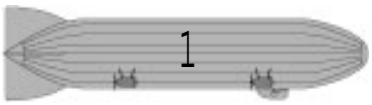

AIR
POWER
STING
MINDSCAPE

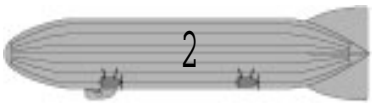


Mindscape present
A Rowan Software Ltd game

CREDITS

Design	Rod Hyde, Mark Shaw
Programming	Paul Dunscombe, Rod Hyde, James Taylor, Dave Whiteside
Artwork	Andy McCann, Andy Manns, Mark Shaw, Richard Cook
Music	Paul Robotham
Shapes	Andy McCann
Sound Engineers	One Stop Digital
Compression	LZEXE: Bellard, France. LHARC: Yoshizaki, Japan
Q.A.	Darren Chapman, Andrew Curry, Matt Dean, Neil Dutton, David Grundy, Buck Irving, Brian Pinckert, Scott Van Schoick, Adrian Wood-Jones
Actors	Richard Cook, John Corcoran, Amanda Fair, Stuart Gardiner, David Grundy, Iain Kilty, Andy McCann, Graham McCann, Andy Manns, Mark Manns, Stuart O' Rourke, David Rees-Jones, James Taylor, Steve Tickle, Steve Whittle
Voices	Delia Corrie, Mel Dean, Randal Herley, Pete Johnson, Redvers Kyle, Alan Sykes, Alex Wetham, Frederic Guepan, Jean Pierre Mailhac, Michele O' Donnell, Didier Paris, Florence Vasseur, Norbert Hermann, Ralf Jeuter, Alex Samely, Ursula Samely, Matthis Schulze
Marketing	Saul Leese
Manual	Richard Hewison
Producer	Steve Whittle

Contents



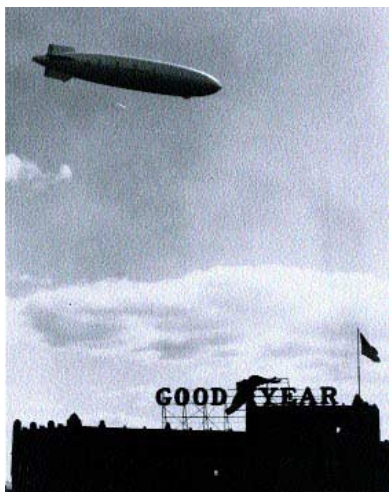
CONTENTS

SECTION A - HISTORICAL GUIDE	3
THE HISTORY OF AIRSHIPS	3
THE STRUGGLE FOR AIR POWER	7
THE PROTAGONISTS	9
HOW TO PLAY AIR POWER	10
WINNING & LOSING	10
TECHNICAL REFERENCE SECTION	11
SECTION B - TUTORIAL	12
THE HUNTED	12
SECTION C - THE GAME	16
MAIN MENU	16
SCRAMBLE	16
LOAD GAME	17
NEW GAME	17
MAP	19
GAME OPTIONS	22
FIRST OFFICER	23
WAR CHIEF	24
DIPLOMAT	28
CONFIGURE	30
SECTION D - FLIGHT	33
STARTING POSITION	37
THE COCKPIT	37
EXTRA VIEWS	39
CONTROLLING OTHER AIRCRAFT	44
SECTION E - HINTS & TIPS	45
FLYING HINTS	45
SHOOTING HINTS	46
SECTION F - REPLAY	48
VIDEO EDITING SUITE	48
SECTION G - TECHNICAL REFERENCE	53

SECTION A
historical guide

THE HISTORY OF AIRSHIPS

Airships were extensively used during the First World War (1914 - 1918). Employed as strategic bombers against the British this tactic initially proved to be reasonably successful; most memorable were the German Zeppelin raids over London. However, a defence was soon devised which ruined their effectiveness and airship losses increased to intolerable levels. Strategic bombing was ultimately abandoned.



AKRON - Courtesy of the Royal Aeronautical Society

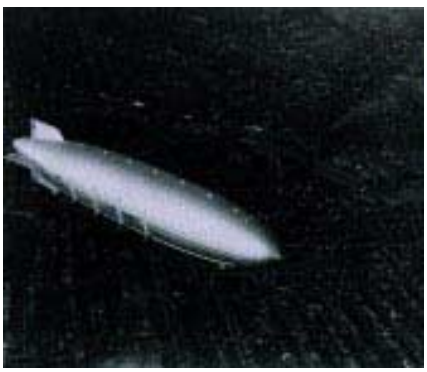
During the 1920's, the United States began commissioning 'rigid' airships. The 'Shenandoah' (ZR-1) was the first of these to be inflated using helium instead of the highly flammable hydrogen gas. Unfortunately, the design contained structural weaknesses that were only revealed after she had crashed. The ZR-2 was built in England where it was designated the R-38 and her fate was sealed when she broke up during performance tests. Zeppelin Enterprise in Germany produced the ZR-3 as part of their war compensation to the United States. The ZR-3 was renamed 'The Los Angeles' by President Coolidge's wife in 1923.

Towards the end of the 1920's, the U.S. Bureau of Aeronautics called for bids on two large rigid airships designed to carry out scouting duties for the U.S. Navy Fleets. After fighting off competition from the American Brown - Boveri Electric Corporation, Goodyear - Zeppelin's 'Project I' won the Bureau's favour. With some modifications, the project led to the design of the 'Akron' (ZRS-4) and the 'Macon' (ZRS-5). Both airships were designed to carry five aircraft each. The aircraft's primary task was reconnaissance, however defensive duties were also required.

In October 1928, the Navy and Goodyear signed the contract whereby the Ohio based company would build the two airships for the sum of $5,375,000 for the first and $2,450,000 for the second. This was an enormous amount of money in 1928 and those opposed to the rigid airship concept did not fail to emphasise the high cost. Whilst design modifications continued, Goodyear began work on the building shed site at Akron. The shed would measure 1175 feet long, 325 feet wide, and 197 feet 6 inches high. The first arch was erected on May 21st 1929 and was virtually completed on November 7th of the same year when construction of the first airship officially began.

Previous Contents

Meanwhile, the Bureau of Aeronautics sought a solution to the question of what kind of aircraft would be carried by the new airships. The prime requirement was that the type must be able to pass through an opening 30 feet wide and 24 feet long to gain access to the aircraft hangar. The Bureau evaluated three small bi-plane carrier fighter prototypes, and of the three, the Curtiss XF9C-1 (though judged a failure for sea carrier operations) was selected as the most suitable for the airship. Ultimately six production F9C-2s, with a wing span of 25 feet 6 inches and a length of 20 feet 2 inches were purchased.



AKRON - Courtesy of the Royal Aeronautical Society

The 'Akron's' maiden flight was in September 1931. 113 people were aboard including the Secretary of the Navy, the Assistant Secretary for Air, the ten-member Navy Board of Inspection and Survey, President Litchfield and other Goodyear-Zeppelin officials. Nine more trial flights followed and during these flights the 'Akron' fell three knots short of her contractual full speed of 72 knots. Once again, press latched onto this as another 'failure'. Despite this shortfall, the 'Akron' was commissioned on October 27th 1931.

As the first of the Navy's large rigid airships, the 'Akron' benefited from the sophisticated ground handling equipment that had become available. Without such equipment, it would have been impossible for a small ground crew to handle a craft of that size in windy conditions. Using a mechanical procedure, just a few men could lead the ship from the shed and out onto the field. Attached to a specially designed mooring mast that ran on railway tracks, the 'Akron' could be pulled from the hangar by a small diesel locomotive.

In the 'Akron' the Navy finally had a large rigid airship specifically designed for fleet operations. If this proved successful, a fleet of ten such rigids would be considered under the U.S. Navy war plans. Unfortunately, the 'Akron's' first year was plagued with operating difficulties and material deficiencies; training in fleet operations barely commenced and an expedition to the West Coast cast doubt on the ability of the big rigid airship to operate for an extended period without a hangar.

Previous

Contents

'Hook-on' flights did not commence until 1932 in a Scouting Force exercise between Cape Lookout (North Carolina) and the Bahamas. 'Akron' delivered a fine technical performance, with 3000 miles travelled in three days, some of it through snow and icy conditions which no aeroplane could have survived. However, whilst the airship discovered one cruiser and twelve destroyers, it failed to detect some destroyers which had in fact sighted the airship.

Setbacks and further tests were to follow for the 'Akron'. Aircraft launched from surface carriers proved that she was vulnerable to aerial attack. Fuel problems dogged her on the way back home; six tonnes of fuel and finally the aircraft had to be jettisoned to compensate for the ship's heaviness.

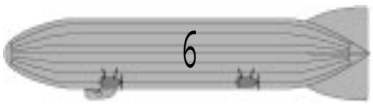
MACON - Courtesy of the Royal Aeronautical Society

A storm finally ended the 'Akron's' service in early April, 1933. There was an unsuccessful attempt at circumnavigating the bad weather. The airship was caught in the violent storm; she lost altitude quickly and ballast was released. The 'Akron' levelled off at 700 feet and began to rise quickly although a few minutes later the air became extremely turbulent and again the ship fell. At 300 feet on the altimeter the surface of the water was sighted. A few moments later, the U.S.S. 'Akron' was down in the sea. 73 of her 76 passengers died that day and due to the small number of survivors it was difficult to determine exactly what had caused the disaster. The survivors gave their accounts leading to the disaster to the Court of Enquiry and based upon this the 'Akron' disaster was attributed to the Commanding Officer, Commander Frank C. McCord, who perished in the accident.

Although the 'Akron's' sister ship, ZRS-5 (the 'Macon') was nearing completion at the time of the crash, the destruction of the 'Akron' almost signalled the end of the rigid airship in the U.S. The 'Macon' featured a number of design improvements, including better streamlining of the radiators and outriggers and the introduction of efficient three bladed metal adjustable pitch propellers which enabled her to achieve a greater speed than the 'Akron'.

The 'Macon' was to suffer from the same tactical limitations as her sister ship. In sea trials, the 'Macon' was repeatedly 'shot down' by anti-aircraft fire or by carrier aircraft. The 'Macon' was a vulnerable target and it proved essential that the big airship should remain in the background during battle. Changes in the airship's role from Scout to relay station and command centre were evaluated. Also it became obvious that the airship's aircraft would require a greater range and better direction finding equipment for the return to base

Previous Contents

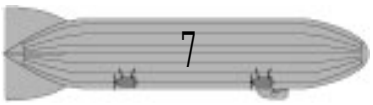


All these problems attracted much adverse criticism and so the ‘Macon’s’ new commander, Herbert V. Wiley devised a scouting mission to generate some good publicity. From newspaper reports, Wiley determined the probable course and position of the cruiser ‘Houston’ on which President Roosevelt was onboard en route from Panama to Hawaii. ‘Houston’ was located quickly and the President and his aides looked on in shock as they were buzzed by aircraft fighters without landing gear, some 16,000 miles from the nearest land! Excitement rose when the ‘Macon’ came into view, the fighters returned to the airship’s hangar and soon after, returned to buzz the ship once more although this time dropping newspapers and souvenir mail for the President. The Commander in Chief U.S. Fleet was furious with Wiley’s display of ‘misapplied initiative’ although the Chief of the Bureau of Aeronautics was delighted. Wiley faced court marshal for his misconduct and only escaped after the intervention of the President.

Some structural weakness in the ‘Macon’ had been detected. However, plans to remedy the faults were delayed so that the ‘Macon’ could continue taking part in Naval exercises. This delay proved to be a fatal mistake. On the 12th February 1935, the ‘Macon’ was struck by an exceptionally severe gust, and lurched violently to starboard. The upper fin ripped off, and the tail cone began to deflate rapidly. In an attempt to balance the airship, the control car personnel dumped such large quantities of fuel and ballast that the stern-heavy ship, still being driven by her engines, rose way beyond pressure height (2800 feet) and continued up to 4,850. So much helium was lost that the ship was no longer buoyant, and it didn’t take long before she hit the water. Fortunately, safety measures had improved since the ‘Akron’ disaster and only two people from the crew of 83 perished.

By 1937 every country had abandoned airships, with the exception of Germany. However, this did not deter the Bureau from developing new designs for aircraft carrying airships (Carriers) specifically aimed at offensive purposes (the proposed ZRCV airship). Although it was acknowledged that the rigid airship had never had a fair chance to show off its capabilities in strategic scouting, the General Board failed to recommend the development of the large ZRCV. Plans for a much smaller training ship (the ZRN) were dismissed due to the adamant insistence of President Roosevelt that it should be no longer than 325 feet. With this imposed on any design plans, they would have ended up with a useless technical monstrosity, so the rigid airship project in the United States was drawn to a close.

Previous **Contents**



Meanwhile, Germany's Zeppelin airships had an excellent reputation; none had crashed, nobody had ever been killed or even injured in a Zeppelin. As a result of their reputation, no one was prepared for the horrific events that were to follow over New Jersey in May 1937. The 'Hindenburg' had set off to complete the first Atlantic crossing of the new season. As she hovered over the mooring mast at Lakehurst New Jersey, a small fire which had started in a rear compartment, could be seen. Within seconds the entire airship was engulfed by flames and violently crashed to the ground as people ran for their lives. The other remaining airship - the 'Graf zeppelin', was withdrawn from service and was later dismantled. The airship era was over.

Now imagine a world parallel to our own. Imagine a world in the 1930's. A world geographically different from the one we know today. A world where the development of airships followed a different path...

A BRIEF HISTORY OF KARANTHIA

There was a time not so long ago, when the country of Karanthia was divided into four provinces:

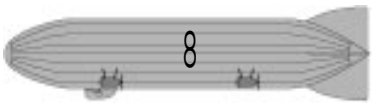
North	Karakuss
East	Mersia
South	Revont
West	Chanadon

Each province was ruled by a duke who was in charge of all local affairs. However, he was also answerable to the central imperial court. Often there was friction along the borders. Small incidents were dealt with by the duke's own regional army, but for major outbreaks the elite imperial guard was called in to sort out the dispute using whatever means necessary.

10 years ago...

To the east of Karanthia lies the country of Cimaria, who for years had laid claim to Karanthia's eastern plains. One fateful day, Cimaria began the invasion of Mersia, using new carrier airships that were able to strike deep into the heart of the province. With Mersia on the verge of being overrun, the neighbouring provinces refused to become involved. Emperor Thantos Araya realised that all of the provinces would be invaded one by one unless he acted quickly. To this end he struck a deal with the ruling dukes, resulting in the marriage of his own four daughters. Then, in a combined show of force, the armies of the provinces and the imperial guard drove the Cimarians out of Karanthia.

Previous **Contents**



So impressed were they by the impact of the airship carriers during the conflict, that a year later Karanthia began to develop her own carrier fleets.

5 years ago...

To the Northeast of Karanthia, the Ferrymen cult spread throughout the continent, infiltrating communities everywhere and ruling through fear. The authorities began to struggle to stem the flow of the insurgence.

One month ago...

A major earthquake hit the country of Barunda to the west. Millions of refugees flooded into Karanthia's western province of Chanadon.

Two weeks ago...

The Emperor died alone in his throne room. Many Karanthians had little faith in his weak son, Otto. Rumours about the impending collapse of the Empire spread throughout the provinces like wildfire. On hearing these rumours, the Cimarian forces mobilised themselves along the east and south borders of Karanthia.

Five days ago...

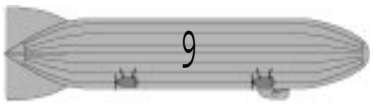
Just before his coronation, Otto was discovered dead. Foul play was immediately suspected. With the throne empty, the country started to break down. Feuds began anew and old grudges were pursued. Major skirmishes ignited along the borders, and many communities decided to break away and form their own states.

Three days ago...

Dukes Wilheim Taranus and Ivan Paratrados, along with Duchess Grabrielle Dorosia (on behalf of her husband) arrived at the Kapital to claim the throne. The fourth claimant, Duke Malheidees failed to arrive on time due to a relief mission at Barunda. The Emperor's aide and second in command demanded that each one proved their right to rule by gaining the votes of the people. The claimants weren't happy - much of their support had crumbled over the years.

Taranus' air fleet was on standby at Kilmovsk, ready for a strike on the nearby Kapital. Unfortunately for him, Paratrados heard reports of a fleet present in his own province. He immediately sent his own fleet to investigate, and a battle ensued. The situation soon worsened when the Dorosian fleet arrived with orders to specifically track down and destroy Taranus' fleet. The fleets were evenly matched and the battle raged on, devastating the town below it in the skirmish. Eventually the fleets were recalled to their home bases.

Previous **Contents**



2 days ago...

Cimarian ground forces massed on Karanthia's borders once again, waiting for the country's disintegration to be irreversible. Both Mersian and Revont ground forces moved to protect their respective borders. Cimarian combat airships crossed unopposed into Karanthian airspace. Refugees and opportunist bandits flooded into Chanadon from the west, whilst Ferrymen cultists massed on the northern borders of Karakuss.

1 day ago...

Yesterday Duke Malheidees' fleet returned to Karanthia from its relief mission. The other dukes are preparing their fleets for the task ahead.

Now you must decide which side to play in the struggle for the throne. The time for Air Power has come.

THE PROTAGONISTS

Duke Wilheim Taranus

Belligerent leader of the north region of Karakuss, the Duke has been preparing for this campaign all his adult life. Marrying one of the Emperor's daughters was just one step in the preparations.

Duchess Gabrielle Dorosia

The Duchess from the eastern district of Mersia is the arrogant daughter of the late Emperor. She does not believe that the fact that she is a woman should stand between her and the throne. Gabrielle means to continue the Arayan dynasty.

Duke Ivan Paratrados

Hailing from the southern region of Revont, this Duke is concerned that Duke Taranus will become a Tyrant and so decides he must make a stand now. He hopes to achieve his aims through diplomacy rather than the gun.

Duke Rowan Malheidees

Leader of the western region of Chanadon, Duke Rowan Malheidees has been forced to return from a relief mission to the earthquake torn country of Barunda thanks to the worsening political situation in Karanthia.

Previous Contents

HOW TO PLAY AIR POWER

This is a world where gigantic airships dominate the sky. These ships are used by the dukes to project power across their borders, over land or sea. There are no safe havens. Capable of launching and recovering their own aircraft, these Zeppelins' are able to defend themselves and strike deep into enemy territory.

To win the throne and become Emperor you must prove your right to succession by converting people to your cause and gaining their pledges of loyalty. There are a number of different ways to achieve this. You can talk to the settlement leaders directly via diplomacy, intimidate and pressurise them by seizing the settlement, or force a change in leadership. Only by studying intelligence reports, spy reports and heeding the recommendations of your own loyal officers can you hope to gain the upper hand. You will also need to keep your fleet re-supplied as well as fight off the military moves of your adversaries.

It is worth noting that pledges have different values attached to them based on the size of the settlement they came from. For example, the pledge from a City is worth more than a pledge from a Village. Pledges from 4 Cities would give you more support than pledges from 10 Villages.

WINNING & LOSING

There are three ways to win the game:

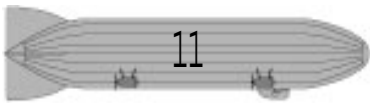
1. You can gain enough support to safely reach the palace and be crowned the new Emperor.
2. You can go to the Kapital and try and force your way past the Imperial Guard.
3. You can defeat all three opposing dukes.

None of these options are easy. The final option is particularly challenging. You need to hound the enemy fleet down, knock out their resupply points until their Carrier has no place to go and succumbs to its damage. However, remember that whilst you are doing this, the other three challengers are busy moving across the map and taking over settlements, increasing their strength.

There are two ways to lose the game:

1. Your Carrier is severely damaged and there are no friendly resupply points for you to return to and get repairs.
2. One of the other dukes reaches the Kapital first and succeeds in being crowned Emperor.

Previous **Contents**



TECHNICAL REFERENCE SECTION

Please read the separate Technical Reference Section for system requirement details (memory, graphics, control devices, etc.). You will also find specific installation & loading instructions for your machine. This main manual has been written based on the IBM PC version so please check this section and the separate keyboard overlay for any differences specific to your own machine.

SECTION B
TUTORIAL

THE HUNTED

CD-ROM versions of Air Power will play an introduction before loading the main game. Sit back and enjoy. If you wish to skip the introduction and get into the game as soon as possible, press ESC. This will take you directly to the Main Menu. Now select the first option (SCRAMBLE) and choose the first mission on offer - The Hunted.

For the purposes of this tutorial we shall assume that you are using the default keyboard controls. You should use your keyboard overlay to learn what each key does in the game. They are mentioned throughout this manual and are also discussed in more detail in the Flight section.

You will begin the game in the cockpit of a Vampire fighter aircraft, flying towards your own friendly fleet of airships. Press P to pause the game. Now take some time to look at the instruments shown on the cockpit dashboard in front of you.

Three dials to the middle and right of the dashboard show your current altitude (ALT) in feet, engine revolutions per minute (RPM) and speed measured in miles per hour (MPH). Next to the ALT dial is an extra digit. This represents the current altitude in thousands of feet. For example, the digit says 15 and the dial shows the longer needle pointing at the 7 whilst the shorter needle is pointing at the 4. This would mean the aircraft is at a current altitude of approximately 15,740 feet, (the shorter needle points out the tens whilst the longer needle points out the hundreds).

Below the MPH dial is an indicator which shows the number of frames used and the total available for capturing your exploits on video and replaying them later. (Press V to toggle the video on/off). This is discussed in more detail later in the Replay section of this manual.

Previous

Contents

To the left of the dashboard are two indicators marked R (in Light fighters) B (in Heavy fighters) and G. R shows the number of rockets available, B shows the quantity of bombs available and G shows the amount of Gun Rounds (ammo) available. Each time you launch your rockets or fire the guns, the numbers will decrease. Once at 0 you are out of ammo!

Above these two indicators you will find a compass which shows your current heading in degrees. You will need to consult this during missions to ensure you are heading in the correct direction. For example, when the number 260 lines up with the middle of the compass, you are following a heading of 260 degrees.

Two small lights are fitted above the compass. The left light is illuminated when auto-pilot is engaged and the other indicates when auto-firing mode is on. Auto-pilot will take you to the next waypoint automatically (more details on waypoints later). Auto-fire will fire at any enemy aircraft that flies through your aircraft's sights en route to the next waypoint. It will only work when the auto-pilot is turned on. Auto-pilot is toggled on/off by pressing A and auto-fire is toggled on/off by pressing T.

Now that you know what each indicator on the dashboard does, we are going to investigate a few of the different view types available. With the game still paused, press the [key on your keyboard. The view will change. This is known as the 'look up' view because it simulates the view you would get if you were to look up from your current view inside the aircraft.

Apart from the usual sky and aircraft, you will also see a new panel appear in the bottom third of the screen. This contains a lot of useful information, including your current heading, the distance from your next waypoint (and its relative bearing in degrees), your altitude and much more besides.

You can also change the view to show your own aircraft from outside the cockpit, your nearest enemy, etc. Press function key f5. This will show you an outside view of your own aircraft. Function key f7 will show you the same outside view except the 'camera' will be positioned directly above (referred to as the 'satellite' view). You can learn about other views by reading the Flight section or using the keyboard overlay.

You will notice messages appearing near the top of the screen eg. 'Bandits at 6 O' clock, Range < 2'. A Bandit is a generic name for any enemy aircraft, so this message is saying that an enemy aircraft is at 6 O'clock. Imagine a clock face. 12 O'clock points directly forwards. 3 O' Clock is to your right, 6 O'clock is behind you, and 9 O' Clock is to your left. When the message says that a bandit is at 6 O' Clock, it means that it is directly behind you. The range is less than two miles, so they are very close!

You can see exactly where they are in relation to your own aircraft by pressing the Enter key. This will switch the view to an 'Outside combat lock' on the nearest bandit. This constantly moves the view to keep your aircraft in the foreground and the enemy aircraft in the background. This will keep you aware of where the enemy is in relation to your own aircraft. At the start of The Hunted mission you will see that they are literally right on your tail.

These are just a few of the views you can bring into play whilst flying your aircraft. Whilst the game is paused you should refer to your keyboard overlay and experiment with the other views on offer. When you are ready to continue with this tutorial, press 7 which will take the view back inside the cockpit of your own aircraft. If you are still in 'look up' mode, press] to revert to the normal cockpit view. Alternatively, users may wish to use a joystick. Select the CONFIGURE option in the main menu to change the setting to the required control device (keyboard is default).

We are now going to turn pause off and return to the game, so press P again and the game will continue. You now know that there are two enemy aircraft directly behind you. The first thing you should do is turn around and try shooting them down before they shoot you! To turn your aircraft use the left or right cursor (arrow) keys on your keyboard. The up cursor key will point the nose of the aircraft down and the down cursor key will tip it up. To fire your guns, press the Spacebar when the enemy are in your sights.

You can increase or decrease the speed of your aircraft by pressing the + and - keys. To increase to maximum revs press > or to decrease to minimum revs press <

When both enemy aircraft are destroyed your mission is completed. You can finish by pressing function key f10 and choose END MISSION from the options, by pressing ALT X in the cockpit, or you can press L (to alert your Carrier that you are ready to return) then engage the auto-pilot (by pressing A) and watch your aircraft fly back and dock. You can speed this up if you wish by pressing TAB to toggle the accelerated time option on/off. Once inside your Carrier, the Deck Officer will pass judgement on the success (or failure) of your mission. You might also pay a trip to the Pilot's bar if you've been particularly successful.

You might find the enemy a little difficult to cope with in this mission. Your first few attempts will probably end with you being shot down. Fortunately you can adjust the difficulty level of the game but it has to be done from the Main Menu before the mission is chosen. This is explained in detail in the 'Configure' section of this manual, but briefly this option allows you to weaken the enemy, make you invincible, give you infinite gun rounds and much much more. You can see these

options by pressing function key f10 during a mission. N.B. Certain options are disabled when in flight.

Remember that SCRAMBLE missions are one off scenarios which take no part in the overall campaign which you play via the NEW GAME option. For this reason, once a mission is over you will end up back at the Main Menu.

SECTION C
THE GAME

MAIN MENU

From here you can choose from the following options:

SCRAMBLE	Choose a mission and leap into your aircraft with the minimum of fuss.
LOAD GAME	Restore a previously saved game and continue to play.
NEW GAME	Choose your character and start a new game.
CONFIGURE	Allows you to change the Current Operating Conditions.
CREDITS	Learn the names of the people who have worked tirelessly to create Air Power.
QUIT	Quits the game.

To choose an option, move the pointer to highlight the option on the menu then left-click with your mouse. Usually this will lead you to other menus and other options which can be selected in the same way.

You can also use the keyboard in the menus. <TAB> will cycle through the options, SHIFT <TAB> will cycle backwards through the options and <Enter> or <Space> can be used to confirm your selection.

SCRAMBLE

If you want to get a taste of the airborne action as soon as possible, ignore the other options and select SCRAMBLE. You will then be presented with a list of unique missions to choose from. Each one will involve a different element from the overall game, allowing you to become comfortable with the various aircraft before you have to fly them in a real campaign. Point at each mission to be given a brief description at the bottom of the screen. To choose your mission, point and left-click on your mouse.

The Hunted

Swarm

Hunter Killer

Escort

Suppression

Battle In The Sky

Sitting Duck

Salvo

The Challenge

LOAD GAME

This is the second option found on the Main Menu. You only need to select this if you have a previously saved game to load in. If you have, select the name of the save game file from the list on offer, or choose CANCEL to go back to the Main Menu.

NEW GAME

When you start a new game, your first decision will be which character you choose to play. There are four on offer and their details are available by pointing at their name in the middle of the screen and reading the biography that appears at the top. When you have decided, point at the name and left-click. Whichever character you choose to play, the remaining three adversaries will be controlled by your computer during the game.

Each character has a different personality, reflecting their varying styles of diplomacy and war making. The quality and performance of their officers also differs. To succeed you will need to adopt the personality traits of the character you have chosen to play. For example, there's little point in trying to attack settlements every time when your character is best suited for diplomacy.

Assemble your fleet!

Next on the agenda is your choice of Flagship for your fleet. There are four Airships on offer:

Danzig

Pride

Glorious

Wartide

Each Flagship has a different complement of aircraft associated with it. For example, the Wartide uses the swept-wing Vampire fighter and the Firestorm bi-plane aircraft. All eight different types of aircraft are discussed in more detail in the Flight section of this manual.

Once your Flagship has been chosen, you will be taken to the Bridge. This is where the decisions get made during the game. On the Bridge are your three most important officers.

FIRST OFFICER Your first officer has a number of responsibilities, starting with informing you of your current fleet status.

WAR CHIEF As you might expect, the War Chief's expertise lies in the area of military action. His knowledge should be consulted and his recommendations considered whenever you choose to fight rather than talk to a settlement.

DIPLOMAT Diplomacy is the alternative option. The services of the Diplomat are essential when negotiating with a settlement and winning their co-operation and trust.

You will also get to meet the Deck Officer when you return in one piece from a campaign mission. He will evaluate your performance and offer advice. If you perform particularly well you may also join your fellow pilots for a celebratory drink in the pilot's lounge!

Bridge Menu

When on the Bridge you are first told that the fleet has arrived at its destination. Left-click your mouse (or press <Return>) and a new menu will appear, giving you a wide choice of options to choose from:

MAP

INTELLIGENCE

GAME OPTIONS

REPLAY

FIRST OFFICER

WAR CHIEF

DIPLOMAT

You will also notice some information displayed in the top left corner of the Bridge screen. The first line indicates the current level of support for you throughout the land. As the campaign begins, you will only have the support of your own home settlement. As you conquer settlements or gain allies, the number of pledges will increase. The next line down tells you how many days have passed since the campaign began. The final line tells you your current location in Karanthia.

MAP

If you choose this option from the Bridge menu, a Map of Karanthia is laid out before you. Each challenger begins in a different region of the map (roughly

equating to North, East, South and West). The initial position of your fleet depends on which character you choose to play. The map is very important to your success. From here you can move your fleet, gather intelligence on locations and plan your next move.

You will also notice a large number of variously sized square markers scattered across Karanthia. Each marker represents a settlement of some kind (town, village, etc.). The colour of the marker determines its current alignment. The location of your own fleet is highlighted by a large bounding box around the settlement marker where your fleet is currently positioned.

Marker colour	**Alignment**
Green	**Neutral**
Brown	**Held by Bandits**
Blue	**Held by Taranus**
Yellow	**Held by Dorosia**
Red	**Held by Paratrados**
White	**Held by Malheidees**

NB. Settlements with a black marker in the top right hand corner are re-supply points.

At the start of the game, each challenger begins with just one settlement under their control. As the game progresses and the characters spread out, the level of support for each challenger will change quite often.

The Emperor's throne is situated in the very heart of Karanthia, at Kapitial. However, don't be tempted to try and take it over before you have enough support from the settlements. Kapitial is protected by the elite imperial guard. They will quash any pretenders to the throne who use direct force. Only when a challenger has the required number of pledges will they be allowed safe passage into the palace. If you try to approach without much support, you will be forced to fight your way through wave upon wave of imperial ships.

You can point and left-click on any of the settlements. This will display additional information with a few new options to select underneath. For example, looking at Jelec (bottom middle of the map, to the right of Livny) would tell you it is a neutral town with no facilities worthy of note. You would also be told how many hours it would take to travel there from your current position. The name of the current leader is also listed here. If you enter into diplomacy with the settlement,

this will be the person to whom your DIPLOMAT will speak. Below this you will see some additional options.

Travel To

This instructs your FIRST OFFICER to move the fleet to this location. You will be asked to confirm this. A further set of options are then revealed. Before leaving your current location to travel to a settlement, you can review the following:

Pilot Status The morale of the pilots in your fleet is important. They begin with very high morale, but their spirits can soon drop if the campaign goes badly. Pilots with low morale will not perform as well in combat. Some may even decide to turn and head for home rather than fight the enemy. There is a way of helping them change their mind, but we will leave that for you to discover...

Spy Report This tells you a number of useful things. It reports how the average Karanthian citizen regards you at this point in time. This opinion is a reflection on your reputation and this can change depending on how you conduct yourself throughout the campaign. Left-click or press <Return> to see the status and whereabouts (if known) of your adversaries. As you might have realised by now, all information is useful in a campaign. You can see information on your next opponent by selecting NEXT. PROCEED will skip any remaining dukes and move the game onto the next screen.

These reviews are only conducted before the fleet travels to the new settlement. The reason for this is because the only time the crew are free for reviewing is before fleet transit.

If you now choose to PROCEED then the fleet will make its move and travel to the location on the map. Your First Officer will inform you when the fleet has arrived. Be prepared though as not all your journeys will be uneventful. There is a chance that your fleet may be attacked by pirates whilst enroute to the next settlement. The likelihood of this happening will increase if they think you are an easy target or if you have attacked a number of bandit settlements recently. You will be taken straight into your defending aircraft cockpit when you left-click or press <Return>.

Also during travel, there is the chance your fleet may encounter events other than pirate attacks. You will be given the choice of reacting to these incidents or bypassing them. Selecting the PROCEED option will put you in the cockpit of the aircraft leading the investigation. BELAY ORDER will ignore the opportunity and

keep the fleet travelling to its destination. Sometimes these encounters will be to your advantage, and sometimes they won't!

INTELLIGENCE

This option displays an intelligence report with more specific information on the location you have selected (e.g. the size of the settlement, other details about the geographical location, the potential danger levels, etc.). The same information is available from the Intelligence option found on the Bridge Menu, although this only relates to the settlement your fleet is currently above.

If the information is too long to be displayed in the information window, the scroll arrows at the bottom of the bank of available options can be used to reveal more of the text. Just move the pointer to the up or down arrow and left-click or press <Return>. These arrows will be available on a number of screens, and they are used in the same way.

BELAY ORDER

Cancel and return to the previous screen or option. This option appears on a number of screens and performs the same task on all of them.

GAME OPTIONS

Back to the Bridge Menu, this option will take you to a new screen presenting further option allowing you to change a number of in-game features. These options are:

SAVE — Allows you to save your current game. You can choose from ten save game slots. The saves are automatically named with the name of your current location within Karanthia. If you change your mind just select the CANCEL box at the bottom of the screen. Saved games can only be restored by using the LOAD GAME option from the Main Menu.

MAIN MENU — Takes you back to the Main Menu. However, it will also force you to abandon the current campaign.

CONFIGURE — Allows access to the Current Operating Conditions screen. From here you can configure a large number of options, some of which can only be altered prior to aircraft take off. This is the same option as the CONFIGURE option found in the Main Menu.

PROCEED Returns to the bridge.

REPLAY This option, available on the bridge, is discussed in its own section later in this manual.

FIRST OFFICER

The First Officer is your second in command. He performs a number of duties on and off the Carrier. When you select this option, you will be informed of the current status of the fleet. This includes the number of available Frigates, Gunships, Light Fighters and Heavy Fighters as well as the number of Re-supply Depots currently controlled by your forces. (You gain these whenever you take control of a settlement via war or diplomacy which contains a Re-supply Point). The number of aircraft and their type is obviously vital to your fleet in times of battle.

The First Officer also has a number of other responsibilities. He will pass on your orders to the rest of the fleet when you wish to move to a new location in Karanthia (via the MAP function and the TRAVEL TO option). He also has a part to play when diplomatic negotiations get underway. He will accompany your Diplomat and represent your wishes during any such meetings. See DIPLOMAT for further details.

A new option (R & R) will be available from the First Officer's Menu if you are currently at a re-supply point and your fleet needs repairs or resupplying.

R & R

If your Carrier is damaged or you have lost aircraft in battle, this option will give you the chance to repair or resupply your fleet. You will be given an estimate by your engineers how long the task will take. You should then choose from the menu how long you will allow.

WAR CHIEF

There will be many occasions when you will need to consult with your War Chief. You will often need to weigh up the options as to whether to enter into diplomatic negotiations or decide to use force to gain control of a settlement. The War Chief is always available to offer you the best advice on your present military strength and the chances of success in the current situation.

When you first choose the War Chief from the Bridge Menu, you will be immediately told his general opinion about the current location. Remember this is always approached from the viewpoint ‘to attack or not to attack’. Some new options are also available.

SIEGE

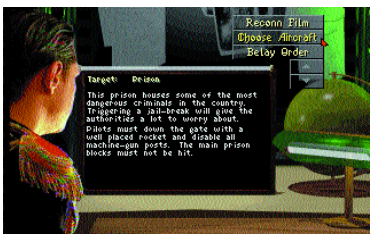
SUPPRESSION

BELAY ORDER

When you enter into a military campaign at a settlement then you remain in it until you end the campaign. You can still move between the various screens and use other options, but when you return to the War Chief he will be waiting to

continue the campaign you started. You can end a campaign by consulting the War Chief on the bridge and selecting the END CAMPAIGN option. Moving the fleet to another settlement will automatically terminate any campaign in progress.

SIEGE



A Siege is the blockading of a settlement with the ultimate intent of forcing it to surrender. It is deliberately aimed at the civilian population; resources are targeted to put unbearable pressure on the populace. This will ultimately force the leader to capitulate before there are mass riots. Having surrendered his pledge, the Mayor is then allowed to stay in office. Not all the targets need to be destroyed in a siege mission. It all depends on how soon the terrorised people give in.

Your War Chief will present you with a list of possible targets, depending on the size of the settlement. (Some of the smaller settlement's assets are so insignificant or widely dispersed that it will be impossible to target them. Suppression is the only other military alternative in this scenario). Choosing a target from the list will display further information which should help you decide on your course of action. The targets in the list are also colour coded to show their current status:

Colour	**Status**
Yellow	**Undamaged**
Brown	**Damaged**
Grey	**Destroyed**

A few additional options are now available from the menu in the top corner of

the screen.

Reconn Film — A black & white film clip will play, showing you the actual site and the target. This is useful, as it gives you the chance to ‘eye ball’ the target before you fly your aircraft into battle.

Choose Aircraft — Once a target has been selected, you need to choose which aircraft are to be used from your fleet. You will be told the number and type of available aircraft, and your War Chief’s recommendations for this mission. If you agree with them,select FLY MISSION to be taken into the cockpit of the aircraft. However, you can alter the composition of aircraft for the mission if you prefer. Point and click at the recommended items to display a new pop up menu giving you alternative choices. You can alter the Strike Type, Escort Type and the Escort Duty. Strike type defines which type of aircraft or airship will be used to attack the mission target. Escort type defines which type of aircraft will be used to protect the strike fleet from various threats (enemy fighters, ground defences). Escort duty specifies which of these dangers the escorts will concentrate on.

The aircraft and bomber blimps have varying degrees of effectivness:

Light Fighters — Armed with Rockets. Best used for precision attacks on ground based targets.

Heavy Fighters — Carry Bombs. For small to medium sized ground targets where precision isn’t as important, as long as the target is destroyed.

Airship — Only used for strike missions. Will ‘Blitz Strike’ a target with multiple bombs. Best saved for special occasions! (You cannot directly control the Airship yourself)

There are four types of Escort Duty on offer:

None — No escort duty chosen

Fighter — Sends in fighters to take out other aircraft

Wild Weasel — Fighters go in specifically to take out AAA guns on the ground. Light fighters will use Rockets, Heavy Fighters will use Bombs against them.

Mixed — Will split the Escort type between Fighter and Wild Weasel.

Remember that you can always change your mind by selecting BELAY ORDER at any stage.

Suppression

This is the alternative plan of attack. Suppression aims to eliminate the leaders who oppose you, giving you the chance to install a new Administration lead by a community figure more sympathetic to your cause. The new Administration will not talk to any of your opponents diplomats if approached. You achieve this by limiting the settlement's ability to defend itself so that sympathisers on the ground can take up arms and safely dispose of the leaders and take over the council.

Select Suppression from the menu. You will then be shown a list of possible targets. Choosing any target will display additional information. As with a Siege you are then presented with a new menu, allowing you to view RECONN FILM, CHOOSE AIRCRAFT for the mission, or BELAY ORDER and return to the previous screen.

To successfully complete the coup you must put all of the available targets out of commission.

Rout Bandits

Each of the four provinces has fallen victim to warlords from Karanthia and other countries. They moved in quickly and conquered as many of the settlements as they could. They have since consolidated their position, leaving the settlements under the control of bandits. When you visit a settlement held by these Bandits, the Warchief will present you with an option to ROUT BANDITS. You can then choose from a number of vital Bandit targets to attack within the settlement. Destroying all the bandit assets will force them to flee from that settlement. The leader (usually a Mayor) will be exceptionally grateful and pledge instant support to you. This will anger the controlling warlord.

Destroy Warlord

The Warlord is responsible for the bandits. To defeat a Warlord you must destroy his stronghold. Strongholds are military bases, where the Warlord directs his operations from. They have no civilian population and cannot pledge support. Destroying a stronghold removes it from the map completely. To do this, consult the Warchief and select the DESTROY Warlord option. You will be presented with a list of targets, all of which must be destroyed. Attacking a Warlord is a big and dangerous gamble but you can gain a lot of support and increase your reputation in a short space of time; settlements held by the Warlord will be liberated upon his defeat and instantly pledge support to your cause.

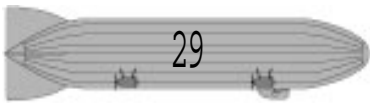
Fleet to fleet encounters

It is also possible for your fleet to encounter the fleet of another duke. If you arrive over a settlement and find an enemy fleet already there, a fleet to fleet campaign is mounted. The aim is to damage the enemy carrier or destroy so many of their aircraft and other fleet assets, that they are forced to retreat to a safe haven and initiate repairs. When one fleet is forced to leave an area, the settlement immediately pledges support to the victorious side, impressed by the display of strength.

DIPLOMAT

If you are to succeed in your battle to become Emperor of Karanthia, you must know when to abandon force in favour of a more peaceful resolution. When you first talk to your Diplomat on the Bridge of your Carrier, he will give his expert opinion on the current situation. If a peaceful resolution is possible, it can do no harm to send your Diplomat and First Officer to meet the leaders of the Settlement. If this is your wish, select PROCEED to begin the diplomatic process.

The leader of the settlement will either begin to ask questions or inform you of his councils decision immediately regarding any possible pledge of support. You are then given two possible responses to choose from - whether to enter proper discussions or ask for a pledge there and then. If the leader responds favourably then asking for a pledge immediately would save you vital time. If not, then you will need to make a favourable impression first. You can consult the



Intelligence reports to gain some extra insight into the way they think whenever you have to respond to a question. Use your judgement. What are these people like? What is relevant to them? What is topical? You can then use the PREV and NEXT options to cycle through the available responses. Think carefully before you choose your reply. Sometimes you will be required to be arrogant, other times you will need to tread carefully and not upset or insult your hosts. Select PROCEED to confirm your choice of answer and continue with the next round of talks.

Having ordered a meeting, your diplomat and first officer will travel down to the settlement and go to the Mayor's office. The Leader may inform you immediately that he has already reached a decision. In that case, the only option available will be PROCEED. This will return you to the bridge of the Carrier. If the leader greets you and is open to conversation then you have the choice of entering discussions or asking for a pledge there and then. You do this by using the NEXT and PREV options. This cycles through possible statements your diplomat can give to the Mayor. PROCEED selects the current statement. The player must judge which option is right for the situation. If the player knows that his reputation is high and the Mayor has received him favourably then it would be safe to ask for a pledge outright. Otherwise, it would be wise to talk to the leader in the hopes of impressing him and swaying his opinion.

Having entered into a discussion with the leader, your diplomat will be asked a number of questions. Click to view the possible answers. You can consult the intelligence to gain some insight. You must use your judgement. Your knowledge of the people, their history, their way of life, the situation in that region of Karanthia - all these factors can be taken into account when choosing the right answer. Having used NEXT and PREV to view the possible answers and PROCEED to make your choice, the leader will respond. He will continue to ask questions until he gives his decision and you are returned to the bridge.

There will be occasions when using your Diplomat is not an option. For example, when you travel to a settlement held by Bandits, you have no choice but to engage them in battle if you wish to gain control. You won't need the services of a Diplomat at settlements that are already held by you, so he will be unavailable. If you arrive at a settlement held by another duke's administration, again your Diplomat's services will not be required.

Neutral settlements will nearly always listen to what your Diplomat has to say. However, some settlements already allied to others will not be willing to let you talk if they think it may be more advantageous to them.

Previous **Contents**

CONFIGURE

Choosing this option from the Main Menu will take you to the Current Operating Conditions screen. You can also get here from a number of other screens. The options that are available depend on whether you are in-flight or not.

Engines	**Normal or Super**
Vulnerability	**On or Off**
Arms	**Limited or Unlimited**
Targets	**Soft, Medium or Hard**
Enemy Activity	**Low, Medium or High**
Starting Position	**In Air or On Carrier**
Real Time	**Combat or visible**

These first seven options affect the way the game plays. Once you are in the air, you cannot change these settings unless you abort, end the mission or die first.

Super will give your Engines 50% more thrust than Normal.

If you have Vulnerability turned Off, then your aircraft cannot be destroyed.

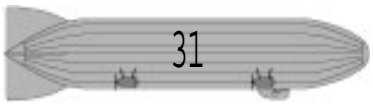
Unlimited Arms allow you to let loose with your weapons without worrying about running out of ammo.

If you are shooting at Soft enemy Targets you can fire just wide and still register a hit, whilst Medium will register a hit anywhere on the aircraft. Hard Targets can only be damaged if they are hit near the centre.

The level of Enemy Activity affects the average skill of the enemy pilots. This in turn affects how well the enemy reacts during the campaign.

The Starting Position is obvious - when you begin a mission you can either start from just outside the Carrier or from a position in the air close to your mission target.

Real Time allows you to define when the Accelerated Time option (toggled on/off by pressing <TAB> should disengage. Visible will disengage it when an enemy is within visible range (approximately seven miles away), whilst Combat will only disengage it when you are within combat range (approximately a mile and a half away).



Mouse sensitivity	Low or High
Screen Fades	On or Off
Control Type	Keyboard, Joystick, Joy-Throttle, Flightstick Pro, Thrustmaster and Recalibrate
Joystick sensitivity	Low, Medium, High or Custom
Separate Rudder	On or Off
Sound	All but Engines, All On or All Off
Music	On or Off
Detail level	Low, Medium or High
Auto Detail	On or Off
Auto Window	On, Minimum or Off
Radio Chat	On or Off

These remaining options deal with issues of presentation, sound and controls.

Mouse sensitivity allows you to adjust how far the mouse pointer moves in relation to how far you have to move your mouse. When set to Low you have to move it twice as far compared to the High setting.

Screen fades can be toggled on or off. Slower machines will benefit most from disabling screen fades.

The Control Type is important. This dictates what control device you decide to use in the game during the flight section. The types available depend on the machine you are using. More details on the more specialist control types can be found in the Technical Reference Section.

You can also adjust the Joystick sensitivity. Adjust this option and see which setting suits your joystick best in-flight.

If you have separate rudder pedals you can use them to control the Separate Rudder by turning this option On.

Sound defaults to All On But Engines. There are three different options on offer.

The Music used in the menus can be turned off with this next option.

Detail level settings affect the presentation of the game in the 3D flight sections. You can choose to alter the settings here to suit your own preferences, or to tailor the performance of the 3D to the capabilities of your machine. The lower the detail the less objects and ‘texture mapping’ appears. This will result in the 3D frame rate increasing as it has less to cope with. Choose between Low, Medium or High.

Previous **Contents**

Auto Detail can do the job for you, adjusting the detail when it requires to keep the speed of the 3D flight consistent. Some slower machines will slow down when there are lots of objects in view (for example, a large dogfight in the sky featuring many aircraft and airships).

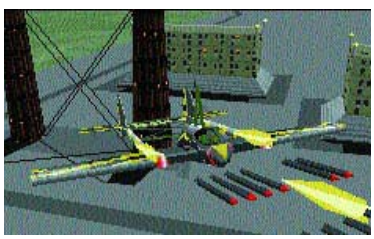
Auto Window is another way of avoiding slowing down in the 3D. The size of the 3D window will shrink and enlarge during the flight to keep the graphics running at a consistent level.

The final option is used to turn Radio Chat On or Off. This is audible chat, as opposed to the messages that appear at the top of the screen during flight. This is only available on the CD-ROM version, which features high quality speech.

SECTION D
FLIGHT

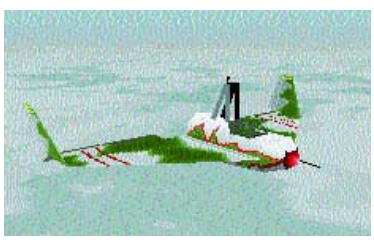
There are two ways of climbing into the cockpit of an aircraft. You can either select SCRAMBLE from the main menu and choose a mission, or you can set up a campaign mission and choose to FLY MISSION. Either way you will end up in the cockpit of your aircraft.

The type of aircraft depends on the chosen Flagship and mission. There are eight different types featured in the game:



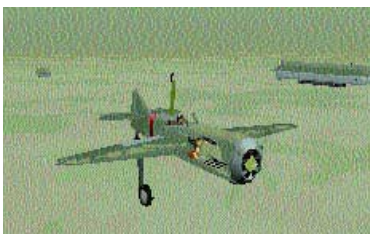
Name:	Hornet.
Class:	Light Fighter.
Max. Speed:	121 MPH at 14600 ft. Fully loaded.
Distinguishing features:	0Black/Yellow markings. Sting insignia on tail.
Advantages:	Stable gun platform.
Disadvantages:	Slowest Light Fighter in the conflict

Name: Dragon.
Class: Heavy Fighter.
Max. Speed: 121 MPH at 14400 ft. Fully loaded.
Distinguishing features: Twin Boom tail structure.
Advantages: Gull-wing structure results in superb dive-bombing
Disadvantages: None of significance



Name: Delta
Class: Light Fighter
Max. Speed: 137 MPH at 14600 ft. Fully loaded.
Distinguishing features: Delta Wing structure.
Advantages: Fast and agile.
Disadvantages: Large surface area makes it an easy target

Previous Contents



Name: Banshee.
Class: Heavy Fighter.
Max. Speed: 111 MPH at 14500 ft. Fully loaded.
Distinguishing features: Fixed landing gear.
Advantages: Durable.
Disadvantages: Fixed undercarriage increases drag.

Name: Goblin.
Class: Light Fighter.
Max. Speed: 131 MPH at 14500 ft. Fully loaded.
Distinguishing features: Forward swept wings.
Advantages: Fast roll rate. Ability to turn suddenly.
Disadvantages: Twitchy in inexperienced hands.

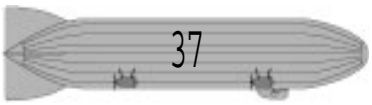
Previous Contents

Name: Raptor.
Class: Heavy Fighter.
Max. Speed: 119 MPH at 14400 ft. Fully loaded.
Distinguishing features: Fixed landing gear.
Advantages: None
Disadvantages: Fixed undercarriage increases drag.

Name: Vampire.
Class: Light Fighter.
Max. Speed: 136 MPH at 14300 ft. Fully loaded.
Distinguishing features: Wings swept back.
Advantages: Agile and rugged. Good all-rounder.
Disadvantages: Doesn’t excel in any one area.

Previous

Contents



Name: Firestorm.
Class: Heavy Fighter.
Max. Speed: 117 MPH at 14700 ft. Fully loaded.
Distinguishing features: Old style Bi-plane.
Advantages: Agile. Low stall speed.
Disadvantages: Looses out to some of the more modern aircraft

STARTING POSITION

You might have already seen this option, found on the Current Operational Conditions screen (Select CONFIGURE from the Main Menu). If you change the starting position to 'In Air' then you will find your aircraft within a few miles of your designated target. This usually means that the enemy are also very close to your starting position, so be ready! 'On Carrier' means that you start your mission just as the Carrier has released you from its aircraft hangar. You may have to travel many miles before you reach your target, but this does give you more time to get used to the aircraft, change the views and mentally prepare yourself.

THE COCKPIT

The basic cockpit features a number of displays in the form of dials or readouts. They all give the pilot vital feedback as to the current state and position of the aircraft.

Previous **Contents**

1. Guns

These are your guns. When travelling directly at an enemy aircraft, you should fire when the aircraft is in range (less than 1 mile) and passing between both gun nozzles. See Shooting Hints for further information.

2. Altimeter (ALT)

This tells you your current altitude in feet. The digit outside the dial indicates how many thousand feet you are, whilst the long needle points to the hundreds and the shorter needle points to the tens within the dial itself.

3. Engine revs (RPM)

This dial shows the number of engine revolutions per minute (RPM). This can be reduced by using the + and - keys during flight.

4. Speed (MPH)

Your aircraft's current speed measured in miles per hour (MPH).

5. Rockets (R)

The number of rockets left. This only applies when your aircraft is fitted with rockets for a ground target attack or a Wild Weasel escort duty. If you are carrying Bombs then a B is shown instead.

6. Gun rounds (A)

This number indicates the number of gun rounds left. Each time you press fire, one round is used up. When the figure reaches 0 you will be out of ammo.

7. Compass

This compass rotates left and right through a full 360 degrees. When a number lines up with the middle of the compass display, the aircraft is then following that heading.

8. Auto-pilot indicator (red)

This light will turn on when the auto-pilot feature has been engaged (by pressing A). The aircraft is now under automatic pilot control and will perform in the same way as all the other computer controlled aircraft. It will move to engage the enemy, so all you need do is fire the guns and take all the glory. To turn the auto-pilot off and return to manual flight, press A again.

9. Auto-guns (red)

This light will turn on when you press T to switch on the auto-guns. When

enabled, the auto-pilot will shoot at any enemy aircraft it engages. This only works when the aircraft is in auto-pilot mode. Press T to disable the auto-guns and revert to manual firing.

10. Video counter

The two numbers here indicate the current page number and the total number of pages available for video footage. Press V during flight to start recording, and press V again to stop. See the Editing suite for further details on how to view this footage after a mission is over.

Nearly all of the aircraft use this cockpit layout, so an experienced Goblin pilot for example could fly a Delta Fighter without too much difficulty. The only differences are likely to be minor ones. For example, Heavy Fighters uses Bombs instead of Rockets, so you will find a Bomb indicator B replaces the usual R for Rockets on the dashboard.

If your aircraft has other weapons in addition to the standard guns, you can switch between them by pressing the Page Up key.

In the CD-ROM version you can gauge how many of your fellow pilots are still alive by pressing D. This will ask them to respond. Each pilot will then 'call in' using their aircraft call signs. This option is not available in the floppy disk version.

EXTRA VIEWS

Air Power offers a whole multitude of different views, from inside and outside your aircraft. You are not just limited to the view of your own cockpit!

Internal views

You can change the view from inside your aircraft. The number keys 5 - 8 will switch to the following:

5	View rear of aircraft from inside cockpit
6	View left of aircraft from inside cockpit
7	View front of aircraft from inside cockpit
8	View right of aircraft from inside cockpit

External views

There are lots of extra views you can switch to when flying a mission. Some are very useful, others are more aesthetic. The 'viewee' can be changed, as will be explained later. Other useful information is made available from these extra views. The following assumes that you are starting from the inside view of your own cockpit. (Press ESC to return to the inside of your cockpit if you aren't there already).

Outside View

Press function key f5. This gives you a view of your aircraft from a fixed position outside. Below the outside view is an information panel which reveals a lot of very useful information.

Information Panel

The panel shows information in four different categories, shown in the left column. The information relevant to those categories is then displayed along each line. The categories are:

Piloted AC	The type and callsign of the aircraft you are flying.
Next WP	The next waypoint (Navigate, Attack, Land - discussed in Waypoints section).
Pos Info	Position Information for aircraft or locations specific to the current mission. Examples include your own Home Base, the current Opposition, and the current Escortee.
View Type	The current type of view (Outside, Track etc.) and the viewee (which is your aircraft at the moment).

Along each line you will see additional directional information relating to the category on the left.

Piloted AC	Shows your current Heading, Speed and Altitude.
Next WP	Shows the waypoint's Relative Bearing, Range from you, and its Altitude (see Waypoints for further details)
Pos Info	Shows Relative Bearing, Range and Altitude
View Type	Shows information relevant to the current viewee, as well as the Range to it and the view State (fixed or free).

Views, viewees and states are described in the next section.

To change the view state, press Q whilst viewing the information panel. For example, if you were watching an outside view of the nearest enemy, Fixed would remain on the first aircraft it locked onto, even if another enemy came closer afterwards. Free will always lock onto the nearest enemy, changing from aircraft to aircraft as they get closer.

With the information panel on display you can also make some changes:

‘	Steps through each waypoint for the mission and changes the course your aircraft should follow.
;	Steps backwards through the sequence of waypoints to repeat the earlier course instructions.
SHIFT ;	Cycles through the pre-determined aircraft or location positions set for this mission.

Waypoints

Waypoints are pre-determined positions linked to your current mission. The information panel will tell you if you are using the waypoint as a navigation marker (so you know you are on the right route) by display NAVIGATE. However, waypoints sometimes mark the location of targets to be attacked, so the panel will show ATTACK instead. If the waypoint is your home Carrier then it will say LAND instead. If you like, think of a map with a series of dots leading from one location to another. You would follow the dots to ensure you reached the correct destination. In this example each dot would be considered a waypoint and the information on the panel tells you what to do when you reach that particular waypoint (navigate, attack or land).

The panel also mentions a Relative Bearing for the waypoint. To fly directly at the waypoint in a straight line, the figure here must be 0. If it isn’t, you will need to turn your aircraft until it reaches 0 then level out. You should also make note of the altitude of the waypoint and try and match it.

Viewee

There are many other views available and a number of objects which you can view. We call these viewees.

To change the viewee press the following:

Missile view	SHIFT f2	Current bullet, rocket, bomb (if fired)
Nearest Friendly AC	SHIFT f3	Your nearest friendly

Nearest Enemy AC	SHIFT f4	If within 20 miles of your position
Current Enemy AC	SHIFT f5	Current Enemy engaged with your aircraft
Message About	SHIFT f7	Subject of your last radio message
Ground Target	SHIFT f8	Target for this mission
Nearest Target	SHIFT f9	Nearest ground target to your aircraft
Specific friends	SHIFT 1 - 8	Based on aircraft callsigns
Your piloted AC	SHIFT ESC	Your own aircraft

Fixed/Free

Some of these views select the most appropriate viewee from a list of available viewees. For example, Nearest Enemy selects the nearest from all the enemy aircraft. Missile View selects the last bullet or bomb that you launched.

When the viewee state is fixed (see the bottom right hand corner of the information panel), the selected viewee will not be changed when a more appropriate view becomes available. For example, when another aircraft is closer or when another bullet is fired the view will remain on the initial viewee.

If you press Q or SHIFT f then the state will toggle from fixed to free. When free, the viewee will be automatically updated to reflect the action. For example, each time an enemy aircraft gets closer than all the others it will become the new viewee.

While in fixed mode, pressing ALT f will select the next nearest aircraft or ground target and will loop back to the current nearest aircraft at a range of 20 miles.

To quickly select the current most appropriate viewee, press CTRL f.

To change the view of the viewee, press the following:

Chase view	f4	Camera behind, as if chasing viewee
Outside	f5	Camera behind, maintains distance and remains steady (no change in pitch or heading)
Track	f6	Camera behind, follows pitch and heading
Satellite	f7	Camera above, looking down on viewee
Outside Lock	f8 or	Camera keeps viewee in centre regardless of movement
Inside Lock	f9	Camera inside your cockpit, keeping viewee in middle at all times

You can combine these key presses and cover every eventuality. For example, if you wish to have a Chase view of the Current Enemy AC you would press f4 followed by SHIFT f5 (or vice versa).

Two particular combinations are very handy and have also been assigned individual key presses:

Outside Combat Lock	<Enter>	Equivalent to SHIFT f4, f8
Inside Combat Lock	<Backspace>	Equivalent to SHIFT f4, f9

Both of these Combat Lock views can be very useful. Outside Combat Lock will always have your own aircraft in the foreground, and the nearest enemy aircraft will be kept in the middle of the screen at all times. Inside Combat Lock is similar, except it does this from inside your cockpit. Imagine that your head can turn around 360 degrees to follow the nearest enemy aircraft at all times from inside your cockpit. This might sound a little odd, but in practice it is very useful for keeping tabs on the enemy's position. When there is no cockpit showing it can be a little confusing, so a few orientation arrows have been added so you can tell which way is up, down, left or right.

When looking at most of these extra views, you can zoom in/out and rotate around the current viewee:

Zoom in	f1	Zoom in closer
Zoom out	ALT f1	Zoom further out
Rotate horizontal	f2	Rotate view through the horizontal axis (From Port to Starboard)
Rotate vertical	f3	Rotate view through the vertical axis (Anti-clockwise direction)

To reverse the direction of the rotating, press ALT f2 or ALT f3. To reset the views back to normal, use CTRL f1, f2 or f3 respectively, or CTRL R to do all of them at once.

CONTROLLING OTHER AIRCRAFT

It is also possible for you to take control of other aircraft other than the one you are flying when you start the mission. You can ‘jump’ into the seat of any other aircraft on your side by using the CTRL key and the callsign numbers. For example, you may start your mission flying Goblin 1. By pressing CTRL 2 you will leap into Goblin 2 and fly that aircraft instead. The number of Escorts in the mission determine how many other aircraft you can ‘jump’ into and control. If you press CTRL and a number and nothing happens then either that aircraft has been destroyed, or you have jumped into the last available aircraft in the sequence. Don’t worry about the aircraft you have just left. It will now be flown as if another pilot is in control.

If your aircraft is shot down then all is not lost. You can use the CTRL key to take over control of another friendly aircraft. If there are no other aircraft, then there’s not much you can do other than let nature take its course or by pressing f10 and selecting ABORT MISSION.

SECTION E
HINTS & TIPS

FLYING HINTS

Climbing

To climb, you need to tip the nose of your aircraft upwards and increase your speed. You need to be careful exactly how far back you are tipping the nose, else you risk the chance of stalling your aircraft. For a gradual and sustained climb, try to reduce your climb angle.

Diving

A dive may sound simple, but to perform a dive and remain in control is another matter entirely. You usually need to perform a dive when attacking a ground target. Simply tip the nose of the aircraft down towards the ground, but keep an eye on your Altitude at all times!

There are other ways of reducing your altitude other than by diving. Reducing your speed will cause the aircraft to reduce altitude. You can also lose altitude when your aircraft turns, although using the rudder should help compensate for this. If you make a quick, tight turn (as opposed to a slow gradual turn) you will need to not only turn in the correct direction but also tip the nose up a little at the same time.

Stalling

You can stall your aircraft when you climb too steeply. When an aircraft has stalled it will lose altitude and the nose will drop. You will also be unable to control the aircraft's movement. To remedy the situation, you need to increase the speed and then gradually pull the nose of the aircraft up until it levels out. Stalling is actually caused by the loss of lift from the aircraft's wings. The only reason why an aircraft is able to climb is because the lift provided by the wings is greater than its own weight.

Previous Contents

Air flaps

The flaps are raised or lowered by using the f key. They alter the lifting effect that the aircraft wings. They are used when coming into land or taking off.

Rudder

The rudder is controlled via the Numeric keypad. It is used for rotating the aircraft left or right without turning and banking the aircraft. Left rudder will move the aircraft nose to the right, and vice versa.

End (key 1)	Full rudder left
Page Down (key 3)	Full rudder right
Insert (key 0)	Gradual rudder left
Delete (key .)	Gradual rudder right

You may need to use Air Brakes (press B) which alter the air flow over the wings and effectively brake the aircraft in mid-air.

SHOOTING HINTS

You might think that as long as you can shoot straight, dogfighting with the enemy is going to be easy. Well it isn't! For a start, the enemy targets aren't going to be immobile (unless you are attacking a ground target!). Whilst shooting straight is easy if you are directly behind your target, shooting from above or from the sides requires a little more skill, especially when the target is moving.

To hit a moving target you need to anticipate its flight path. Remember that the bullets have their own speed and trajectory. You need to aim at the space you expect the target to be in a moments time. A machine gun bullet has a range of about 200 yards, so don't waste any ammo trying to fire at something further away because you won't hit it!

Bombing runs are different - you need to remember that whilst the ground target is stationary, you are moving. You therefore need to release the bombs a little before you are flying directly over the target, because the bombs will be travelling forward as well as descending. Again you need to anticipate this and time the release of the bombs carefully. Nobody said taking the military option was going to be easy!

The other side of the coin is when you are being shot at by the enemy. You might come under fire from ground weapons (AAA guns for example are designed to take out aircraft from the ground). You need to learn how to avoid or at least minimise the number of hits your aircraft sustains during a mission. If an enemy aircraft gets behind you, don't make it easy for him by flying straight and level. A controlled dive and a sharp turn can get you out of a fix. The only 100% sure way to avoid enemy fire is to take out the enemy before he does the same to you!

SECTION F
REPLAY

You can only use this option if you have previously activated the video film camera during flight (by pressing V to toggle it on/off), or if you have some previously saved footage to load in. The length of your footage depends on the amount of EMS available (see your Technical Reference Section for further details). Once activated, the footage will remain only in memory until it is saved to your hard disk via the save function found on the editing suite. You can only save your footage to hard disk if you have sufficient hard disk space available.

The Editing Suite

With the editing suite you can cut and paste footage together and also change the camera angles and viewpoints if you are unhappy with them. Using the controls is simple. Your mouse pointer is used to point and highlight an option. To confirm the selection, you then left-click.

Information bar

This bar stretches along the top of the screen and shows you the filename of the current footage being edited (if it hasn't yet been saved, it will be called NEW by default). The filename can be a maximum of eight characters long. Next is Last Page which is the amount of memory your footage occupies. Expanded memory is divided into individual 16k pages, starting at 0. For example, if your footage is 30k then the Last Page will be 2. The Position is the location in memory of the current video frame. The first digit indicates the current page number.

Video controls

PLAY/PAUSE


Plays the footage when selected, or Pauses if the footage is already playing. Select it again to resume playing.

STEP FORWARD 1 FRAME


Advances the footage forwards by a single frame.

STOP


Stops the footage.

REWIND TO START


Rewinds the footage back to the start.

FAST VISUAL REWIND


Rewinds the footage at a fast rate.

REWIND 1 PAGE


Rewinds the footage back by 1 memory page.

FORWARD 1 PAGE


Advances the footage forwards by 1 memory page.

FAST VISUAL FORWARD


Advances the footage forwards at a fast rate.

FAST FORWARD TO END


Advances the footage to the very end.

You will also find that the layout of the numeric keypad on an IBM PC corresponds to the layout of the video controls. For example, 7 will toggle between Play and Pause, whilst 5 will perform a Fast Visual Rewind.

Rotate & Zoom controls

Selecting one of the buttons below will start the zoom or rotation. This will continue until the button is pressed again.

The H arrow controls allow you to rotate left or right about the horizontal axis.

The V arrow controls allow you to rotate up and down around the vertical axis.

The Z arrow controls allow you to zoom in or out.

Selecting the letter buttons H, V or Z will reset the views to their default settings.

You can also use the same keys that you would use in flight for rotating and zooming in or out of the view. For example, function key f2 or Alt f2 for vertical rotation.

View Type selection

This menu has seven different options to choose from. The currently selected option will appear at the top of the menu for your reference. The views here are the same as those available when flying the aircraft.

TRACK	Track view of the viewee
INSIDE	View of viewee from your cockpit
OUTSIDE	Outside view of the viewee
CHASE	Chase view of the viewee
SATELLITE	Satellite view of the viewee
IN LOCK	Inside Lock view of the viewee
OUT LOCK	Outside Lock view of the viewee

When you first view a replay, the TRACK view is chosen by default. You can't do any harm by changing the views, so feel free to experiment with them here.

Viewee selection

This determines what you actually view in the replay window. The menu displays the current selection at the top for your reference.

PILOT AC	Your own aircraft
NR GROUND	The nearest ground target, if there is one
HOME BASE	Your home base (your Carrier Flagship)
NR UNDFRND	The nearest enemy aircraft
NR FRIEND	The nearest friendly aircraft

As with other functions of the editing suite, you can also change the views by using the standard function keys you would use during flight.

Other functions

Those functions listed are activated by pressing the first (initial) letter of the function. For example, C toggles the cockpit on/off when viewing a replay from inside the cockpit.

Previous **Contents**

VIEWEE FIX/FREE	Toggles between fixed & free viewpoints (V or Q)
COCKPIT ON/OFF	Toggles cockpit artwork view on/off (C)
TIME NORM/ACCEL	Toggles between normal or accelerated time (T)
MSL VW ON/OFF	Toggles automatic view of bullet, rocket or bomb flight on/off (M)
IMPT VW ON/OFF	Toggles automatic view of on-target explosions.

Video editor

The panel at the bottom of the screen is the Video footage editor. From here you can edit, splice, cut, load and save your footage to and from your hard disk.

Start Marker

These functions allow you to manipulate the position of the start marker.

Start	Places the start marker at position 0 (the start of the footage)
Mark	Places the start marker at the current footage position
Go	Move current footage position to position of start marker

Block Edit

A block is a section of video footage marked with a start marker (at the start) and an end marker (at the end). This function allows you to edit these blocks.

Del	Deletes the current video footage block permanently
Write	Writes a video footage block to your hard disk
Read	Reads a video footage block into RAM, allowing you to splice different video footage segments together

File Edit

These functions allow you to manage your video footage files. These are automatically stored in a sub-directory called VIDEOS.

LOAD	Loads a previously saved video footage file into the video editor. It will replace any video footage that is currently in memory.
SAVE	Saves the current video footage to your hard disk. You can give the file a name up to a maximum of eight characters. You don’t have to provide a file extension name.

Del	Deletes a video file from your hard disk. You can choose which one to delete.

End Marker

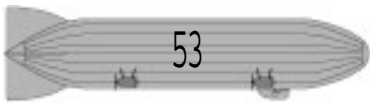
As you would expect, this function allows you to manipulate the position of the End marker.

End	Places the end marker at the last frame of the current video footage
Mark	Places the end marker at the current video footage position
Go	Move the current video footage position to the end marker

You may need to experiment a little to become proficient with the editing suite. However, with a little thought it is possible to create some visually exciting cinematic replays if you edit your footage in the right way.

Exit

When you have finished, select Exit to return to the Bridge Menu.



SECTION G
TECHNICAL REFERENCE

INSTALLATION

To install Air Power to your Hard Disk, you need to first insert Disk 1 or your CD into the correct drive in your PC. You should then log onto that drive as normal (e.g. if drive A is your 3.5" drive, insert Disk 1 into drive A then type A: and press < Enter >). Now type INSTALL and again press < Enter >. Once the install program has loaded, follow the on-screen prompts to begin installing.

LOADING

When installation has finished, type AIRPOWER at the DOS prompt. The game will load using the settings you entered in the Install program. The Install program can also be run from Hard Disk if you need to make any changes to your graphics and sound options at a later date, or you may type AIRPOWER ? at the DOS prompt. These values will then be saved and used whenever you load Air Power until you change them again.

SYSTEM REQUIREMENTS

Air Power needs a minimum 486DX 33 MHz IBM PC or 100% with at least 4Mb of memory for VGA, 8Mb for SVGA. A VGA or VESA VBE compliant SVGA graphics card and monitor is also required. Supported sound cards include Soundblaster, Adlib, Roland MT32 or LAPC-1. Control devices include mouse, keyboard, Analogue Joystick, Joy-Throttle, Flightstick Pro and the Thrustmaster. The CD-ROM version requires a minimum double speed (MPC-2) CD-ROM drive.

MEMORY REQUIREMENTS

Air Power needs a total of 540 Kb free conventional memory, plus a minimum 2500 Kb of EMS memory. Extra EMS is used for the in-flight video film function. The install program requires 500 Kb to run.

Type MEM at the DOS prompt to find the amount of free memory available on your computer. You need to note down the third figure along from "Total under 1MB" (found under the 'Free' column), and also the "Free Expanded (EMS)" figure.

For detailed suggestions on how to free more memory, users should read the ASCII file TECHREAD.ME (which you will find installed onto your Hard Disk).

JOYSTICK CALIBRATION

You will need to calibrate your analogue joystick before you can use it with Air Power. Choose Configuration from either the Main Menu or via the Game Options menu on the Bridge. Choose joystick control from the Control Type

option on the Current Operating Conditions screen. You should now Accept. You will be asked to calibrate your joystick. Centre your stick and press fire, then move your stick in all directions then press fire again. Your joystick should now be calibrated.

When moving your joystick, ensure that it is pushed firmly as far as it will go in all directions, else you may find your joystick control erratic during flight. Fortunately you can choose to Recalibrate if you find it unsatisfactory the first time.

The calibration program also has some built in routines for detecting potential problems with your joystick:

If your joystick isn't connected, the program will pause for a few seconds and then report a CALIBRATION ERROR. It will then default to keyboard control.

The following error: "Warning: Poor Calibration. Move trim to the left and back". This can only be cured if your joystick has adjustable trims. Move the trims in the suggested direction. You may have to move them to their extreme positions first (e.g. full left) then begin adjusting back from there.

JOY-THROTTLE AND FLIGHTSTICK PRO CALIBRATION

Two additional screens will appear if you have chosen Joy-Throttle or Flightstick Pro control.

If you haven't selected analogue rudder pedals you will be prompted to select the "Min Throttle" then press fire. You will then be asked to define the "Max Throttle" and press fire again. You should move the throttle control in the opposite way to your "Min Throttle" setting defined earlier.

If you have selected rudder pedals then you will be prompted to "Centre Pedals" as well as "Min Throttle" then press fire. The next screen will then also ask you to move the pedals through full movement as well as define "Max Throttle" and press fire. As well as moving the throttle you should also press down each of the rudder pedals in turn before pressing fire.

As with analogue joysticks, the calibration routines may detect problems with your rudder pedals if they aren't connected properly.

THRUSTMASTER CALIBRATION

Thrustmaster now produce a range of joysticks. To enable the Coolie hat on the original Flight Control Stick (FCS or PFCS) or compatible, choose this option.

If you also have a Weapons Control System (WCS MkII) please use the Thrustmaster loader program first (supplied on ROWAN.ADV) then select Joystick with throttle.

For the F16, please load ROWAN.B50 and select joystick. See later section for details.

There are two additional screens for this range:

If you haven't selected analogue rudder pedals the next screen will prompt you to centre the Coolie and press fire. The centre position is that which it returns to when released. The next screen will then ask you to move the Coolie in all directions then press fire.

If you have selected rudder pedals then the next screen will prompt you to "Centre Coolie", then "Centre Pedals" and press fire. The next screen will then also ask you to move the Coolie and the pedals through full movement then press fire.

As with analogue joysticks, the calibration routines may detect problems with your Coolie and rudder pedals if they aren't connected properly.

SEPARATE RUDDER PEDAL CALIBRATION

If you chose the Flightstick Pro or Thrustmaster options, you have already configured the rudder. However, if you chose a normal analogue joystick and separate rudder controls, then the next screen will ask you to centre the pedals and press fire.

The next screen will ask you to move the pedals through full movement, then press fire. Press down each rudder pedal in turn before you press fire.

As with analogue joysticks, the calibration routines may detect problems with your rudder pedals if they aren't connected properly.

FLYING WITH JOYSTICK CONTROL

A standard analogue joystick provides elevator (pitch) and aileron (roll) controls, with two independent fire buttons. Button A fires the guns, and Button B switches to the other available weapon (e.g. Rockets or Bombs).

Some extended joysticks have two additional buttons. Button C will switch to Inside Cockpit View, whilst Button D will step through the available target when viewing 'Nearest Friendly', 'Nearest Unfriendly' and 'Nearest Ground Target'.

Some joysticks have a throttle control which can be used for controlling the RPM

of the aircraft. If a Coolie hat is available, its position offers different views and functions.

Front	Nearest unfriendly Aircraft
Back	Ground Target
Left	Inside Lock
Right	Outside Lock

As you can see, the more specialised joysticks offer far more than simple elevator, aileron and weapon controls. Their extra facilities mean you won't need to use the keyboard as often, keeping your hands free for controlling the joystick.

Devices which also plug into the keyboard socket, such as the WCSII F16-FLCS take this a stage further. See the later section for extra information on these two devices.

FLYING WITH TWO JOYSTICKS

Attach your second joystick into your second games port or into a joystick Y cable (which allows two joysticks on one game port). Some game ports do not work with a Y cable, so check first. Any genuine Soundblaster game port will work with such a cable. Just remember that you can only have one game port card enabled at once, so if you use the port on your sound card you will need to disable any port available on any multi I/O card first (via the jumpers - see your I/O card manual for details).

You can use a second joystick to control rudder, throttle and additional fire keys. Use its trim control of the Y pitch axis as the Throttle, and the left and right joystick movements to simulate the rudder.

CUSTOM JOYSTICK SENSITIVITY

Advanced users may wish to know that the sensitivity and dead area parameters along with the mapping of the joystick buttons to features of the game are held in the DRIVERS directory on your Hard Disk.

If you have chosen the Custom option for Joystick Sensitivity the game will use the file CUSTOM.JOY found on your Hard Disk. Changing this file will affect the sensitivity of the joystick next time the game is loaded.

The file format for CUSTOM.JOY is as follows:

The file begins with the four character string STIK. This is followed by the translate table for the elevators which is 64 bytes long and is indexed with absolute joystick Y position scaled to the range 0 - 63. It should return a value in the same range. This table is followed by six overflow entries for aileron, making 70 entries in total.

The elevators table is followed by the translate table for the ailerons. It is 64 bytes long and is indexed with absolute joystick X position scaled to the range 0 - 63. This is followed by six overflow entries for the aileron, making 70 entries in total.

The aileron overflow entries are followed by 0 word which has been reserved. This is followed by the keyboard mappings for the various switches on the joystick. There are up to four buttons and four Coolie hat positions.

Button A is reserved for fire. The other seven are encoded as two consecutive bytes defining the scancode and simultaneous shift keys:

1	Normal - key on its own
2	Shift key pressed simultaneously
4	ALT key pressed simultaneously
8	CTRL key pressed simultaneously

Only the initial key press is detected for the switch translations, so they cannot be used to emulate keys that are normally held down (for example, the rotating view keys).

The encodings for the Coolie hat are as follows:

Hat position	Thrustmaster axis Y2	Flightstick Pro buttons
Centred	100%	
Left	75%	AB-
Back	50%	ABC-
Right	25%	AB-D
Forward	0%	ABCD

For those who are building their own joysticks, you might like to note that our code allows +/- 10% tolerance in the Thrustmaster position reading, and that the Flightstick Pro blocks multiple button presses except for the patterns above for the Coolie hat.

You will find JTEST.COM in the Air Power directory. This program provides joystick information in a graphical form. It is intended to aid those people who are having problems getting a good calibration using the in-built calibrate option in the game.

The graphical columns represent the following information:

X axis

Y axis

Rudder

Throttle

Button A

Button B

Button C

Button D

Use the +/- keys to change the range of columns so that the maximum values don't go off the bottom of the screen.

The flicker or wobble of the columns represents noise. If the joystick wobbles a lot even when not being touched, use a low sensitivity setting in the game. If the entire column is 'flickery' then you may have multiple game ports enabled. You should disable one of them (by changing jumper settings).

A gap at the top of a column indicates an old joystick card in a fast machine. This may explain why you might get calibration errors.

You can use this program to trim your joystick. By using the +/- keys, you can limit the graphical output to just one column. Now note the position of the maximum, minimum and centre for each different trim position until you find a point where the max and min are equidistant from the centre. Air Power should now accept the joystick calibration.

THRUSTMASTER WCSII AND F16-FLCS KEYBOARD MAPPINGS

The configuration files for Air Power can be loaded into your joystick's onboard memory by typing one of the following commands from the Air Power directory:

C:\TM\MK2LOAD ROWAN.ADV

C:\TM\B50LOAD ROWAN.B50

C:\TM is the default directory for the Thrustmaster files as supplied with the Thrustmaster joystick range. The ROWAN files are located in the main directory where you installed Air Power.