

(Includes Pull-Out **Key Guide)** 

# TECHNICAL SUPPLEMENT

## CONTENTS

Your Flying Fortress package should contain a manual, a poster, this technical/flight supplement, five 5.25" high density disks or four 3.5" high density disks, and a registration card.

# REQUIRED EQUIPMENT

Computer: The simulation requires an IBM PC, AT, PS/2, or a computer 100% compatible with one of those models. The computer must have a high-density floppy-disk drive and a hard disk. The simulation will run on a 80286 microprocessor but an 80386 or better is recommended, with at least 640K of RAM.

**Controls:** The simulation can be run entirely from the keyboard, or from a joystick. Most sections also support mouse control.

**Display:** The simulation requires a color monitor with a VGA/MCGA graphics system. If you are using a compatible graphics card/monitor, it must be 100% hardware compatible to one of the above.

Disk Drives: Flying Fortress must be installed onto a hard disk.

**DOS:** You must have IBM PC-DOS or Microsoft MS-DOS version 3.0 or higher but DOS version 5.0 is recommended.



# COPY PROTECTION

Flying Fortress has no disk copy protection. This means that you can install the simulation files from the original disks to a hard disk. However, the program asks you a simulation related question. Use the manual to answer the question. MicroProse regrets that continuing casual and organized software piracy requires that we retain this minimal form of copy protection.

## INSTALLATION

A program called "INSTALL" is included on the *Flying Fortress* "Disk A". Insert "Disk A" into your floppy drive (Drive A or B) and designate that drive (by typing "A: [Return]" or "B: [Return]").

When the new prompt appears, type: "INSTALL [Return]"

Please follow the on-screen text which appears. Configure the installation program for your computer.

The simulation supports the following sound cards;

**IBM Sound:** This option supports the internal speaker standard on most IBM and compatible computers.

**AdLib/Soundblaster Sound:** Only use this option if you have an AdLib/Soundblaster or 100% compatible sound board installed in your computer.

**Roland MT-32 Sound:** Only use this option if you have a Roland MT-32 sound board installed in your computer.

# SIMULATION ENHANCEMENTS & LAST MINUTE INFORMATION

#### The Pilot's Control Column Icon

The Pilot's Control Column Icon is the lower of the two icons on the Pilot's Compartment Screen and not the top icon, as stated in the manual (Page 28). The top Control Column Icon will light up when you select the Co-Pilot. You will begin every mission in the Pilot's seat (left-hand looking out of cockpit window).



#### The Mission Briefing Map

The Yellow Line shows the Waypoints to the initial point.

The Red Line shows the initial point to the Primary Target, and the Orange Line to the Secondary Targets.

The White Line shows the Waypoints to home base.

#### **Viewing Crew Positions Keys F1-F10**

There is no need to assign the ten crew positions when you first enter the B-17 as stated in the *Flying Fortress* Manual. All crew are in their correct position and can be viewed immediately by pressing Function Keys F1 to F10. If you choose to move any crew member out of position then the relevant key will show you the appropriate *Compartment Screen*.

#### Skip Time Alt/T

By pressing Alt / T you will jump to the next Waypoint, or to a point where something is happening. (eg. an attack by enemy fighters.)

#### Navigator's Views

If you access the Navigator's external view Key  $\square$  (*Flying Fortress* Manual page 80) you may return to Map View by pressing Key  $\square$ .

#### Read Me File

Before loading *Flying Fortress* you should read the "Read Me" file for last minute information and enhancements to the gameplay. The documentation for Flying Fortress was completed in advance of the software, due to the size and complexity of the manual, but the "Read Me" file will detail all changes made after its printing.

# LOADING INSTRUCTIONS

Boot your machine, if necessary and wait until the "C>" prompt appears.

Type "CD B17 [Return]" and then type "B17 [Return]".

The simulation will begin to load.

Please note, if you have installed the program to another directory you must type "CD [Name of your directory]" first.

### OPERATING DIFFICULTIES AND LOADING PROBLEMS

In the vast majority of cases a loading problem is not because of faulty software, but either incorrect loading procedure or hardware fault.

Please ensure that the loading instructions have been correctly executed. Alternatively, a virus may have transferred into your hardware from another piece of software. Pirated copies of games are an incredibly common source of viruses. It always pays to own original software.

MicroProse Customer Service is ready to help with software difficulties. If possible, please be in front of your computer and have a paper and pencil handy when calling.

#### CUSTOMER SERVICE & TECHNICAL SUPPORT (410) 771-1151

Monday-Friday 9am to 5pm Eastern Time

# FLIGHT SUPPLEMENT

# THE TRAINING BASE

By selecting "Crew Training" from the Main Bomber Screen you will access a menu allowing you to choose a variety of Training Options, including those which allow you to practise take-off and landing. You should study the text which appears carefully once you have made your selection. It gives details of the Training situation which follows.

## THE FLIGHT SIMULATOR

To access all flight controls you must choose the Pilot F3 or Co-Pilot F4. If you have just begun a mission you will automatically be in the Pilot's seat looking out of the cockpit window.



By pressing **Key** [] (open square brackets) you can move the view left and by pressing **Key** [] (close square brackets) you can move the view right. You may also access more selective views from within the cockpit by pressing the Pad keys [PgUp] [PgDn] [Ins] and [Delete].

To view the B-17 Pilot's Instrument Panel press **Key** []

The B-17 has numerous dials and switches which you should become familiar with. Study the Pilot's Instrument Panel Diagram.

Press **Key** [] (open square brackets) to move your view left and **Key** [] (close square brackets) to move your view right, while viewing the instrument panel.

You can easily raise your view away from the Instrument Panel by selecting Key W.

Press **Key T** to return to Instrument Panel View.

#### THE PILOT'S INSTRUMENT PANEL

#### The Radio Compass

This dial will show you your heading. A heading of  $0^{\circ}$  is North,  $90^{\circ}$  is East,  $180^{\circ}$  is South and  $270^{\circ}$  is West.

#### The Directional Gyro

This dial will also show you your heading. A heading of  $0^{\circ}$  is North,  $90^{\circ}$  is East,  $180^{\circ}$  is South and  $270^{\circ}$  is West.

#### The Flight Indicator

A gyro stabilized artificial horizon indicating degree of turn from 0° to 90°.

#### The Tachometers

Two dials with two indicators on each dial to show the rpm of each engine. Do not run the engines at the maximum of 2500 rpm for long periods or they will overheat. Throttle back to 2300 rpm to cruise.

#### The Manifold Pressure Gauges

Two dials with two indicators on each dial to show the manifold pressure on air intakes to engines.

#### **The Fuel Pressure Gauges**

If fuel pressure falls due to damage, power will fail to the engine. Reducing revs may help.

#### The Oil Pressure Gauges

If oil pressure drops, the engine will overheat and may seize up. Throttle back immediately!

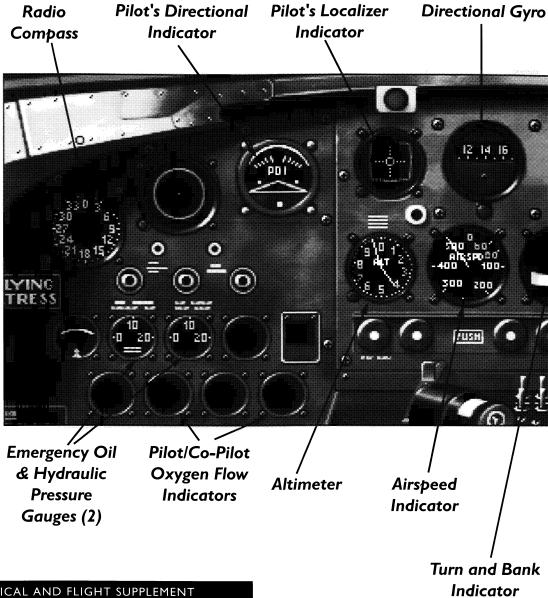
#### The Fuel Quantity Gauge

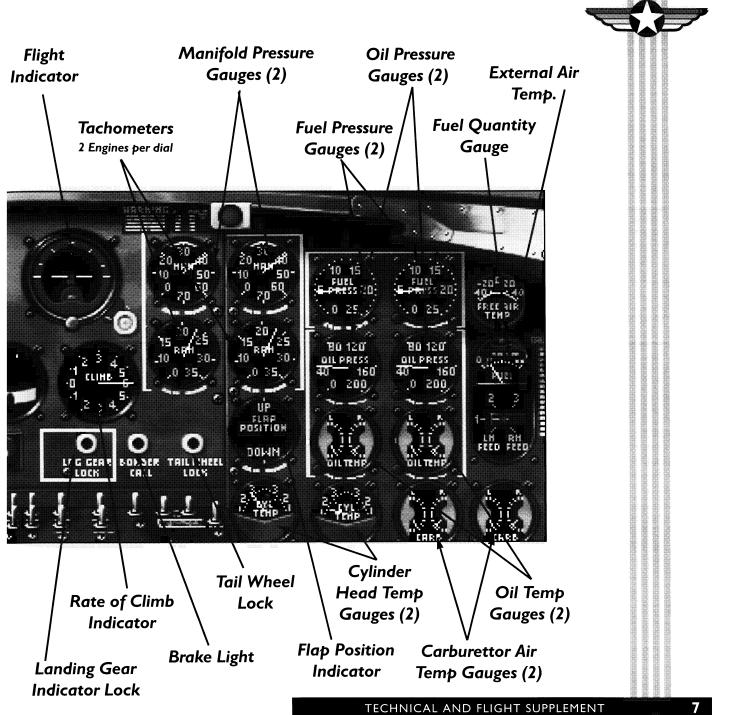
Your Flying Fortress carries enough fuel for all missions, unless the fuel tanks begin to leak as a result of damage. Reducing power to the engines will conserve fuel.



## THE PILOT'S INSTRUMENT PANEL

Study the diagram of the Pilot's Instrument Panel. It's important that you are familiar with the location of all dials.





#### The Oxygen Flow Indicators

If the values fall on the flow indicators, you must drop to below 10,000 feet, where there is sufficient oxygen for the crew to survive without oxygen masks.

#### The Altimeter

This dial shows height above sea level. The long dial shows hundreds of feet and the shorter dial thousands of feet. The inset window shows tens of thousands of feet in figures. Always be aware of your flying height!

#### The Airspeed Indicator

This dial shows the speed of the aircraft through the air in Miles Per Hour from 0 to 500.

#### The Turn and Bank Indicator

The banking rate of the plane is indicated by the central dot moving away to the right or left.

#### **The Landing Gear Indicator Lock**

A visual indicator that the main Landing Gear has been raised or lowered. In event of damage you may have to operate the gear manually.

#### The Rate of Climb Indicator

A visual indication of climb/dive angle shown as hundreds of feet per minute. Pointer on 0 means level flight.

#### The Brake Light

Illuminated when the wheel brake is engaged.

#### The Tail Wheel Lock

A visual indicator that the Tail Landing Gear has been raised or lowered.

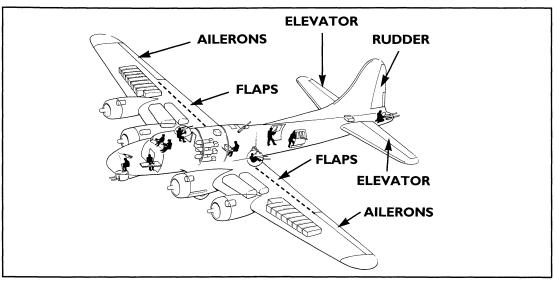
#### **The Flap Position Indicator**

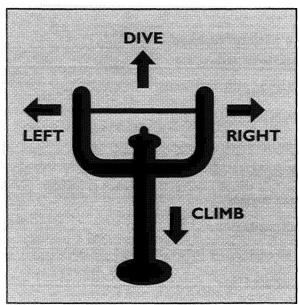
Flaps are the trailing edge of the wings that when lowered, enable the aircraft to get extra lift at take off and slow down for landing.

#### The Cylinder Head and Oil Temperature Gauges

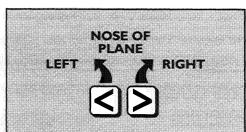
They will run a little hot if the engine is run at maximum RPMs or losing oil for any period of time. If they do, throttle back.

# FLIGHT CHARACTERISTICS

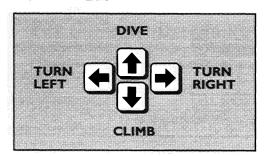








**RUDDER KEYS** 



**CURSOR KEYS CONTROL COLUMN** 

TECHNICAL AND FLIGHT SUPPLEMENT

THE PILOT'S CONTROL COLUMN

A Joystick *Controller* is recommended for flying the B-17 but you may also fly it using a Keyboard *Controller*.

Ailerons are lateral control flaps at the rear of the airplane main wing tips. When raised or lowered, by moving the Control Column left/right, they will make the plane turn to the left or right.

*Elevators* are the horizontal portions of the tail. When pushed up/down by pushing the Control Column up/down, they will make the plane dive or climb.

#### Rudder left/right <>

*Rudder* controls left/right will swing the nose of the plane left/right by moving the trailing edge vertical segment of the tail left/right.

#### THE FOUR ENGINES

The *Flying Fortress* is a large four-engined bomber and this simulation provides separate controls for each of the four engines. Engine number 1 is the left outboard engine from the Pilot's View followed by 2,3,4 in sequence.

All numeric keys are on the top row of the main computer keyboard.

1	1234	Increase power on individual engines 1-4
		increase power on murriqual engines 1-4

THE NAVIGATOR Shift / 1234 Maximum power on engines 1-4 Compartment / Crew Position View 5678 Decrease power on  $\Box$ individual engines 1-4 (E) External View Shift /5678 Minimum power on I Map View engines 1-4 Mission Briefing Details Increase power on all engines  $(\pm)$ Shift / (+) Maximum power on all engines estimated position. Decrease power on all engines Shift / (-) Minimum power on all engines THE RADIO OPERATOR Ctrl /1234 Start/Stop (feather) AND INTERCOM SYSTEMS engines 1-4 Alt /1234 Fire extinguisher on C Compartment / Crew Position View engines 1-4 Landing Gear Up/Down (starts motors) (G) Icons/Messages. F Flaps Up/Down Toggle Brakes On/Off B THE CREW Bomb Bay Doors Open/Closed (starts motors) Viewing the Ten Crew Positions. THE BOMBARDIER [F1] Bombardier Compartment/Crew Position View F2 **Navigator**  $\mathbb{I}$ The Bombsight View F3 Pilot F4 Co-Pilot  $\mathbb{W}$ Window View F5 Engineer/Top Turret Gunner E External View [F6] Radio Operator M Manual/computer control toggle

## BOMB BAY

0

(only accessible if crew man taken to Views compartment)

Bombsight On/Off

Bomb Bay Doors (open/closed)

Controller → → → /Joystick Adjust bombsight tracking

motor speeds left/right and up/down. Plus Shift -Fine Control

Release Bombs

A crew man's view of the bombs [C]

(E) External view

Spacebar / Return or Selector

(W) Return to bomb bay view

Mouse, (+) (+) (+) Controller -point and click to set

Mouse,  $\uparrow$   $\downarrow$   $\leftarrow$   $\rightarrow$  Controller -point and click on various

[F7] **Ball Turret Gunner** 

F8 Left Waist Gunner

F9 Right Waist Gunner

F10 Tail Gunner

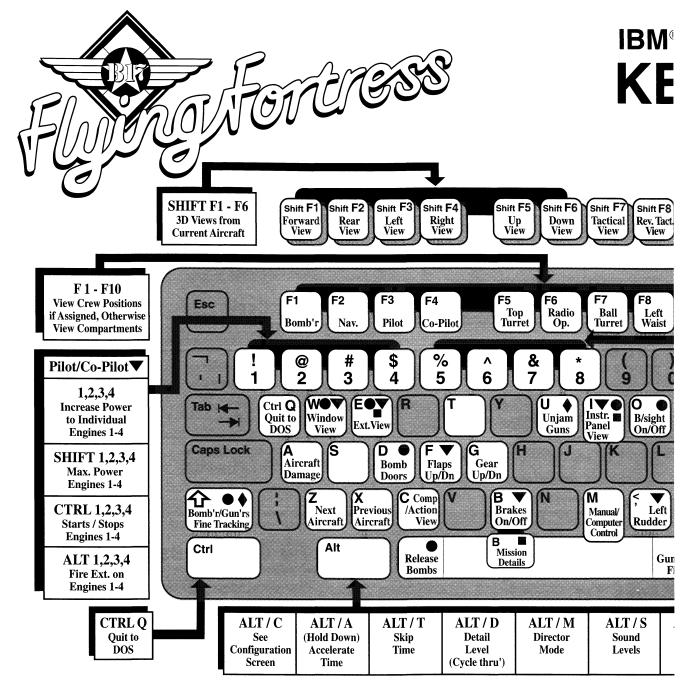
#### THE GUNNERS: DEFENDING THE B-17

*Controller* ♠ ♦ ♦ /Joystick Move turret/gun

Shift Fine tracking on target

Joystick Button / Spacebar / Return . Fire

 $\left[ \cup \right]$ Unjam gun (manual control)



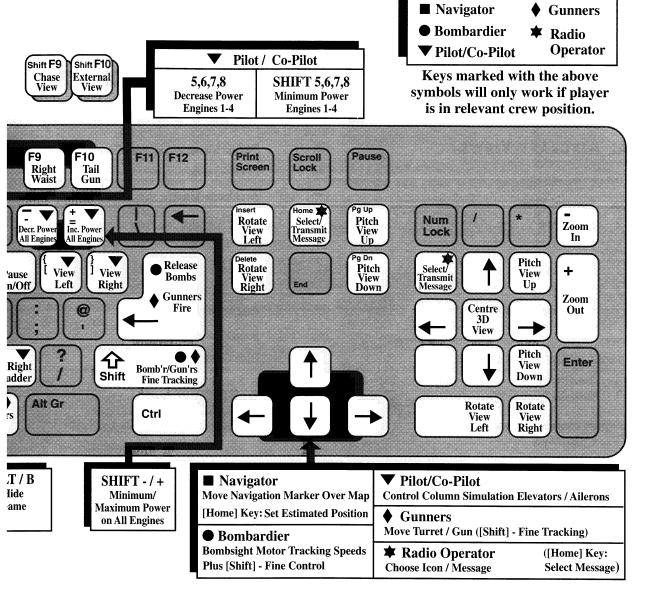
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# Y GUIDE

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**CREW POSITION KEY:** 

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## THE CONTROLLER

The simulation can be controlled using a Joystick, or the Keyboard and, to a limited extent, a Mouse.

#### THE SELECTOR

The Joystick Fire Button, the Mouse Button or Cursor Keys for movement and Home End for left/right buttons.

#### AIRCRAFT SELECTION

X Next Aircraft

[Z] Previous Aircraft

#### GENERAL AIRCRAFT VIEWS

3D views from current aircraft:

Shift / [F1] Forward View

Shift / F2 Rear View

Shift / F3 Left View

Shift] / [F4] Right View

Shift] / F5 Up View

Shift / F6 Down View

External views that depend on context. (From the aircraft, its targets, bombs, airbase control tower etc.):

Shift / F7 Tactical View

Shift] / [F8] Reverse Tactical View

External view from notional chase plane:

Shift / F8 Chase View

External views from remote camera:

Shift / [F10] External View

Moving the remote camera:

PgUp Pitch Up PgDn Pitch Down

Ins Rotate Left

Del Rotate Right

Pad Key [5] Centers / Resets 3D Views

Zoom In

Zoom Out

\_\_\_\_ Zoom Oui

#### GENERAL CONTROLS

Aircraft Status/Damage View

C Compartment View/Action View Toggle

Instrument Panel View (Bombardier, Navigator and Pilot/Co-Pilot only)

Window View (3D view through aircraft

window)

External View (3D view from remote

camera)

M Toggle Manual/Computer Control

[Alt] /[C] Configuration Screen

Alt / A Accelerate Time

Alt / T Skip Time

Alt / D Adjust Detail Level (cycle through)

Alt / M Film Director Mode Toggle

[Alt] / [P] Pause Game/Resume Game

Ctrl / Q Quit to DOS

Alt / S Sound Levels

[Alt] / [B] Hide Game

#### PILOT/CO-PILOT

Joystick, ↑↓↓ ← Control Column (elevator, ailerons)

Rudder left/right

[I] View to the left (Cockpit View/Pilot's

Instrument Panel)

View to the right (Cockpit View/Pilot's

Instrument Panel)

1234 Increase power on

individual engines 1-4



### OTHER PILOT CONTROLS

- [G] Landing Gear Up/Down (starts motors)
- Flaps Up/Down Toggle
- B Brakes On/Off
- D Bomb Bay Doors Open/Closed (starts motors)

Please note that any control that starts a motor will take time to function.

# THE TAKE OFF

You will begin every mission in the pilot's seat under player control. Your Flying Fortress will be at its starting point on the airfield. Ahead of you, the two other B-17s in your 'V' will be preparing to take-off.

You must take-off, join the other two planes, and then assemble in a flight of 6 or 9 Fortresses (depending on the formation to be flown).

On your first mission, you may find it easier to watch while the computer takes control. To activate computer control, press the "M" key. Repress the "M" key to regain control. If you set the plane under computer control, you can jump around any of the views or screens to watch the take-off.

The following pages describe how to take-off manually.

#### **Starting Engines**

Start all four engines in the sequence Ctrl / (1)[2][3][4]

Increase the Engine Throttle Controls 1234

Release the Brake B

The B-17 will now begin to move.

Check that you can easily flip from Pilot's Instrument Panel to Window View to see flight information.

Taxiing and Steering

Steer the B-17 by using your *Controller*. Gentle left/right will produce a slow turn in the chosen direction.

Stay on the correct path. Do not stray onto the grass.

Steer the bomber carefully to the edge of the take off runway. Try to line up the B-17 along the white dotted line.

**Flaps** Check that Flaps are Down F.

#### **Taking Off**

Apply maximum power to all four engines Shift / +. Do not try to pull the plane into the air. Normally, when you reach an Airspeed of 110-115 mph a gentle 'pulling back' on the *Controller* will allow the plane to lift itself off the ground. The B-17 controls may feel sluggish compared to other flight simulators, but remember that this is a big, heavy airplane.

After the airplane has left the ground, and you are sure that you have sufficient flying speed, raise the Landing Gear  $\mathbb{G}$ . Check that this has happened with any appropriate Outside View, then change flaps Up  $\mathbb{F}$ .

After reaching an airspeed of 130-150 mph, adopt a normal climb attitude with the Rate of Climb Indicator pointer at 200 feet per minute and watch the Altimeter rise gently.

## CLIMBING AND CRUISING

Make your climb at 130-150 mph. Steady smooth flying is important. This will cut fuel consumption, increase rate of climb and reduce engine wear. Always check your instruments. They are there to tell you how your plane is performing.

You will find the first two planes with which you must join up circling the airfield at about 1000 feet.

Form a group of 3 in a 'v' formation. You must then follow the group to join up with the other groups at about 2000 feet before flying off towards the target. Once cruising, throttle back to keep pace.

#### If you experience difficulty in finding the other planes, switch to computer control.

Once you have joined the other planes of your squadron in formation, the flight will strike out towards the first Waypoint. You are not the leader of the formation so if you choose to drop out of formation, for whatever reason, the others will not follow you.

## LANDINGS

When you are near the English base, you will receive a signal over the intercom system giving you a heading to land on. The other planes in the formation, and yours if under computer control, will begin to move into their final traffic pattern (a flight path in which they circle the airfield in a rectangular pattern at approximately 1000 feet).

If you do not wish to land the plane manually, switch to computer control by pressing M and sit back and watch.

Your B-17 will be the first to land. The other planes will continue to circle until you have done so.

You should leave the rectangular formation to make your final approach. Lower your Flaps and drop your Landing Gear © . Keep engine rpm's to 2000 at about 130 mph.

#### **Final Approach**

The approach is basically a controlled glide, with flaps down, and in which power is used to maintain an accurate landing position.

Reduce power gradually — until the desired airspeed (about 100-120 mph) and rate of descent have been established. Touch down gently trying to land all wheels on the runway at the same time. Drop to minimum throttle.

#### **Landing Roll**

When you have landed make sure you use the entire runway for the landing roll. Do not apply the brakes too early. Apply the brakes  $\[ \]$  when you see the plane slowing down from its roll. The B-17 should then slow down and stop.

# ICON SUMMARY



Pilot's/Co-Pilot's Control Column Icon



Navigation Icon



Fight Fire Icon



Unjam Guns Icon



Radio Operator Icon



Move Crewman Left Icon



Bombardier Icon



Move Crewman Right Icon



Gun position Icon



Manually Lower Gear Icon



Turret Repair Icon



Manually Raise Gear Icon



First Aid Icon



Manually Open Bomb Bay Icon



All Crew Bail Out Icon



Manually Close Bomb Bay Icon



Crew File Icon



Manually release bombs Icon

Bombardier	MOUSE	JOYSTICK	KEYBOARD
Release Bombs	Left Hand Button	Fire Button	Space Bar/ Return/Enter
Bombsight Tracking	SEE	Left/Right/Up/Down	Cursor Keys
Pilot/Co-Pilot			
Control Column Simulation	•	Left/Right/Up/Down	Cursor Keys
Gunners			
Move Turret/Gun	an i Shigh i na Shigh ekigas ya Sala ●	Left/Right/Up/Down	Cursor Keys
Fire Guns	•	Fire Button	Space Bar/ Return/Enter
Navigator			
Move Navigation Marker	Move Mouse Pointer	Left/Right/Up/ Down	Cursor Keys
Fix Estimated Position	Left-Hand Button	Fire Button	Pad Home Key
Radio Operato	r		
Choose Icon/ Message	Move Mouse Pointer	Left/Right/Up/ Down	Cursor Keys
Select Icon/ Transmit Message	Left-Hand Button	Move Pointer	Pad Home Key

# TARGET APPENDIX

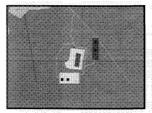
Locations specified are the locations where the shots were taken, other targets of the same type are very similar.

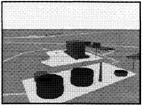
#### **VI/V2 ROCKET SITE - FRANCE**





**OIL REFINERY - ASCHAFFENBURG** 





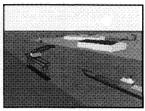
**ARMY DEPOT - AACHEN** 



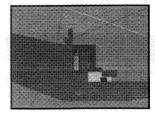


**DRY DOCKS - CUXHAVEN** 



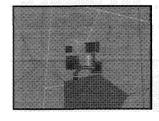


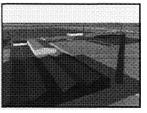
**DRY DOCKS - NANTES** 



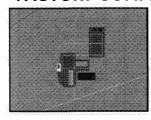


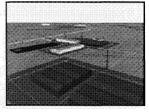
**FACTORY COMPLEX - BERLIN** 



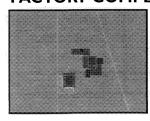


**FACTORY COMPLEX - AUGSBERG** 





**FACTORY COMPLEX - EINDHOVEN** 



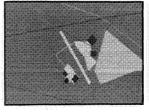


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TECHNICAL AND FLIGHT SUPPLEMENT

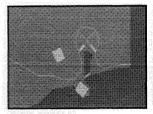
# TARGET APPENDIX

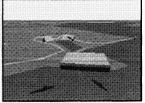
#### **FACTORY COMPLEX - BREMEN**



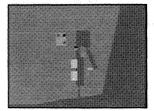


**U-BOAT BASE - LORIENT** 



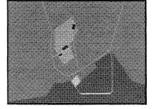


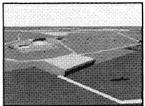
**U-BOAT BASE - ST. NAZAIRE** 



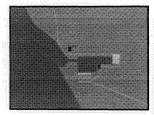


**U-BOAT BASE - BREST** 



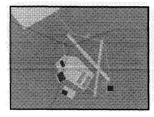


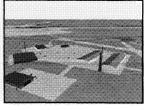
**U-BOAT - BASE - LA PALLICE** 



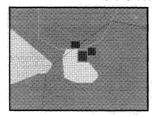


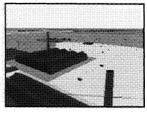
**AIRCRAFT FACTORY - BRUNSWICK** 



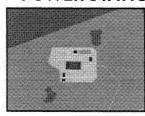


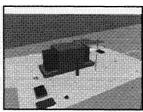
**TANK FACTORY - OSNABRUCK** 





**POWER STATION - ZEEBRUGGE** 

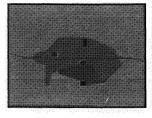




TECHNICAL AND FLIGHT SUPPLEMENT

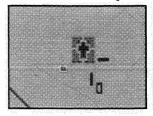
# TARGET APPENDIX

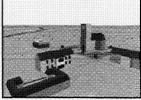
**RAILYARD - ABBEYVILLE** 



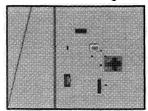


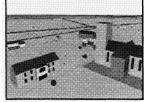
S.S. HEADQUARTERS - BERLIN



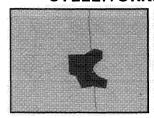


S.S. HEADQUARTERS - LEIPZIG



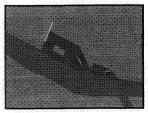


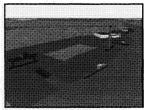
**STEELWORKS - BOCHUM** 





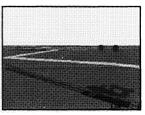
**SHIPYARD - BREMEN** 





**VI ROCKET SITE - CHERBOURG** 





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Modem users can also use various on-line services for technical support, updates and general information. As of spring 1992, this includes America Online, CompuServe, Delphi, GEnie, Internet, MCI Mail, PC-Link, Prodigy, Promenade, and Q-Link.



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AMERICA ONLINE: Industry Connection, Keyword: "MicroProse", Address: MicroProse.

COMPUSERVE: Game Publishers Forum, "Go GAMPUB", Address: 76004,2223.

**DELPHI:** GameSig, Address: MicroProse

GENIE: Scorpia RT, Keyword: "Scorpia", Address: MicroProse.

**INTERNET:** Address: 76004,2223@CompuServe.Com.

MCI MAIL: Address: MicroProse.

PC-LINK: Computer Forum, Keyword: "MicroProse", Address: MicroProse.

PRODIGY: Computer Club: Other Games, Keyword: "MicroProse", Address: XHFK15D.

**PROMENADE:** Industry Connection, Keyword: "MicroProse", Address: MicroProse.

**Q-LINK:** Computer Forum, MicroProse Section, Address: MPSLabs.

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