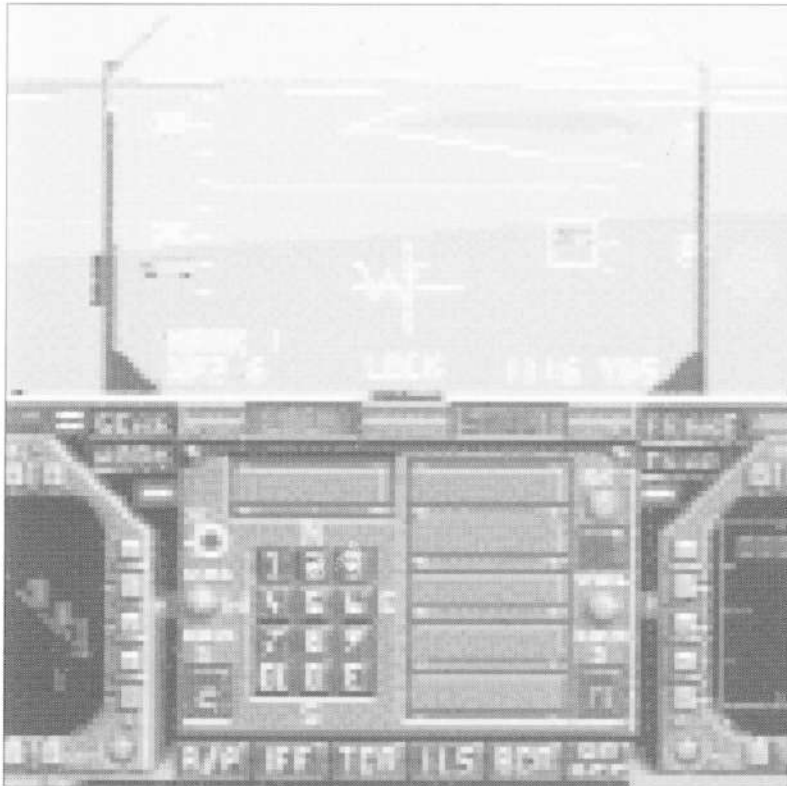
### **Waypoint discretés - actual discrete & left/right discrete**

Your flight path towards the target is defined by waypoints (input via the TAMPS display). The first discrete must be aligned centrally on the HUD. When it is in this position, that means that you are currently heading directly towards the next waypoint. Deviation from this course will move the waypoint discrete to the left or right of the central position. If you are flying way off target, the second discrete will appear to the left or right of the direction indicator. Adjust your direction in the direction of the discrete and the waypoint discrete will reappear.



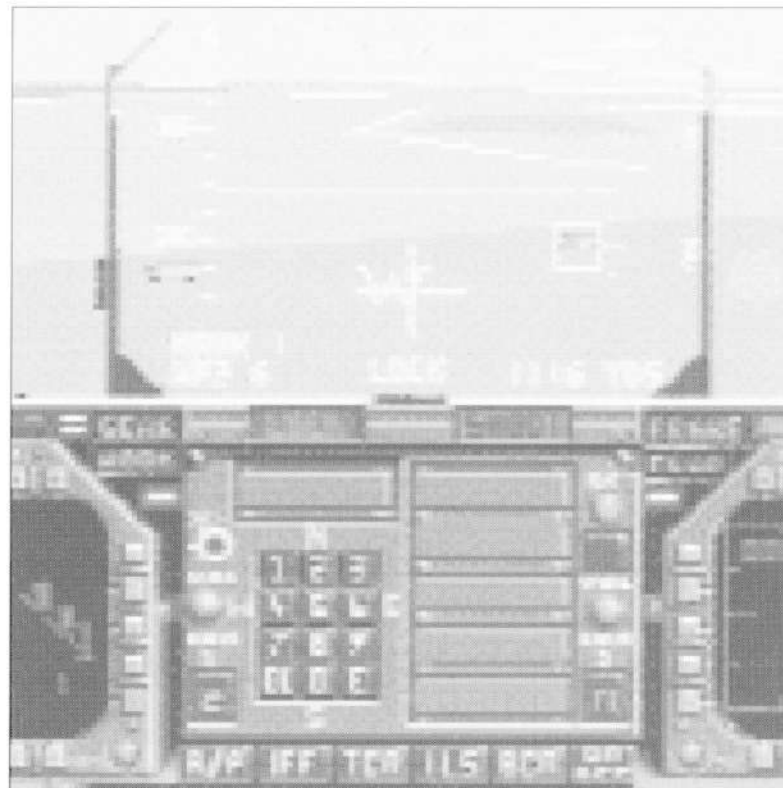
### Cannon discrete

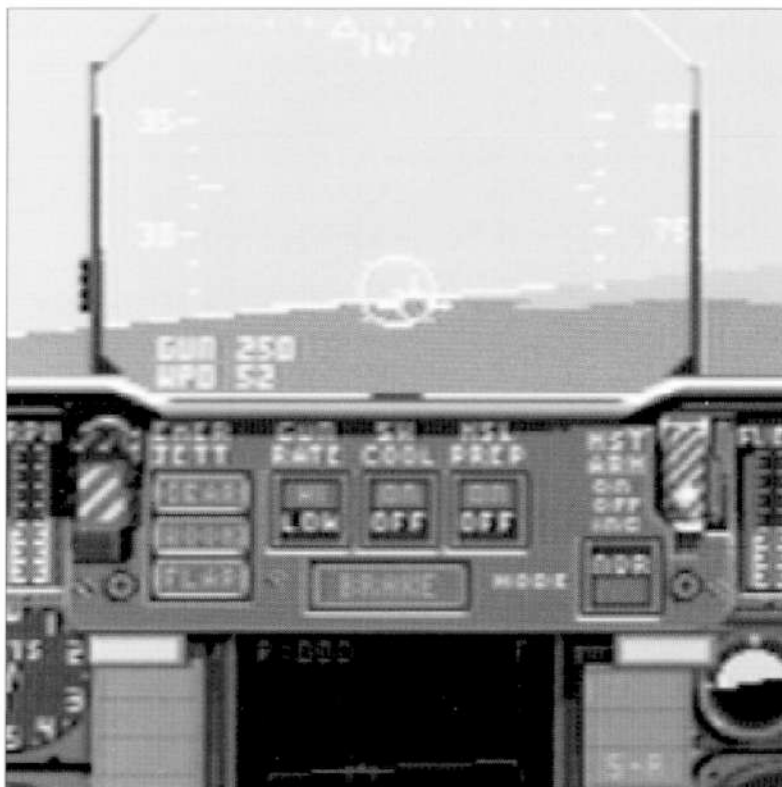
Align the cannon discrete with the target discrete and fire.



### Aircraft radar target discrete

When the radar is operational and the 'T' command is given, the radar will scan for possible targets. When a target has been selected, this discrete will surround it. To select other targets, continue pressing 'T'.



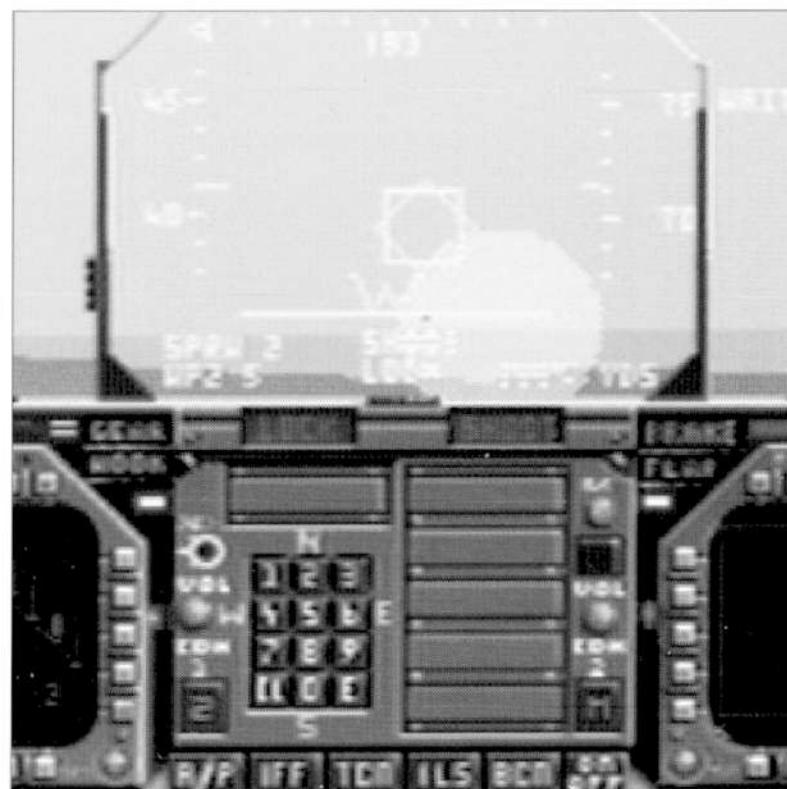


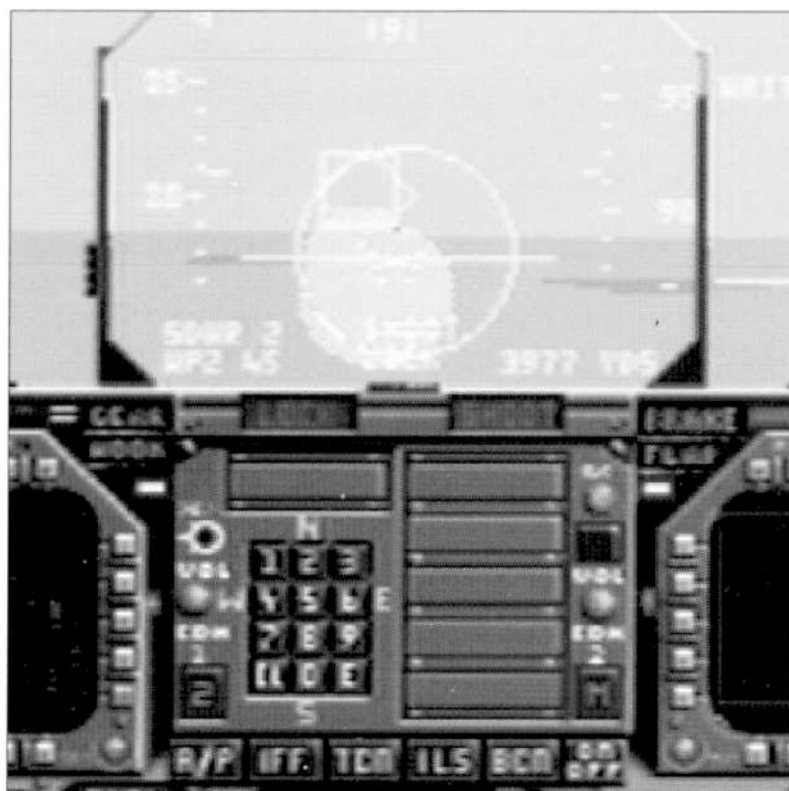
### Missile radar target discrete

Your A/A missiles house radars. The tracking of this radar is shown by this diamond-shaped discrete.

### Target lock-on discrete

When both the aircraft radar and missile borne radar lock-on to a designated target, this discrete appears on the HUD display. Launch your missile.



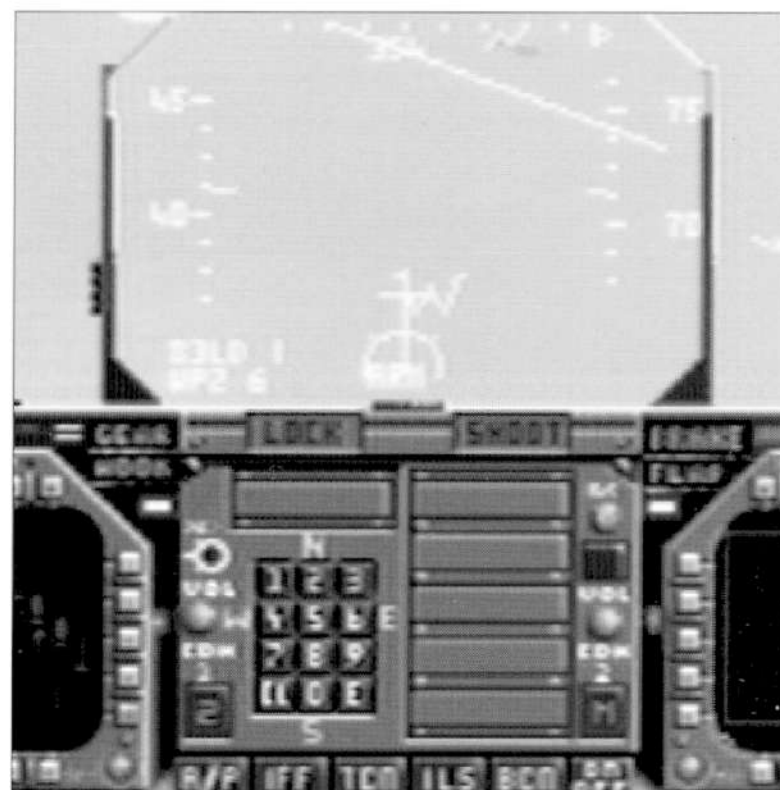


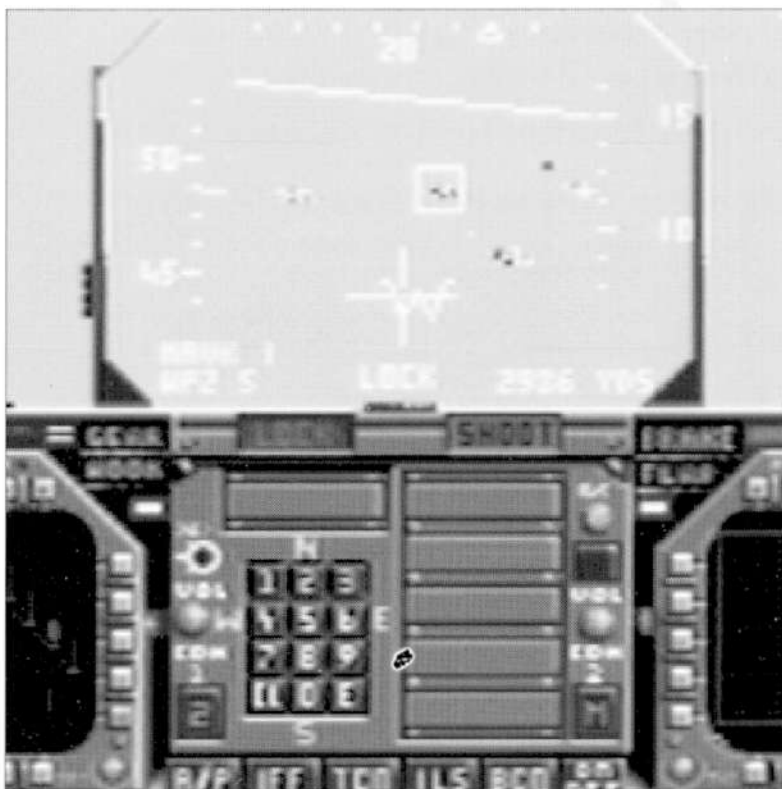
### **Circular Sidewinder discrete**

Fire when the enemy target is within this discrete and there is a high strike probability.

### **Drop bomb target tracking discrete**

With a freefall bomb selected, this discrete will show precisely where the bomb will impact - in the centre of the circle.





### **Cross hair targeting discrete)**

For all A/G missiles except freefall bombs, a cross hair sight allows the missile alignment with the target.

### **Fuel**

Indicates amount of fuel in tanks

### **RPM**

Revs Per Minute. Shows how much power the engine is producing. The higher the reading, the faster the aircraft is able to go and the faster the fuel reserves are used up.

### **L Engine R**

Allows manipulation of RPM on the F-18. A maximum of 100% is available with an extra 63% using full afterburners on take-off and in combat.



**Angle of attack**

Attack of the aircraft upon the atmosphere rather than in combat. When an aircraft rises, the angle of attack of the wing surface upon the surrounding air increases.

**Gear**

Raises or lowers undercarriage, required for landing/take-off.

**Hook**

use when landing. On approach to landing, the arrestor hook must be lowered. When the plane lands on the runway, the hook will catch upon a strengthened cable which is designed to slow down the aircraft and assists in bringing the plane to a halt.

**Flap**

Flaps operate automatically and increase lift at slow flight speeds.

**Brake**

Air brake to retard forward motion and assist landing. Brake should be released prior to take-off.

**Air-speed indicator**

Calibrated in Knots, measures forward speed.

**Vertical speed indicator**

Measures relative vertical speed. Basically, how fast you are climbing or falling.



### **Altimeter**

Utilises external barometric sources such as air pressure to measure the altitude of the aircraft.

### **Radar altimeter**

Uses radar to give a precise reading on distance from rising & falling ground.

### **Artificial horizon**

A useful visual indicator to show at a glance just where the horizon is. Co-ordination can become impaired in combat and this instrument allows the pilot to line up the aircraft with the horizon.

### **Gravity indicator**

Measures the force, in G's, upon the aircraft - and pilot.

### **Horizontal situation display**

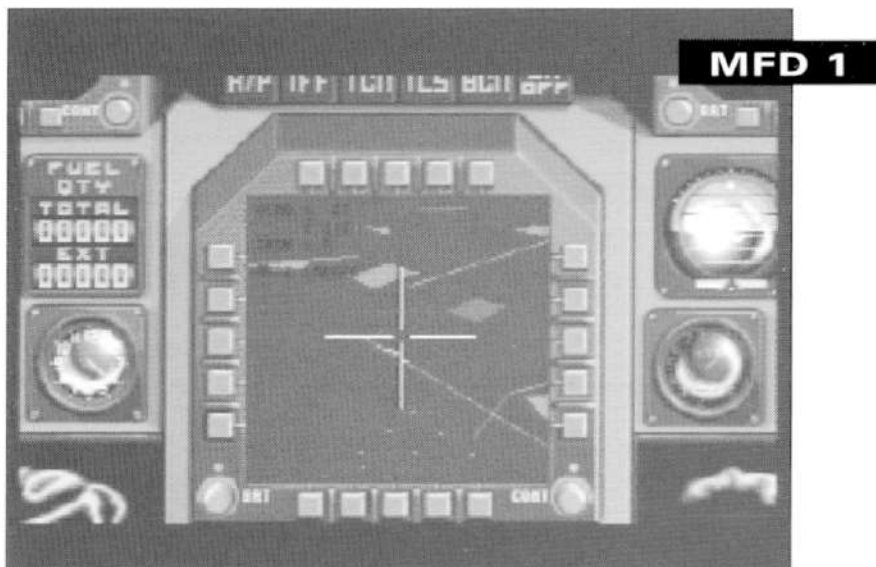
Shows current heading. North is straight up.

### **MFD (Multi-Function Display)**

A multi-tasking display linked to a central processing unit which also controls a number of vital functions such as target identification, weapons' selection and several other important functions, depending upon which aircraft is in use.

## F-14

The F-14 has two MFD modes. Toggle between them using the '1' key. Note that two radar-dependant MFD modes cannot be displayed simultaneously.



**R:** Range indicator, calculated in nautical miles

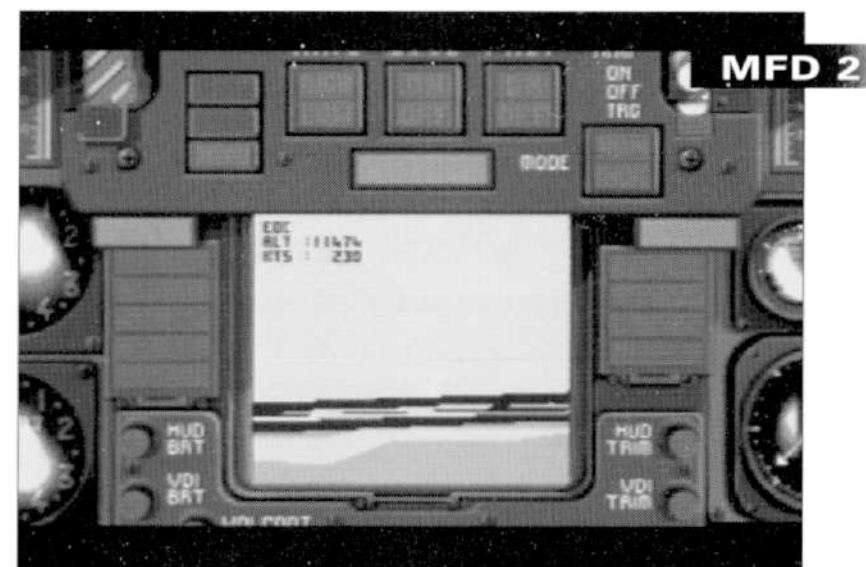
**V:** Velocity in mph

**H:** Heading in degrees

**A:** Altitude in feet x 100

This MFD mode shows an artificial horizon to allow the pilot immediate situation information which is essential during heavy manoeuvres where the pilot may come disorientated. Friendly or enemy aircraft are displayed as a radar 'blip' on the display. Once an aircraft is locked-on to, your aircraft will automatically 'interrogate' the unidentified plane - if it is an enemy, it will not respond correctly and the 'I' for interrogation symbol will continue to be displayed to the top right of the MFD. If the aircraft is friendly an 'F' will show.

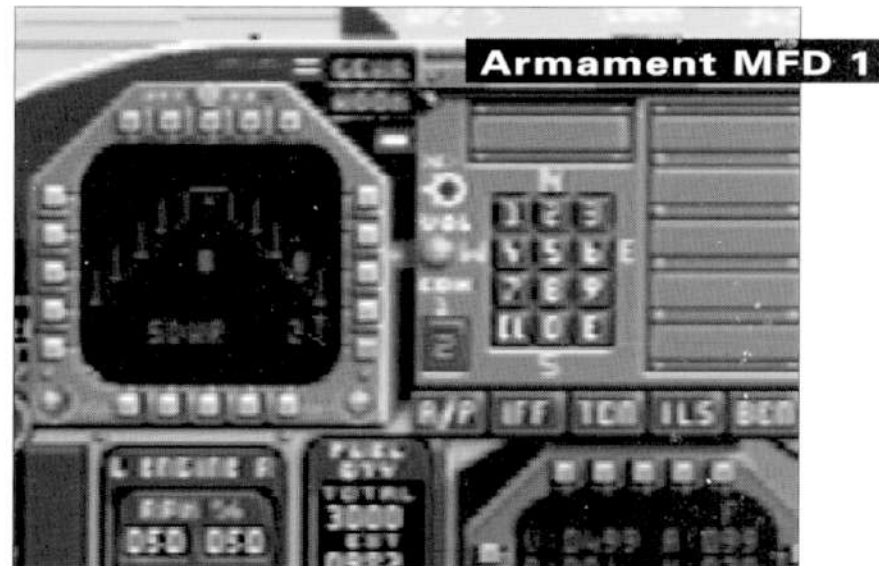
This MFD mode accesses the Electro Optical Camera (EOC) which is housed in the nose cone of the F-14. This powerful camera can operate in the darkest situations and allows any possible target to be viewed with clarity, even at night. The effective range of the camera is approximately 10 miles although a target may need to be considerably closer before effective visual recognition is possible. The camera magnification is also displayed to the bottom right of the display.



## F-18

With the F-18's two MFD's, identical information is not allowed to be displayed on both screens simultaneously. For example, selecting two radar-based screens such as the horizontal and vertical display screens is not possible because you are then asking the radar to adopt two conflicting scanning modes simultaneously.

The Armament Display simulates the wings and pylons of the F-18 allowing an instant view of the remaining weapons. The arrow points to the currently selected pylon whilst the name and the quantity of the weapon are shown at the bottom.



MFD display 2 is the vertical situation radar display and offers a view straight ahead from the nose of the aircraft. The central circle simulates the nose cone and therefore any 'blip' above the circle indicates the presence of an aircraft forward and above the F-18.

The horizontal situation display offers a plan view from above the aircraft illuminating the space immediately forward of the F-18. Your aircraft is at a bottom/central position and a position directly ahead is indicated by the top/central marker. Any aircraft displayed on the screen is therefore to the front and either left or right according to its position to the left or right of the central markers.



**Horizontal MFD.**







The F-18 has two MFD's, both of which display the same information but allow the pilot access to two screens simultaneously. Toggle between the modes using the '1' key for the left display and the '2' for the right.

The final MFD display is the Instrument Landing System display. This is used when on approach to your home carrier for landing. The Roosevelt appears as a plus sign on the screen. Align the plus with the central line and the carrier is directly ahead. Use this mode in conjunction with the HUD ILS mode.

## **RADIO**

- Allows contact with airbase and friendly units - keeping you informed of campaign events as they unfold. An airborne refuelling plane, additional support etc. may be requested using the radio. There are five radio channels available to you. To operate, press 'N' and the radio will scan for the appropriate channel. The frequency selected will be displayed to the top right hand side of the screen. The radio set has two tuning channels, allowing the guard channel to be simultaneously tuned together with any other channel. Once the channel is selected, the appropriate information will be communicated.

## **Guard Channel.**

Use the Guard channel to find out what your wingmen (fellow pilots on any particular mission) are doing. They will tell you, amongst other things, that they are: waiting to take off, launching, forming up for flight to the target, enroute to next waypoint, beginning an attack run etc. The guard channel is constantly tuned using one of your channels.

## **Carrier ATC channel.**

Tuning to this channel informs the carrier you wish to land. The carrier atc will inform you when you have clearance. If you have an emergency use the emergency atc freq.

### **Carrier Emergency ATC channel.**

If you have an emergency and need to land straight away use this channel.

### **Search And Rescue Channel.**

If you know you are going to eject it is wise to try to inform the SAR services.

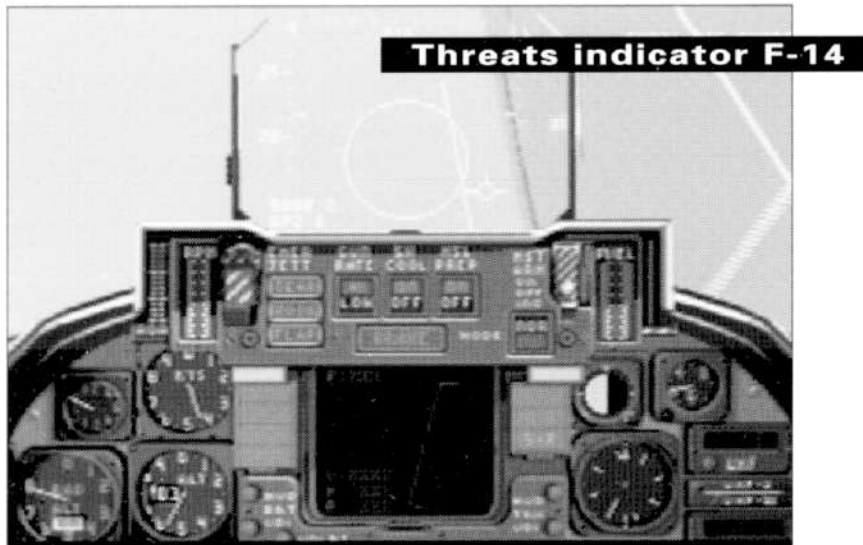
Tune into this channel for as long as possible before ejecting to increase your chances of being picked up.

### **Air Tanker Channel.**

When you need to refuel fly to a position behind a tanker and select this channel. The tanker crew will give you permission to refuel and tell you when your tanks are full. If there are several planes waiting to refuel you must wait for your turn.

## **THREATS/WARNING INDICATOR**

- Displays information about enemy missiles. Allows evasive action without the need for visual recognition.



### **F-14**

The Threats warning indicator fitted to the F-14 is mounted either side of the MFD. Radar lock-on warnings are displayed to the right whilst fuel, fire and missile warnings are to the left.

## ***RADAR:***

Indicates that a radar of some description is locked-on to your position.

### ***A-A:***

An air to air missile guidance system radar is locked-on to you.

### ***S-A: A***

Surface to air missile guidance system radar is locked-on to you.

## ***FUEL:***

You are low on fuel. Refuel as soon as possible.

## ***FIRE:***

Either the port or starboard engine is on fire. Shut down the appropriate engine.

**IRM:**

Infra-red Missile lock-on. An IR missile is currently in flight and heading towards your position. Evasive action or flares must be used.

**RGM:**

A Radar Guided Missile is homing in on your aircraft. Emergency evasive action must be used with decoy chaff to avoid being shot down.



**F-18**

The F-18 threats display is a circular instrument mounted to the bottom right hand side of the instrument panel. The Hornet is in the centre of the screen and any enemy aircraft are indicated by a red contact point. Friendly aircraft are in green and tracking enemy missiles are displayed yellow. If an enemy aircraft moves within close range of your aircraft, the

display automatically rescales itself so close-in targets can be displayed with accuracy.

## **KEYBOARD/MOUSE/JOYSTICK- (K,M,J)**

Toggles between Keyboard, Mouse and Joystick control. Keyboard control is recommended although other selections are very much down to individual taste.

When using MOUSE, the left mouse button is used to fire the currently selected weapon - as indicated by the selected weapon discreet (HUD display text). Moving the mouse will directly control the aircraft. Target lock-on is attained using the right mouse button and is the equivalent to the 'T' command for other options. When using LGB's, use right mouse button for target lock-on and 'X' key to unlock.



### ***Joystick***

option only has fire and movement options. Target lock-on is achieved using 'T'.

### ***Thrust (shift F1-F10)***

Increases/decreases RPM from 10%-100%. Thrust must be at least 100% for take-off and may need to be augmented with afterburners. To ignite engines, use left or right Alt keys. Use the shift & function keys to change the power output of the engines.

### ***Afterburners***

(Help/delete) Afterburners allow increased power for use in take-off and combat scenarios. Four levels of afterburner are offered, each accessed

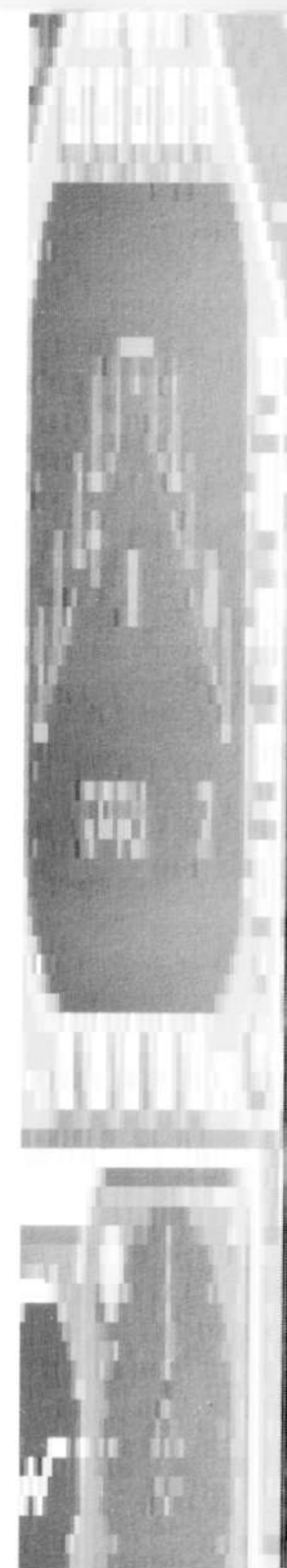
by pressing the help button from 1-4 times. Del reduces the afterburner level by 1. Afterburners are usually used to assist take-off, especially with a heavy payload.

### ***Launch***

(L) Signals for the flight-deck crew to activate the launch mechanisms aboard Roosevelt. A slingshot accelerates the aircraft to take-off speed in a few seconds and eliminates a great deal of pilot error on take-off.

### ***Gear***

(G) Raises/lowers the landing gear. Gear must be raised after take-off and lowered before landing.



### ***Brake***

(B) Powerful air brakes which should be released before take-off and applied either during landing approach to slow aircraft in flight or directly after landing.

### ***Arrestor hook***

(A) Raise/lower hook to engage on flight deck arresting mechanism. Lower before landing.

### ***Direction***

(Cursor Keys, Mouse, Joystick)  
Activates wing ailerons and tailerons to manoeuvre aircraft.

### ***Select HUD mode***

(Tab) Toggles between Air-to Air (AA) Air-to-Ground (AG) and Instrument Landing System (ILS) modes. HUD display indicates current mode.

### ***Select weapon***

(Ctrl) Selects individual AA & AG weapons, depending upon current HUD mode.

### ***Target lock on***

(T) Allows selected target to be tracked by firing mechanisms. Essential for attack accuracy.

### ***Fire***

(Enter) Fires any weapon currently selected on the HUD.

### ***Eject***

(Both Shift Keys) Activates ejector seat for use in extreme emergencies to abandon aircraft. Hold down both keys for around one second.

### ***Illuminate cockpit***

(I) Turns on cockpit instrument lighting when night flying.

### ***Comed***

(C) Selects the Combined Map, Electronic Display unit. Displays aircraft position via satellite imaging equipment.

### ***Infra red forward pod***

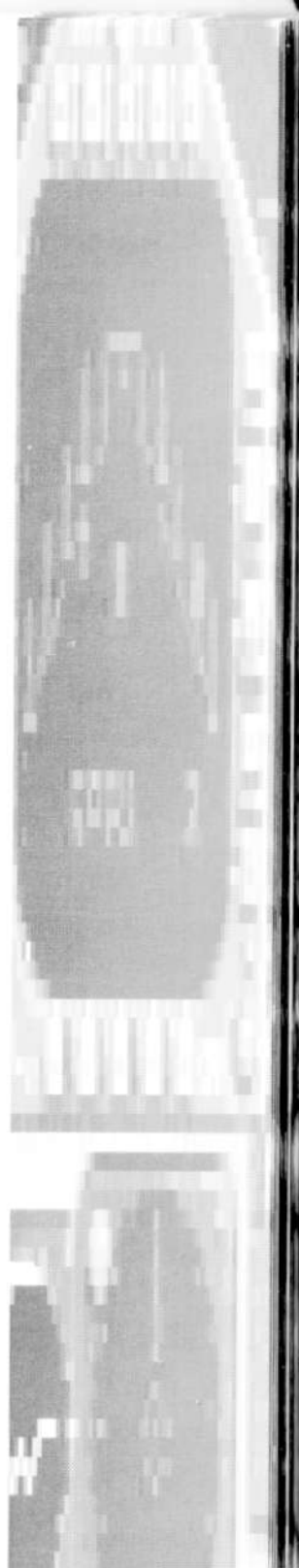
(if available)- (V) Toggles COMED into forward looking IR. display monitor.

### ***Zoom in , zoom out***

([,]&\*,./) Zooms in on currently displayed image. In cockpit, zooms in on outside scenery.

### ***Rotate external and internal view***

(1-9) As if an external camera was circling the aircraft to give a 360 degree view angle. Note to A600 users: where a numeric keypad is not available, number keys 4-9 allow for view manipulation. Key 4 immediately moves the internal or external views to a central and forward view. Keys 5&6 pan the external views up and down. 7&8 Zooms in and out on both internal and external views and 9&0 rotates all views to the left and right.



### ***Rotate***

((,)) Rotates view angle as if a camera were circling the aircraft.

### ***Time accelerate decelerate***

(Z, Shift Z) Accelerate time in steps of x2, x4, x8 & x16 using the Z key.

Decrease time using Shift & Z. Time acceleration is useful for covering long distances in a short space of time while deceleration is useful for dog-fights and attacking land-based targets.

### ***Return to briefing room***

(Shift Esc) Takes you back to the briefing room ready for another mission.

## **VIEW MODES**

### **F1**

Toggles between current view mode and cockpit.

### **F2**

Toggles between cockpit view and external view. The external view seen depends on the view selected by the number keys but is aligned horizontally with the aircraft whatever the lateral position of the aircraft.

### **F3**

Fly-past mode. A stationary camera tracks the aircraft as it flies by.

### **F4**

Locks aircraft onto target. Keep pressing F4 to lock on to alternative targets.

**F5**

Views aircraft from any land-based targets. Re-pressing F5 will allow you to view your position from all the targets in range - there may be many!

**F6**

Satellite view.

**F7**

Toggles between external and previous views.

**F8**

Gives view of aircraft from Theodore Roosevelt flight deck.

**F9**

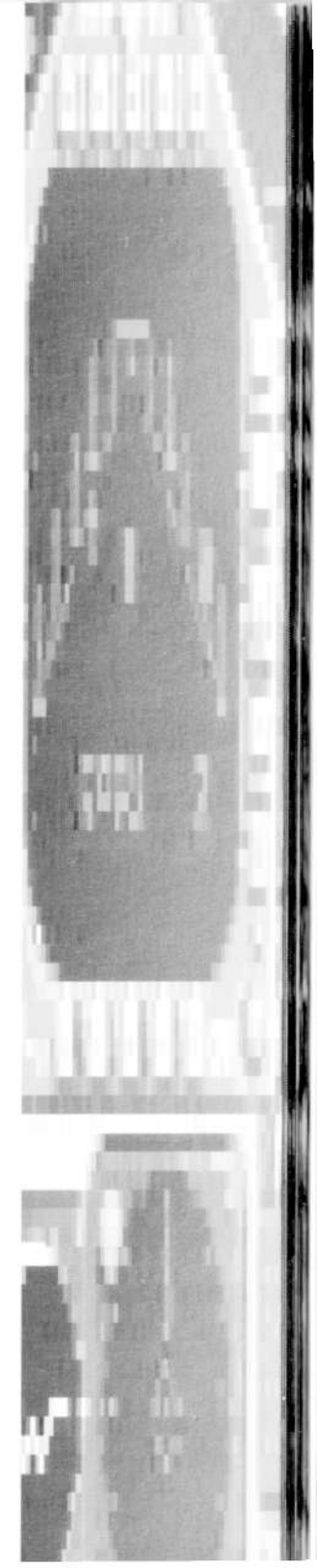
Follows missile into target. Continue pressing to view any other missiles and bombs currently in flight.

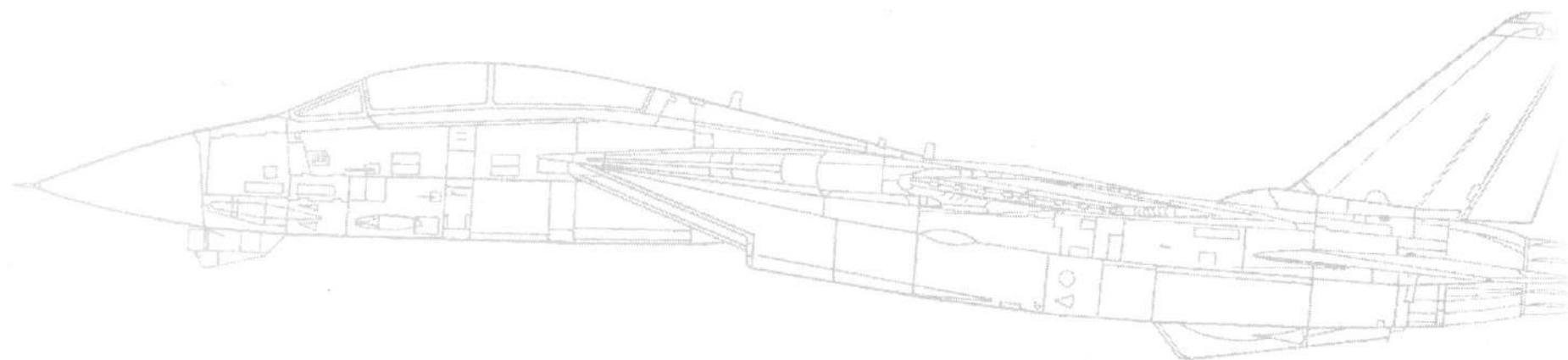
**F10**

View through selected weapon imaging equipment (where appropriate)

\

View all aircraft and/or ships (where appropriate) currently threatening or interacting with friendly forces.









## FLIGHT INSTRUCTIONS

### System mig21

Length 15.29

Height 5.52

Width 7.18

Speed 2

Range 220

# FLIGHT INSTRUCTIONS



After selecting either the Hangar Deck or Instant Flight options and loading your aircraft with the appropriate payload, you will find yourself lined up on the Flight Deck of the Roosevelt. Your HUD display will indicate which catapult you are currently on and your selected aircraft will lie in silence, waiting for you to fire the jets into life and ignite your afterburners. The catapult uses steam power to throw the aircraft along the runway and accelerates the plane to a speed of approximately 150kts with the help of the aircraft engines. However when the aircraft is fully laden with its operational payload, it

may not reach a high enough speed to attain take-off velocity. Therefore a fully-augmented take-off may be required whereby the afterburners are used to produced more thrust on take-off. If the plane loses height when leaving the runway, it may be necessary to jettison payload as a trade-off for gaining height. It is sometimes necessary to actually nose the aircraft downwards to gain speed before pulling up! A third option is to eject if the drop is too great. Engine fires on take-off also require similar emergency action.

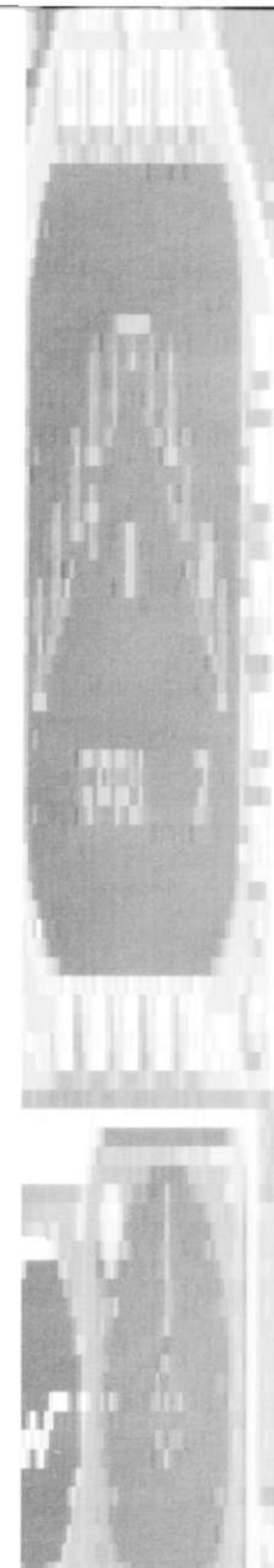


Looking down the length of the flight-deck, you will first need to select the appropriate level of engine thrust for take-off. Pressing both Alt keys will bring the engines to life but you must then bring both engines to 100% thrust by pressing Shift & F10.

Afterburners should then be used to produce the huge amount of extra thrust required for take-off.

Afterburners are a ring of nozzles around the exhaust of each engine which spray fuel into the path of the superheated air blasting from the engines- allowing this extra fuel to ignite and in the process creating extra thrust. Help operates the afterburners- pressing four times takes them up to maximum whilst Delete reduces afterburner levels.

With both afterburners on full and engines producing 100% thrust, the aircraft is prepared for take-off. Operation mode, either Keyboard, Mouse or Joystick must now be selected by pressing K, M or J- Keyboard is the suggested mode although personal preference is important. When prepared for take-off and engines are producing maximum thrust, pressing L will activate the launching mechanisms and throw the aircraft forwards and off the end of the runway. Once off the end of the flight-deck, you must first gain height then withdraw the undercarriage (press G). If you end up in the drink after take-off (or any other time) the Carrier's SAR chopper should initiate a search & rescue mission to locate



you and pick you up. The success of this SaR will depend on your position from the Carrier.

Once level flight has been attained, the appropriate HUD and MFD readouts need to be found. Use the Tab key to toggle between the HUD modes. Air-to-Air missile mode is the first HUD display, the second mode is Air/Ground Missile select and the final mode is the ILS (instrument landing system) display. The HUD also displays speed in Kts, Altitude in feet and heading in degrees (see page 77 for HUD display details). Note that the triangular waypoint indicator is located along the heading bar.

Select the required MFD by pressing the 1 key (F-14) and the 1&2 keys (F-

18) then activate the radar by 'Shift-R'. Depending on the MFD mode selected, you will now be in a position to track and identify enemy aircraft.

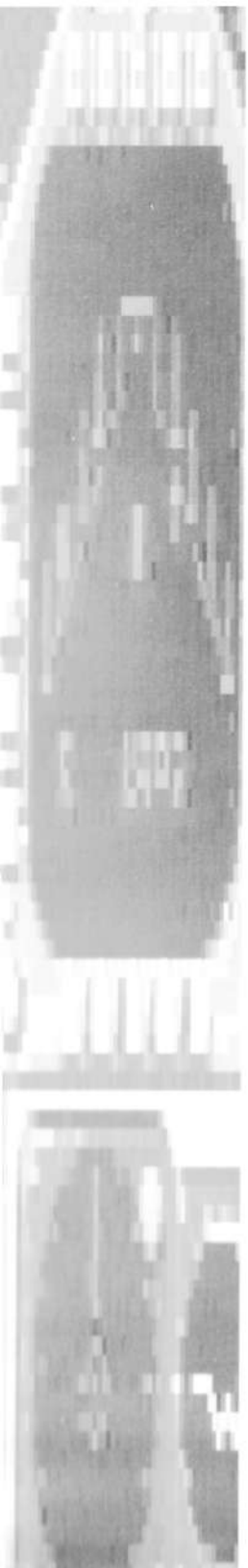
The aircraft may now be flown using any of the selected methods- Joystick, Mouse or Keyboard- and may be viewed in flight from any one of a wide range of exterior viewing modes. For example, if you feel the standard cockpit view doesn't allow a wide enough view of the outside world, pressing F1 (or Enter on the numeric keypad, where available) allows a view of the aircraft from outside. The angle at which the plane is viewed may then be manipulated using keys 1-9 on the numeric keypad which cover every 45 degree angle in a circle around the horizontal of the

plane. Angles between these 45 degree divisions may be viewed using the ( ) keys. Note that users without a numeric keypad may use keys 3 - 9 for external view manipulation. Return to the cockpit view is by repeating the keystroke or pressing F2. Zooming in towards or away from a given image can be attained by pressing the [ ] or \* / keys.

The function keys allow even greater manipulation of the view area and are outlined in the VIEW MODES section of this manual. Most selections can be more readily understood by simply loading up the game, pressing the appropriate button and watching what happens. It is worth noting however that the F4 and F5 keys have a useful tracking element to them which

allows the target object and aircraft to keep in alignment whatever the aircraft direction. This lets the pilot line-up with the target and is a function that is extremely useful in planning your bombing run. The F-9 key allows a 'birds-eye' view from the rear of any missile in-flight - allowing you to follow the missile down to the target. Repeated pressing of the F4 key will toggle between possible targets. Repeats of the F9 key will toggle between different missiles.

Another vital key is the \ key which views all mobile units, both friendly and unfriendly in the vicinity of both the aircraft and carrier (where appropriate). Continue pressing the key to move from unit to unit.



Taking each aircraft in turn, the strike capabilities of both aircraft may now be examined. Due to the different roles played by each aircraft, the missile systems and MFD displays are correspondingly tailored to suit the individual aircraft.

The next step is to head towards your target destination. To do this, the waypoint discrete must be followed.

## **F-14**

The MFD allows locked-on target identification, bearing, velocity and altitude details. When attacking an airborne target, the above information must be used to select the appropriate weapon with the required range and attack capabilities. Press Tab until A/A mode is displayed on the HUD and then select the appropriate missile by pressing Ctrl - toggle between Sidewinder, Sparrow or Phoenix (Short, Medium & Long Range).

When attacking an airborne target, the target must be within range of the selected missile and inside the weapon's seeking capabilities

Once the target is in your radar,



pressing 'T' will lock the tracking mechanisms onto the target. The MFD will then display an 'I' message. This means that you are Interrogating the aircraft, basically asking it whether it is friendly or not. If the response is affirmative (by the target aircraft responding in the correct code), the message 'F' for friendly will be displayed after a short while. If the 'I' message continues to be shown, it can be taken that the aircraft is not making the correct response and is therefore an enemy plane. Line up the two radar tracking symbols and fire the appropriate missile using either the Return key or mouse/joystick-mounted fire button. Only flares and emergency evasive action can save your enemy now!!

When in the situation of being attacked by either an enemy aircraft or SAM (Surface to Air Missile) fire, there are a number of measures you can take. Your first warning that you are in danger of being fired upon will come from the instruments mounted alongside the MFD. When a heat-seeking missile is in-flight and tracking you, the IRM display will notify you. Flares must be dropped and evasive action undertaken. Similarly, when radar-guided missiles are tracking, chaff must be used to decoy. The RGM display will alert your attentions to a Radar Guided Missile.

## F-18

The F-18 is a multi-role strike/intercept aircraft and therefore carries a large payload of both A/A and A/G missiles. Missile mode may be selected using the Tab key which will display A/A and A/G modes, followed by the ILS (Instrument Landing System) mode in sequence. Once A/A is selected, current A/A missiles may be chosen using the Ctrl button in the same way as the F-14. A/G missiles are also toggled between using the Ctrl key.

Air attack is, again, identical to the F-14 attack mode although the F-18 is equipped with fewer A/A missiles and has less operational effectiveness in terms of both speed and manoeuvrability. Since the F-18 only

engages in A/A combat as a self-defence mechanism, Phoenix long-range missiles are not made available to the F-18. Any other A/A missiles can however be used and all A/G missiles are available, depending upon mission objectives.

Enemy aircraft may be viewed on either MFD display by using the '1' or '2' keys and identified using the same Interrogation techniques as for the F-14.

When approaching a surface target, the appropriate attack strategy must be used for a successful strike. See page 126 depending upon the weapon currently selected. Be warned that SAM activity will be high around most targets. When attacking a target, use

the F4 key to line up with the target before making your bombing run.

### **Arrested Landings**

The player will find both attack and landing procedures are made easier by maintaining the time on x1. This gives the novice pilot time to select weapons or appropriate flight-paths and makes the whole affair somewhat less messy!

This is the suggested procedure for landing on the carrier.

### **Initial Actions**

1. Head to a point a couple of miles behind the carrier. The F-18 MFD display facilitates a Landing System Display to help keep you informed on the direction in which the Roosevelt

lies - although more often than not, visual contact may be maintained as the Roosevelt shows up brightly coloured against its background of blue. The F-14 does not possess this MFD facility.

2. Switch to ILS mode on the HUD by pressing the Tab key. This will activate the Instrument Landing System which offers important approach information to the pilot about the required angle of descent and altitude.

3. Tune the radio onto the carrier atc using the 'N' key

4. Engines must be cut to around one third power (Shift/F3)- under 200 knots. Use air brakes (B) to cut power even further when required.

5. When the carrier notifies you that landing clearance has been granted, head towards the carrier on final approach.

### **Final Approach**

1. Lower undercarriage (G) and the Arrestor Hook (A).

2. Line up with the carrier landing strip directly ahead of you and running away from your line of descent.

3. The ILS display indicates whether your approach is too high or too low or to either side of the glidescope (a projected perfect approach angle of descent). In ILS mode, if the horizontal bar is above the centre of the screen,

you are too high and must lose altitude. If the vertical bar is to one side, you must head in that direction until the bar moves into the centre. This will indicate when you are on the correct flight path in line with the direction of the runway. Note that the vertical bar may be centred even when you are flying across the flight path, not directly towards it. When both bars are centred, the correct angle of approach is obtained.

4. Approach speed must be adjusted according to the payload carried.

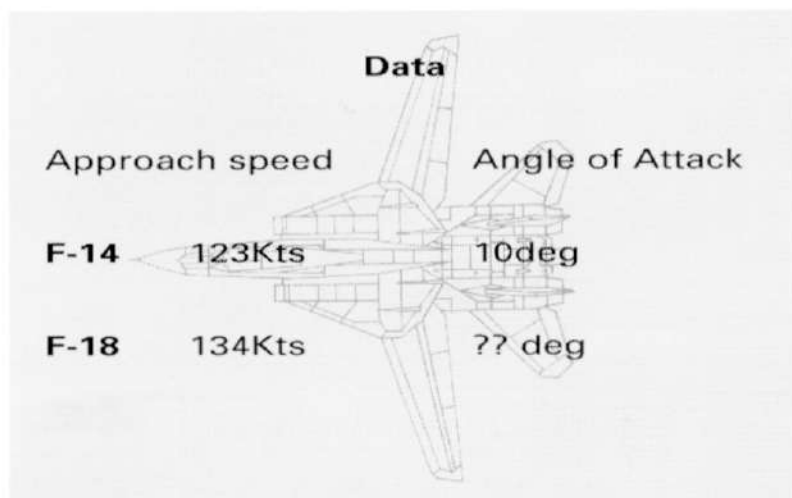
5. Maintain a steady descent until the touchdown.

6. When you hit the deck, cut all engines using the Amiga Keys and hit the brakes using the B key (if not

already applied). Advanced pilots will then hit full military engine power (100%, no afterburner) on touchdown to enable the plane to take-off if arrestor cables are missed. Navy pilots try to catch the third cable. If the cables are missed, engines will be on full power and will allow immediate take-off. This is referred to as a bolter.

7. Press Shift Esc to enter mission debriefing.

## Refuelling



1. Identify your tanker unit via your radar and MFD displays. You will recognise the tanker by a 'Friendly' interrogation message and the height and speed at which it is travelling. The tanker will circle around a predetermined point (designated on the TAMPS screen) and at a predetermined altitude. The tanker will cruise at around 250kts.

2. Once the tanker is within radar range, switch to A/A mode and lock-on to the tanker. The lock-on discrete will then display the target distance in the bottom right hand corner of the HUD. This will enable you to monitor the rate at which you are closing on the tanker.

**3.** Match your heading and altitude to that of the tanker and move slowly up behind the tanker. Smoothness of manoeuvre and maintaining a constant altitude are the secret. Use the rudder keys <> to change heading as the tanker circles.

**4.** Close on the tanker, cutting the engines and using the airbrake 'B' to slow your progress where necessary.

**5.** The trailing fuel line or drogue is manoeuvred by the tanker crew and contains a strong magnetic attachment to facilitate the mating with your aircraft.

**6.** With persistence a contact will be made and refuelling will commence. Airborne refuelling is notoriously difficult to perfect but with a delicate touch and tenacity, you should succeed.



**System mig23**

Length 18.23

Height 4.37

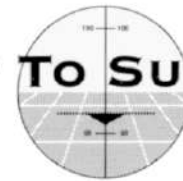
Width 14.27

Speed 2.35

Range 930

**HOW TO SURVIVE**

## HOW TO SURVIVE



### **17 HANDY PLAYING TIPS FROM THE 'ED SCIO SCHOOL OF FLYING'**

Don't fly low and slow! - you are sitting duck.

Don't fly everywhere with afterburners on! - use accelerated time and save fuel

If you're being escorted, let the escorts do their job - don't get too far away.

In a campaign, try to take out the radars and SAM sites early on. It will make later missions easier.

If you are using SLAMs then do what

their title suggests - Stand Off. There is no need to get close to a heavily defended target.

Try to fly above the threat envelope - out of AAA range.

If you have a long way to go, fly at a cruising altitude (i.e. 30,000ft) to save fuel.

Don't waste your countermeasures. If you can see a missile coming or you know where it's launched from, you can out manoeuvre it - hit full 'burner and head towards it, roll 90 degrees and pull hard on the stick a few seconds before impact.



you do need to deploy a flare or chaff don't hit it a lot of times (unless you have a few missiles very close) wait after each release to see if the missile is decoyed.

If the enemy has fired a semi- active radar guided missile and are about to be destroyed by one of your missiles then their missile will not guide. You should be safe.

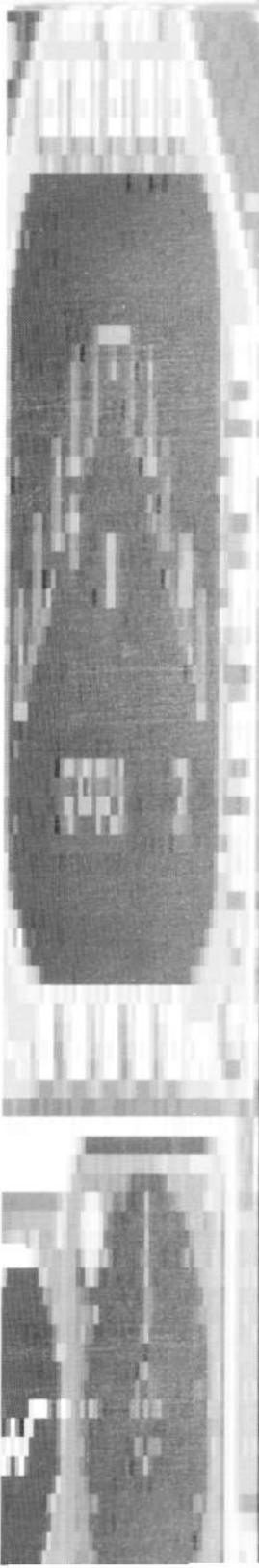
If you are at low level in a mountainous area and a weapon is being fired at you use terrain masking - put the mountain between you and the missile\gun.

If you are stalling at low level, hit full 'burners, clean up your plane (gear up, air brakes off) and if your situation is really desperate dump any heavy

ordnance. If you have the altitude it is better to nose down to get the plane to return to controlled flight.

your plane is damaged and you know you cannot make it back to the carrier, head as far south as possible and tune to the SAR channel. It is best to eject at slow speeds at altitudes above 1000ft (in level flight). The further south you make it and the longer you are tuned to SAR the better your chances of being rescued.

A pilot will be 'Retired from active duty' if he sustains 3 or 4 ejections, depending on injuries. This would mean the end of a campaign for a veteran so to avoid this in a plane that is low on fuel for instance you could try to land on a road or on the desert.



To try this you should have released all external stores to lighten the plane for as low an approach speed as possible.

If your surface radar warning light illuminates it will allow the Iraqi gunners more time to bring their weapons to bear. This will effectively increase the range at which they will begin firing at you. It may also result in IAF fighters vectoring towards you. Apart from destroying these sites you could go to low altitude (less than 500ft) to break the radar lock.

## System mig25

Length 16.78

Height 4.33

Width 14.03

Speed 1.7

Range 935

ENEMY TARGETS

## ENEMY TARGETS



There are of course a large number of targets which are of considerable importance to your campaign in terms of both strategy and outright victory. For example, Scud missile sites and Republican Guard units are of direct military importance whereas radar emplacements and key bridges are more strategic targets.

Both type of target is vulnerable to airborne strike and should be undertaken with equal urgency. Below are some of the targets you will be required to attack

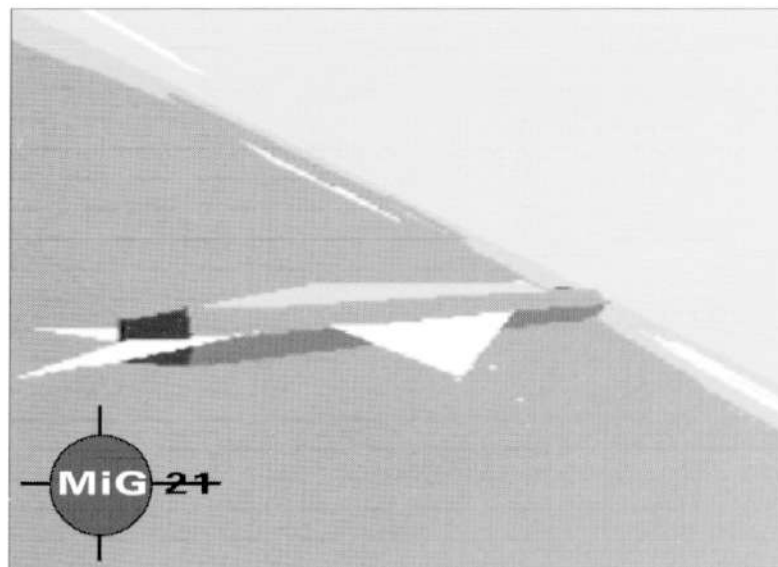


## AIRCRAFT

### MiG-21

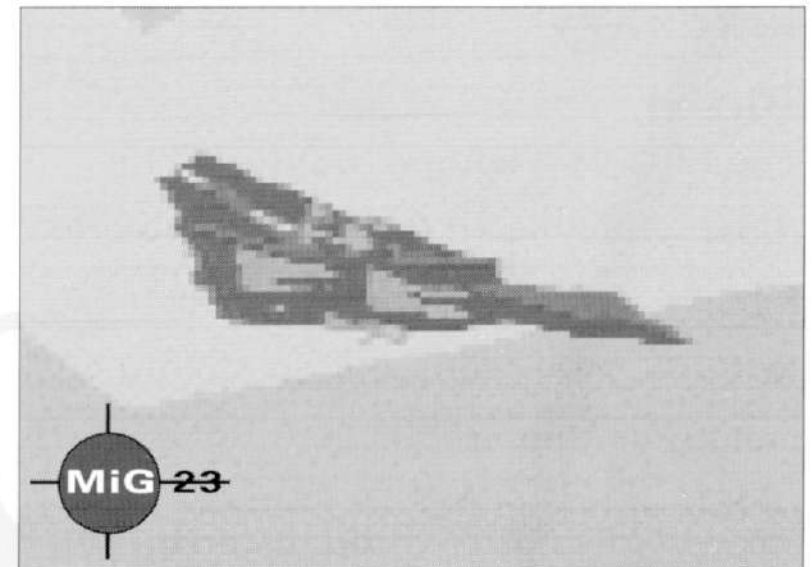
The MiG-21 'Fishbed' fighter is the most widely used fighter in the world. It has a maximum speed of Mach 2.1 (around 1400 mph) and an absolute ceiling altitude of 59,000 ft. All models of this versatile fighter possess a spin scan radar which provides both target illumination and HUD information.

The Fishbed offers limited ground attack and reconnaissance capabilities but is a worthy opponent in A/A combat holding SARH and IR missiles together with a 23mm GSh-23 cannon.



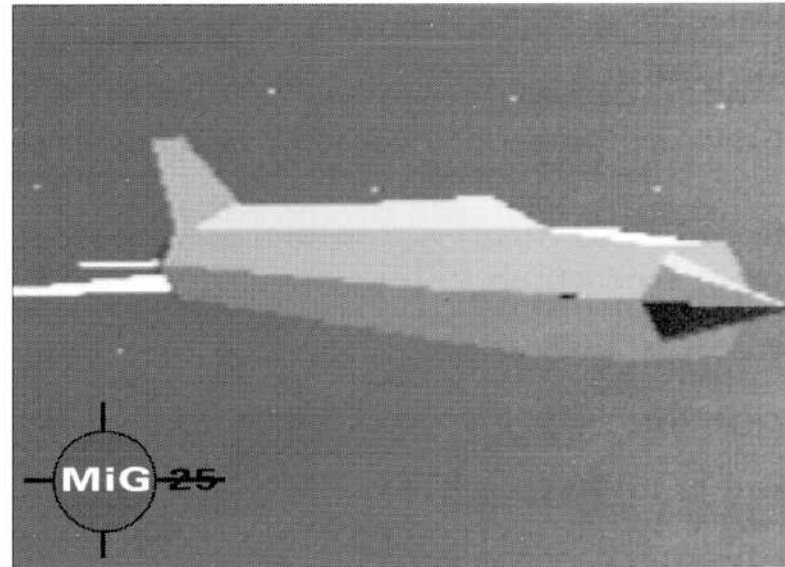
## MiG-23

The next generation MiG was totally redesigned and bears no resemblance to the 21. With a Tumanskii afterburning turbofan, the 'Flogger' is a highly manoeuvrable multi-role aircraft which can carry a wide range of intercept and strike weaponry and deploy them with the utmost effectiveness in conjunction with the 'High-Lark' radar system. This allows look-down-shoot-down capabilities against aircraft at a very low level plus a lock-on target tracking mode at up to 34 miles.



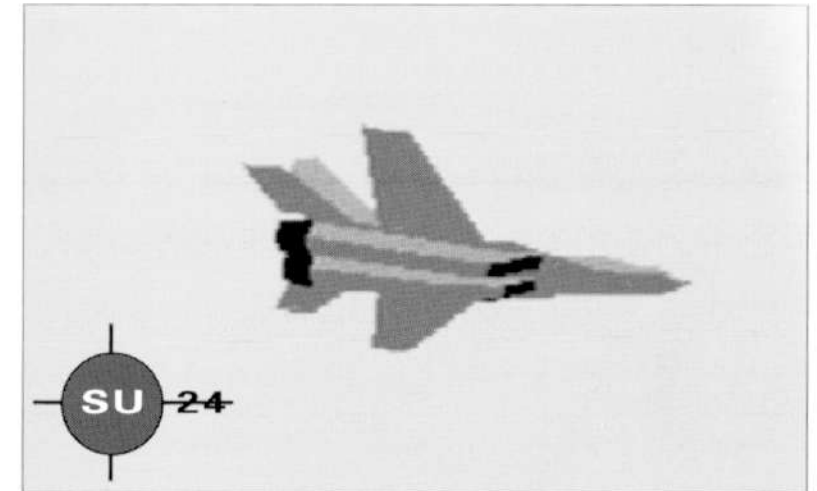
## **MiG-25**

A high-altitude interceptor, the 'Foxbat' has Mach 3+ capabilities at height and carries a powerful array of SARH and IR A/A missiles. Little attempt was made to allow the Foxbat medium to low altitude combat proficiency. Instead, stand-off attack capability at height and over long distances was the main focus and in this role the Foxbat excels.



### **MiG-29**

Similar in look to the F-18, the 'Fulcrum' is an all weather single-seat interceptor capable of speeds in excess of Mach 2. It carries both medium and short range A/A missiles together with a single 30mm cannon and is an extremely manoeuvrable adversary.

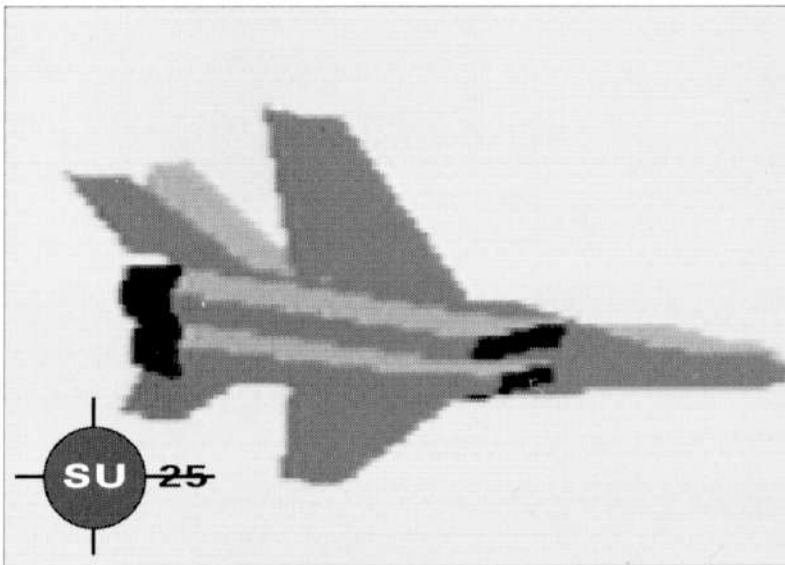


### **Sukhoi Su-24**

Similar in both design and function to the F-111, the 'Fencer' is a low altitude supersonic attack aircraft capable of speeds in excess of Mach 2. It has eight weapons' pylons and is capable of carrying a wide range of both nuclear and conventional bombs. The main fuselage contains two 30mm cannons and model variants include the 'E' which is equipped for electronic warfare.

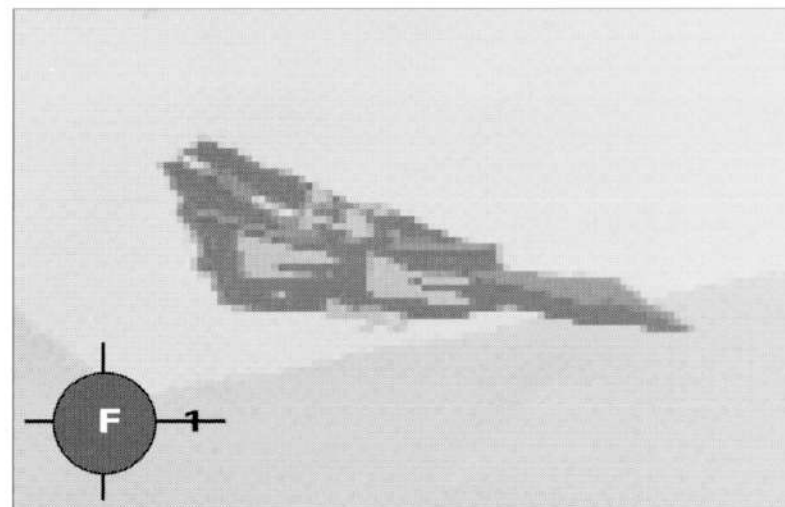
### Sukhoi Su-25

The 'Frogfoot' is a single-seat twin-engined ground attack aircraft in a similar vein to the A-10 Thunderbolt. It has a top speed of approximately 1000 kmh and can carry up to 400kg of bombs on its eight underwing pylons together with a single 30mm cannon mounted under the fuselage.



### Mirage F1

The Mirage is equally suited to either attack or intercept roles - and is superbly proficient in both. Capable of Mach 2.5 at 70,000 ft, the Mirage F1E carries two DEFA 553 cannons (each carrying 135 rounds) plus an armament of Wasp, Martel anti radar and AS.30 ASMs. A/A arsenal includes both Sidewinders and the Matra R.530. This is a potent multi-role aircraft.

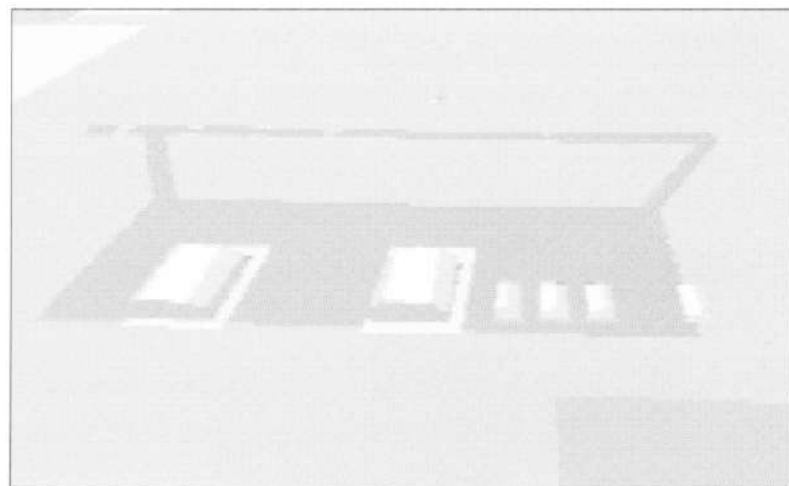


## **SURFACE THREATS & TARGETS**

### **Airfields**

Vital to Coalition air superiority, the heavy bombardment of enemy airfields was the overriding objective of the early campaign. Knocking out the airfields - runways, communication towers and hangars - meant that the threat from any Iraqi airforce bold enough to challenge Allied warplanes would be effectively negated.

When attacking airfields, the first pass should be decisive as an undamaged airstrip will be used to mobilise defending aircraft. Heavy artillery and surface-mounted anti-aircraft missiles usually surround such strategically important targets. Beware, things can get hectic!





## Anti-Aircraft Artillery

The destruction of AAA is often important to provide a 'clean' attack route to a target. If AAA is ignored before the primary objective is attacked, the strike may be considerably more dangerous.

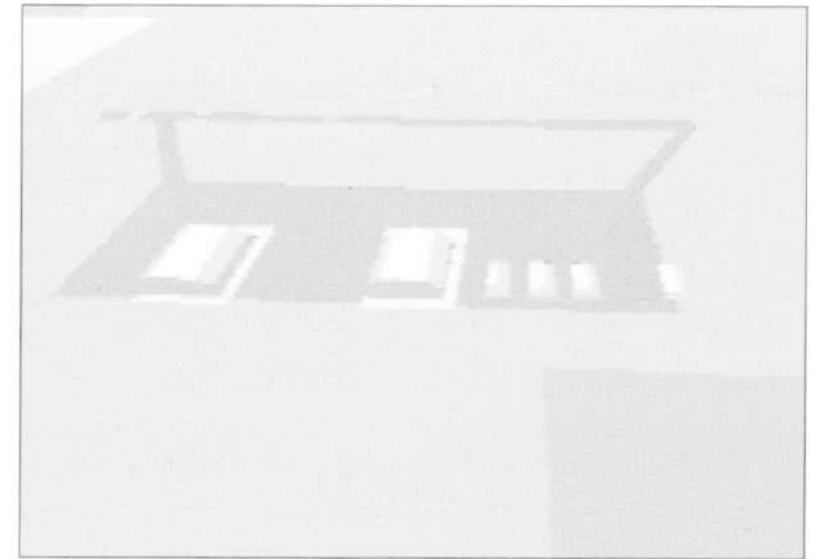


Anti-aircraft artillery is fitted with altitude and proximity fuses. This means that if the shell passes close to the aircraft, it will detonate - a direct hit is not required - and the shrapnel can prove extremely hazardous. The altitude fuse detonates the shell when it passes a certain altitude - the altitude that the gun crew calculates to be your height. Ignore them at your peril!

## Army Base

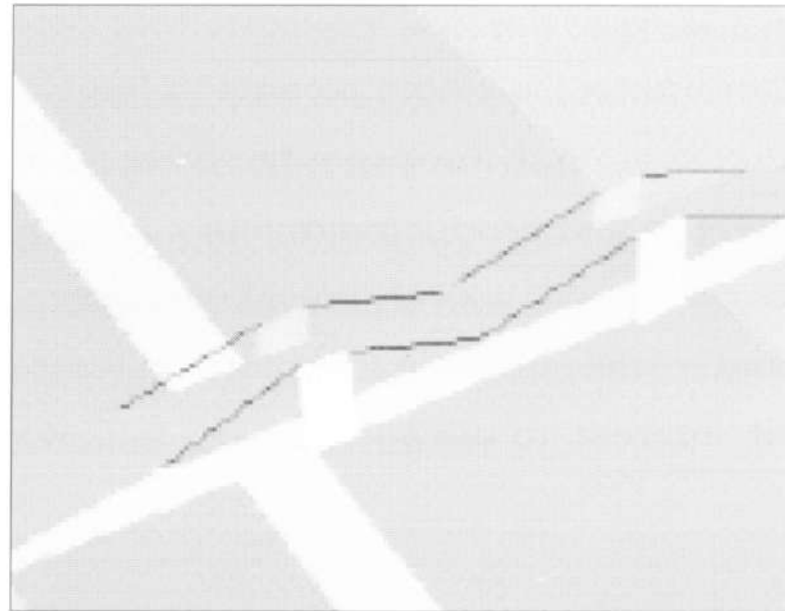
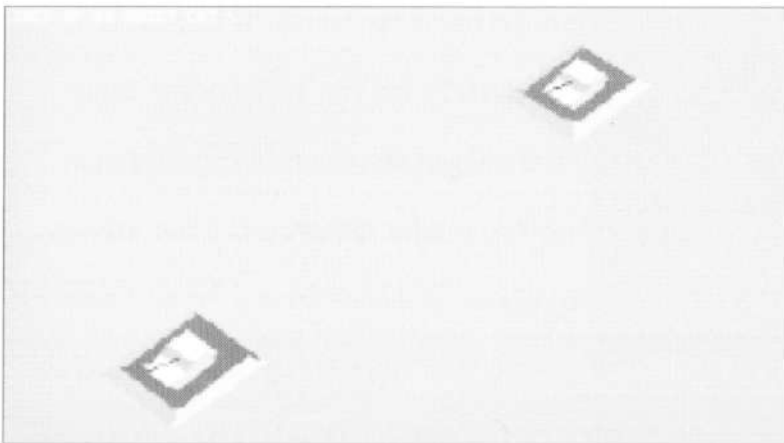
Permanent or semi-permanent bases for both armoured and light infantry are important objectives. Though modern warfare is considerably more remote than it once was, the targeting of infantry units is always an unfortunate necessity. If the war was to enter an infantry mobilisation phase where hand-to-hand combat became necessary, it is important to ensure that enemy forces are both weaker and have a low level of morale. Also, bases have a higher concentration of infantry and so provided ideal targets.

One major negative point is that these bases are heavily protected by SAMs, both permanent and portable and that small arms fire is considerable - a threat which cannot be ignored even by modern attack aircraft.



## Artillery

Used to bombard a variety of land-based targets, the attack of artillery emplacements was necessary to ease the pressure on ground troops and clear the path for any retaliatory action. Mobile SAMs may be used in protecting these targets as may air cover.

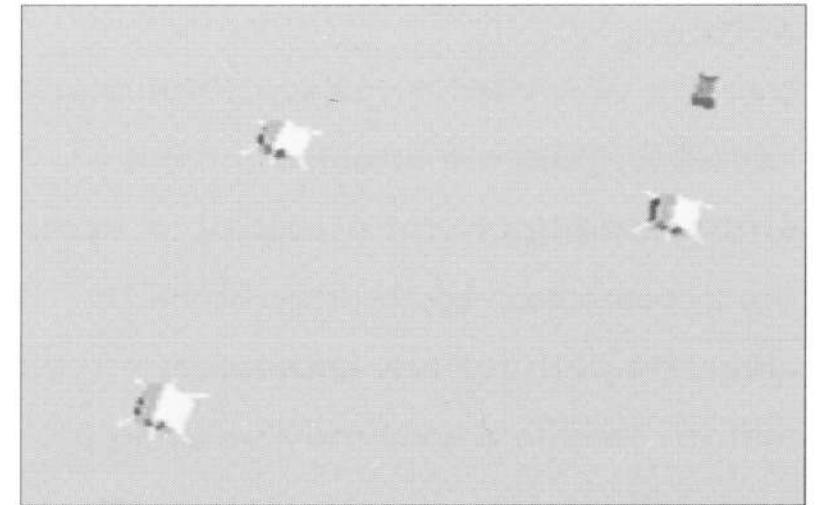
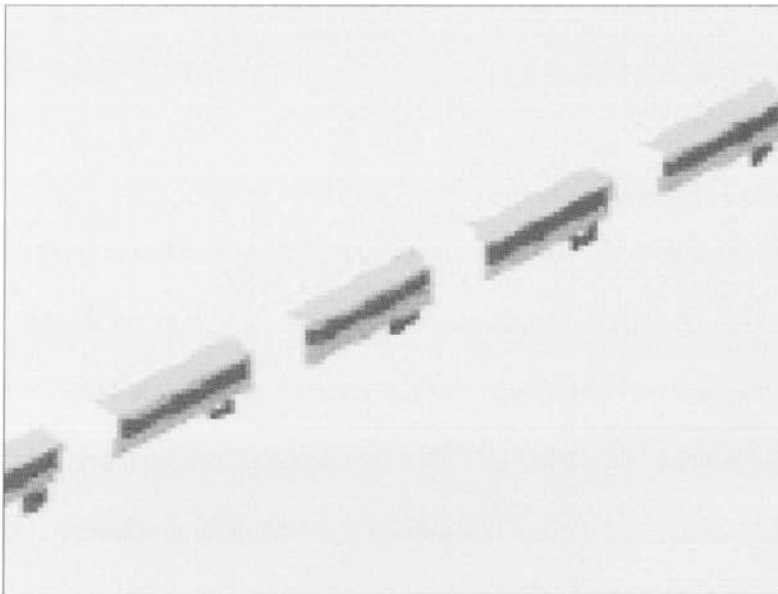


## Bridges

Bridges were a primary target during the initial phases of Desert Storm and meant that the long term support effectiveness of the enemy would be impaired. Taking out bridges meant that a vital artery of communication, not to mention troop and vehicle movement, was cut. These targets are also (usually) only lightly defended.

### **Factories**

During the Gulf War, it came to light that seemingly innocent factories were in fact producing military hardware such as chemical weapons and missiles. These installations were of 'interest' to the allies.



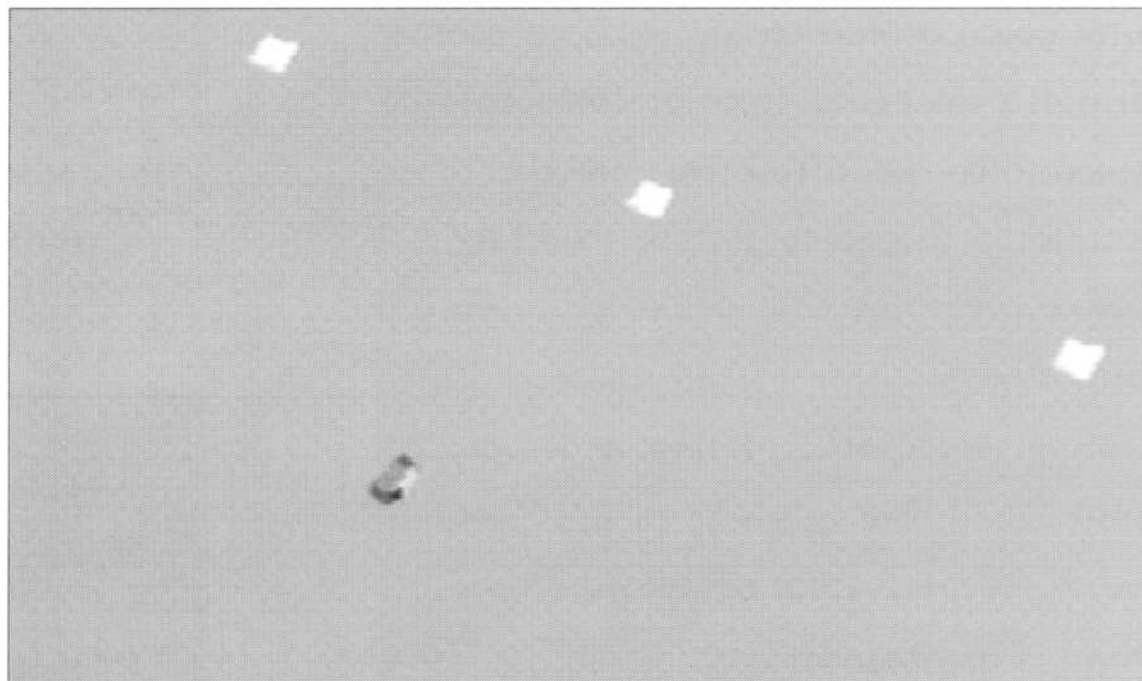
### **Infantry**

The backbone of any army, even today, is the infantry unit. Iraq put a great deal of faith in its infantry but continued bombardment and attack reduced the morale of even the elite Republican Guard to a very low level. When the ground fighting began, the Iraqis surrendered in their thousands.

## **Mechanised Infantry**

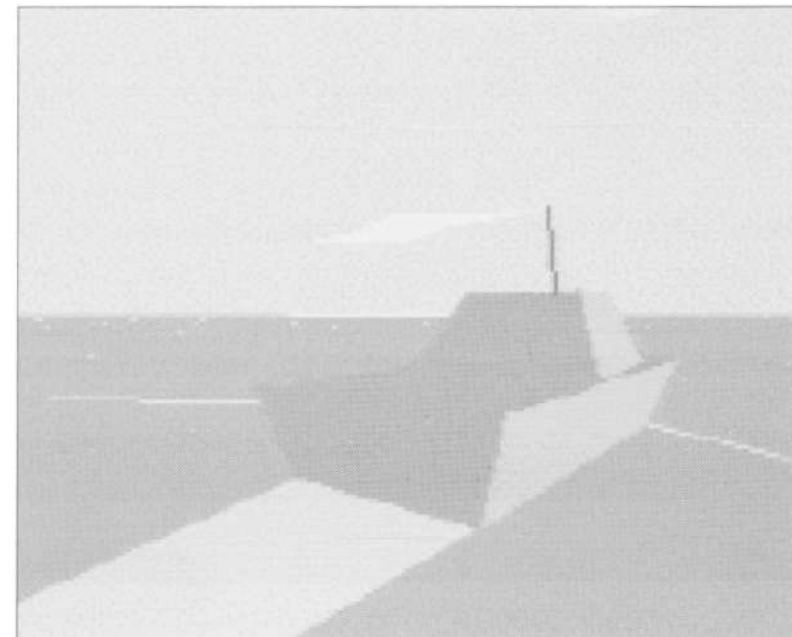
Infantry with both troop transports for fast deployment and Armoured Personnel Carriers for support made difficult targets for air strikes. In times when Mechanised Infantry were mobilising in a strategically sensitive

area and air attack was the only quick response, you may find yourself confronted with this difficult target. Being small and highly mobile, rocket and heavy cannon strafe are the ideal weapons to be used against this kind of relatively 'soft' target.



## Naval

After the invasion of Kuwait, the Iraqis found themselves in possession of a small yet potent navy. This comprised mainly small, fast gunboats, some mounted with portable SAMs, some with Exocet missile launchers. These extremely capable missiles were used with great effectiveness against the British Task Force in their successful mission to recapture the Falkland Islands in the early 1980's. Fired from a distance, they hug the sea, evading ship's radar until the very last minute - which is usually too late. Immediate 'neutralisation' of these targets, which can do a great deal of damage to a fleet, is important.





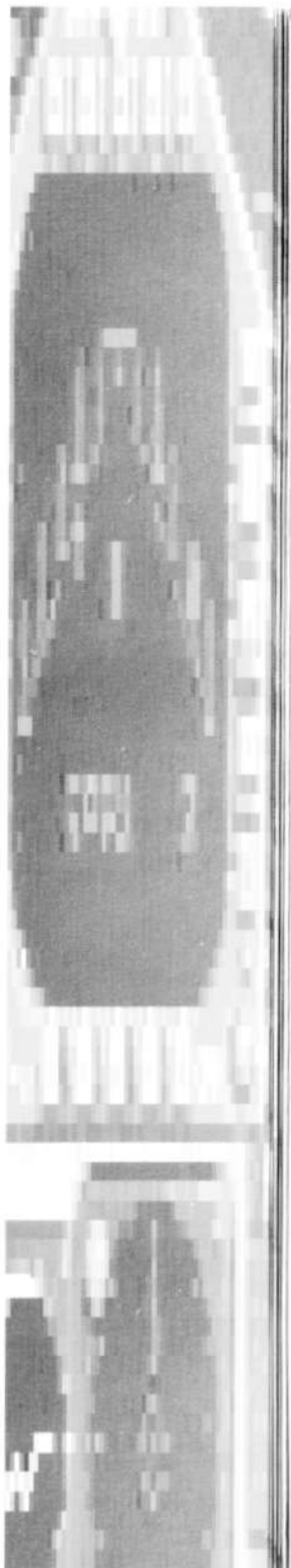
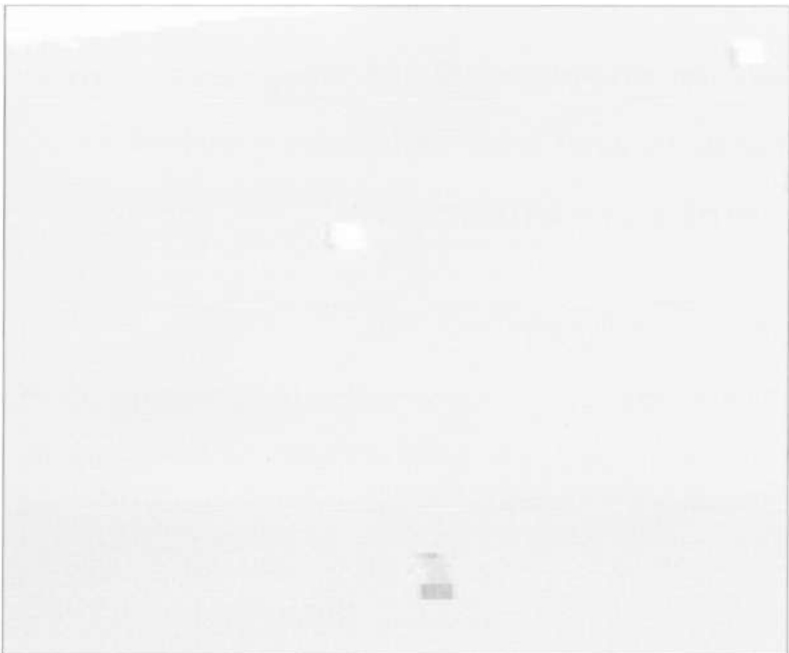
**Oil Rig**

Oil rigs were commonplace in the Persian Gulf. During peace time these would pump at full capacity. During war, the pumps were silent and the only noise would come from the mobile SAM sites targeting Allied aircraft. It was essential therefore that these isolated pockets of enemy activity were removed at once and a well placed SLAM or volley of rockets should be enough to silence them permanently.



**Radar Sites**

Vital for the tracking and monitoring of air activity is the use of ground-based radar. They are the eyes and ears of Iraq in war time allowing them to track attacking aircraft and alert SAM sites across the country. HARM was specifically developed to knock out radar. Fire one of these, count to three and it's gone.



## **SAM Sites**

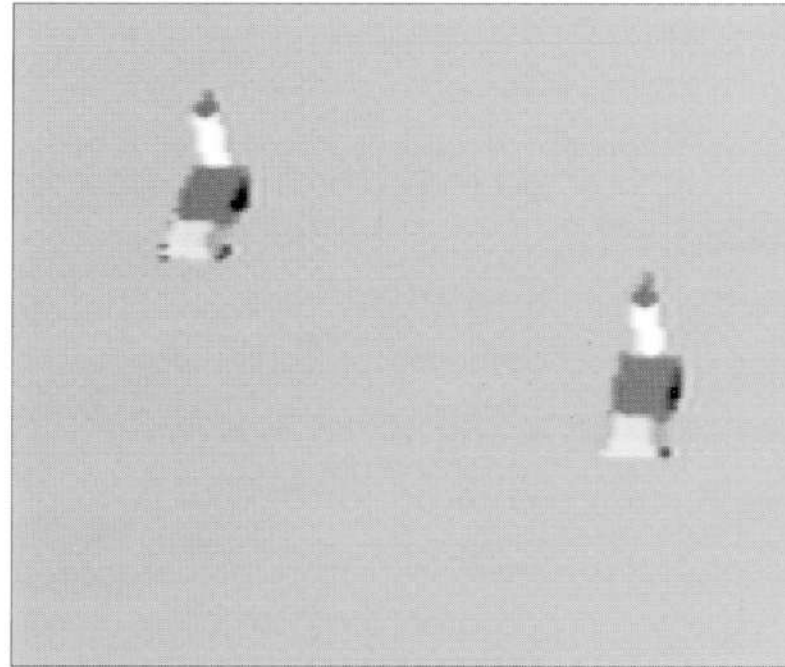
Surface to Air missiles are usually launched from semi-permanent SAM installations set in key areas such as close to airfields and important factories. They launch a variety of missiles which have various tracking mechanisms which are a considerable threat to aircraft. IR heat seeking missiles are the most frequently used because of their fire and forget nature.

When attacking SAM sites, both Zuni rockets and free fall/laser guided bombs are effective.



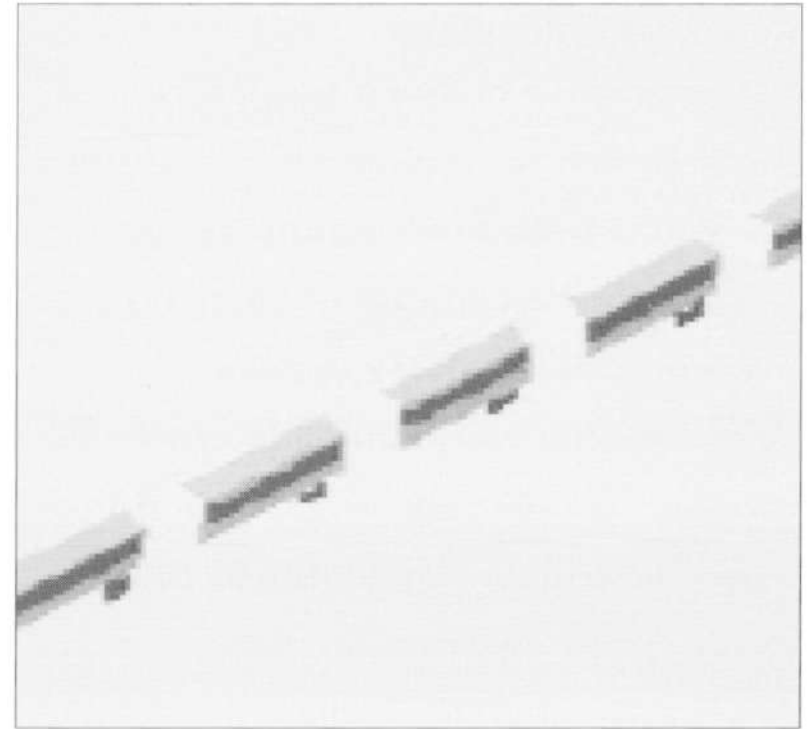
## Scud Missile Sites

Scud missiles posed a huge threat to the stability of the Gulf region during the war. These mobile long-range missiles were capable of carrying nuclear, chemical or massive conventional warheads and were the most effective long-range weapons of mass destruction available to the Iraqis. Their destruction was imperative and the Iraqis knew it. Therefore they were continually on the move using the cover of night to avoid satellite tracking. Once located, they were quickly and decisively visited by Coalition strike aircraft.



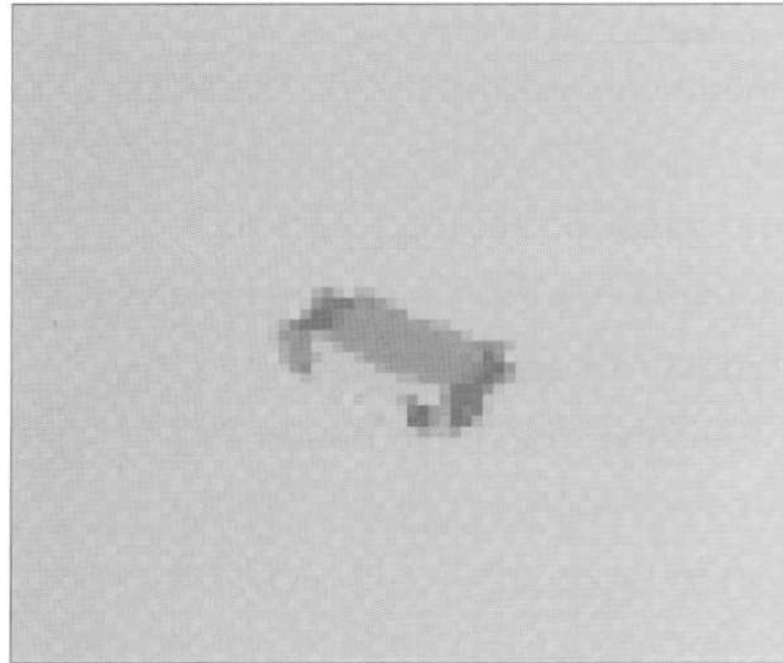
## Shelters & Bunkers

Important personnel and equipment were housed in heavily fortified bunkers. They were often partially submerged for strength and constructed from reinforced concrete several feet in thickness. Bombing raids were frequent upon such targets because the Iraqi war machine was controlled by the generals within. Pin-point accuracy is required on these targets because only a direct hit with a large weapon would pierce the blast proof shell. LGB's and SLAM are ideal for these targets.



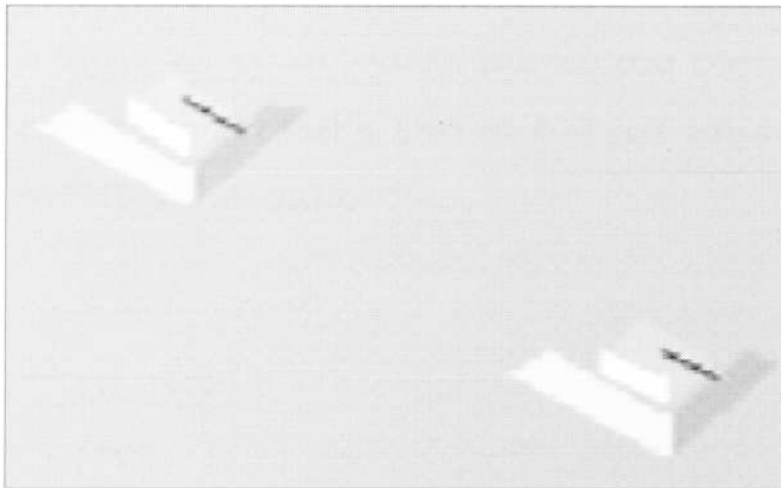
## Supply Trucks

Convoys of trucks carrying anything from food to ammunition would wind their way daily towards the Iraqi front lines. These supply vehicles kept the Iraqi army on it's feet. If the Coalition could break the lines of supply, then front line units would be severely weakened. Supply trucks are not designed to withstand attack but to carry large loads and can therefore be regarded as 'soft' targets. As such they are susceptible to both cannon and rocket attack as well as from more 'potent' weapons.



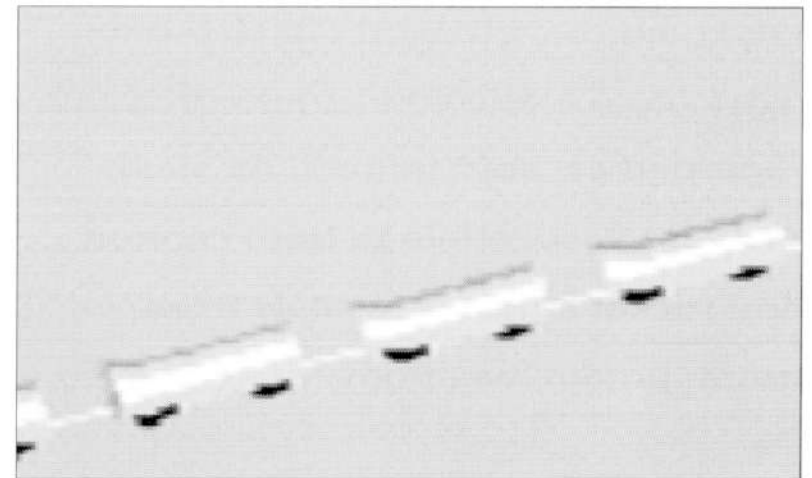
## Tanks

Heavily armoured, quick and small, tanks are difficult targets, whatever the weapon. Yet the Iraqis had invested heavily and had one of the largest forces of tanks outside the superpowers. These posed a substantial threat to ground troops and must be taken out. A well placed Maverick or two will take care of them.



## Trains

Another supply link was Iraq's extensive rail network. Rapid troop and supply deployment could be minimised by destroying both train and track. Mavericks, Zunis and drop bombs will leave just a cloud of smoke in your wake.







**VICTORY SCENARIO**

## VICTORY SCENARIO



Overall victory can be achieved in several ways. When Kuwait is liberated and all enemy forces are removed from the province, then victory may be declared. In addition, an invasion of Iraq may be considered. In this situation, victory is complete when all enemy targets are obliterated and allied units are in control of all areas.

A third scenario, which may be seen as a 'diplomatic' victory, is the successful extermination of Sadaam. You may discover, through intelligence, that Sadaam has been shot-down aboard a transport aircraft

en-route to a communications bunker deep within Iraqi airspace. With their leader gone, the Iraqi forces must surely crumble. Or will they?



## Credits

Design and Programming

Ed Scio

Artwork

Jeff Bramfitt

Producer

Steve Riding

Quality Control

Mark O'Connor, Paul Jones & Jed Adams

3d objects

Paul Franklin, Ed Scio

Speech samples

David Ader & Andrea Morris

SFX

Phil Morris, Tim Wright

Gameplay

Nick Burcombe, John Alsop

Manual documentation

Richard Biltcliffe

Picture Credits

Richard Clayton, Rex Features Photo Library, Imperial War Museum Photo library, Imagebank (Manchester). Special thanks to Express Newspapers Ltd. for their kind permission in allowing us to take extracts from their publications

Manual Layout & Design

Top Draw

Package Design and Concept

Keith Hopwood

Printed & Manufactured

Hesketh, Southport

And I suppose we'd better mention Mark Blewitt, Maggie Goodwin, Digby Rogers, Mark Crowley, Glen O'Connell, Roysey boysey & Andy Birkleybum without whose invaluable help this game would not have been a damn sight better without like some people say but would have in fact been heaps and heaps worse.

### Designers Notes

After programming Armour-Geddon with Paul Hunter I decided I wanted to write a flight sim. This was because Armour-Geddon was set in an abstract world where whatever we said was law. I wanted the challenge of writing to a real world set of rules.

The Gulf War had ended just a few months before I was due to begin the project and this seemed to offer the logical scenario for a flight sim. I decided to base CAP on the Tomcat and Hornet because a) they complement each other and b) carrier-borne aircraft seem much more exciting. At that time there were a few flight sims around which went into extreme detail on one aircraft or very little detail on many aircraft. I figured CAP would sit happily between both types.

Psygnosis teamed me up with artist Jeff Bramfitt who I believe (maybe I'm biased!) has created the best cockpit graphics of any sim so far, especially when you consider they are drawn in only 16 colours.

The project was to have taken just 12 months to write but after continually adding features actually took twice that amount of time (I'm saying nothing - Steve). I hope you enjoy the result!

Development time:	2 Years
Program size:	110,000 lines
	381 k
Graphics data:	30 files
	656 k
Audio data	44 samples - 2khz to 10khz
	162 k

The size of the defined 3D world is approximately 360,000 sq miles. There is no 'wall' at the edges of the world so you can fly for as long as you like but wont see anything, though if you flew 26843 miles in one direction you would end up where you started!Feedback

If you would like to pass on any comments about CAP whether they are things you liked, disliked or would like to see, I can be contacted through Compunet UK. My ID No. is 100121,2767.    scrt\_type       f18       Hornet

