



F9F Panther

User Manual (FSX)

VERSION 1.00

Interactive
vstudios



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The F9F Panther

Introduction

The Grumman F9F Panther was the manufacturer's first jet fighter and one of the U.S. Navy's first successful carrier-based jet fighters. The Panther was the most widely used U.S. Navy jet fighter of the Korean War, flying 78,000 sorties and scoring the first air-to-air kill by the USN with the downing of a North Korean Yakovlev Yak-9. F9F production totalled 1,382.

The Panther has been designed to take advantage of all the graphical features FSX has to offer, including fully-custom specular shine textures, high resolution bump mapping, self-shading and 3D sound cones.

Information originates from Wikipedia and has been modified to suit.



Noteworthy features

- A gorgeously constructed 3D model, both inside and out!
- 3D 'Sound Cone' Technology.
- Fully customised lighting control system implementation, including individually controlled night-lighting effects.
- 'Tru3D' Gauges for the ultimate smooth flying experience.
- VStudios-customised materials give the most realistic appearance to the aeroplane.
- VStudios own 'configuration editor' :
 - A 'live' payload editor, with many different weapons and more!
- 7 high-resolution and detailed paint schemes and 2 historically accurate models.

Known FSX Issues:

- Lights can appear to differ in position when viewed from different viewpoints, such as the tower view. This is a documented FSX issue, and not an issue with the model. Internal lights are known to have issues under 'DX10 Preview Mode' .

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Installation & Technical Support

Installation can be started by simply double-clicking the packaged .exe file. The Panther should be installed to the root directory of FSX.

A paint kit can be obtained by following the links on the VStudios website.

The paint kit requires Adobe Paintshop to be used correctly.

Product support is available 24/7 by way of our online support system.

In order to access the support system, please access:

<http://www.vertigostudios.co.uk/helpdesk/>



Whilst VStudios will endeavour to view and consider any and all forum posts, support can only be guaranteed via the correct (above) method. VStudios has no obligation to provide support on any third-party forum or community.

Package Contents

Modules

The Panther is installed with a number of modules that allow the aeroplane to interface with Flight Simulator, and to ultimately function correctly.

Upon running FSX for the first time after installing the package, a security dialogue may be presented. Accepting the dialogues will allow the Panther to function as intended.



Figure 1 - Blueprint Module Dialogue



Figure 2 - Sound Control Module Dialogue

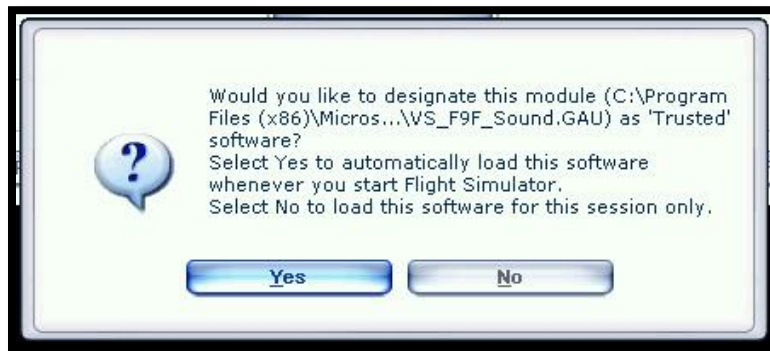


Figure 3 - Accepting the module for use

Variants Included

F9F-5 Panther

126070, '1', Blue Angels, US Navy Flight Demonstration Squadron, c.1952



125919, VMA-334, MCAS Miami, USN, c.1953



125814, VMA-223, MCAS Itami, USN, c.1953



125449, VF-94, CVA-12 USS Hornet, USN, c.1952



F9F-5P Panther

125320, VMJ-3, MCAS Miamai, US Marines, c.1955



126280, VMJ-3, MCAS Miamai, US Marines, c.1955



126273, VC-61, CV-31 USS Princeton, USN, c.1953



Familiarisation

Camera Views

The Panther has multiple pre-set camera views to choose from, some of which are helpful when navigating the large cockpit. Right click at any time whilst in-game to view the camera menu.

Virtual Cockpit



Left Cockpit Overview



Right Cockpit Overview



Tail



Right Wing



Left Wing



Nose Right



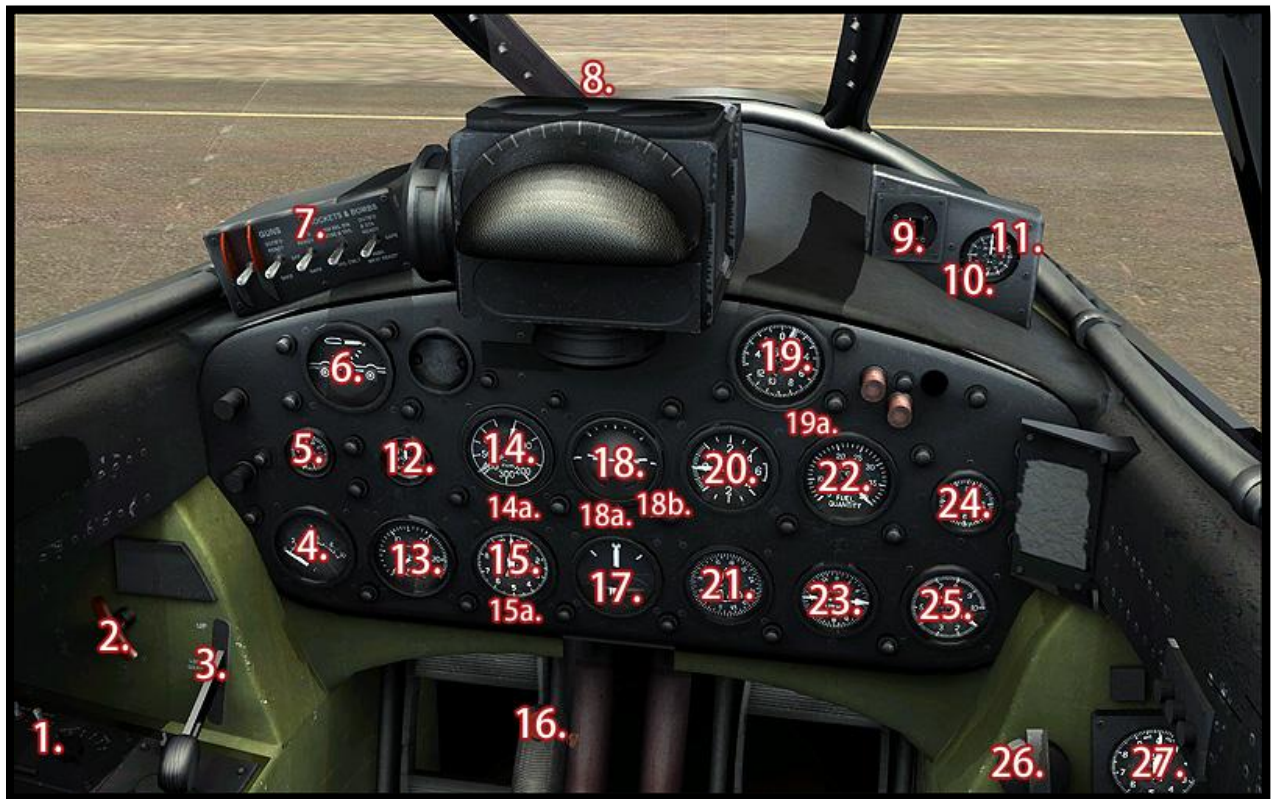
Nose Left



Head-On



Cockpit Tour – F9F-5 - Forward Panel



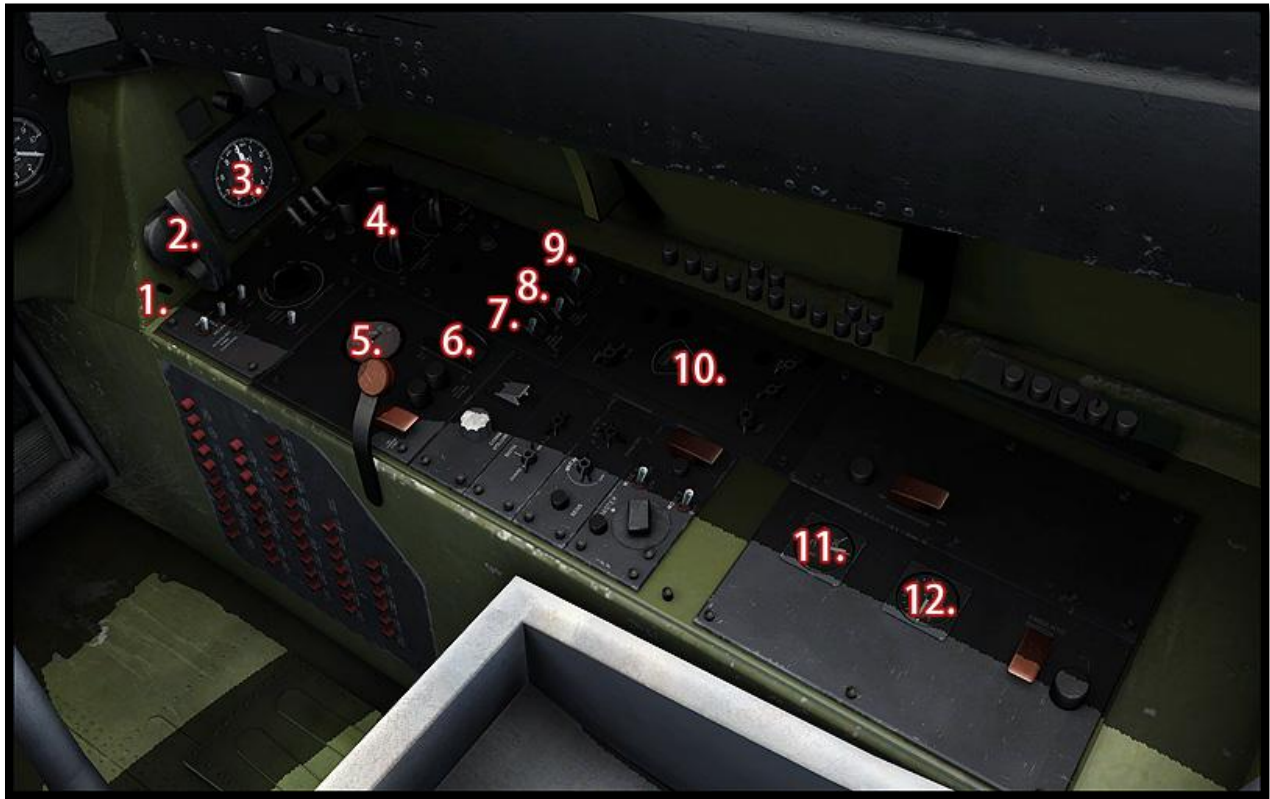
1. Weapon fire control panel.
2. Emergency gear handle.
3. Landing gear selection lever.
4. Engine gas temperature indicator.
5. Fuel pressure indicator.
6. Landing gear and flap indicator.
7. Weapon system control panel.
8. Gunsight reflector.
9. Whiskey compass.
10. Stopwatch control switch.
 - a. Left click to start/ stop.
 - b. Right click to reset.
11. Stopwatch.
12. Engine %RPM indicator.
13. Radio altitude indicator.
14. Air speed indicator.
 - a. VNE calibration knob.
15. Altimeter.
 - a. Calibration knob.
16. Weapon triggers.
17. Turn and slip indicator.
18. Artificial horizon.
 - a. Attitude calibration knob.
 - b. Horizon cage knob.
19. Accelerometer.
 - a. Reset switch.
20. Vertical speed indicator.
21. Gyro compass.
22. Fuel quantity indicator.
23. Radio compass indicator.
24. Clock.
25. Fuel flow indicator.
26. Tail hook control lever.
27. Cabin altitude indicator.

Cockpit Tour – F9F-5 - Port Side



- | | |
|---|---|
| 1. Gunsight control panel. | 9. Throttle lever. |
| 2. Emergency (parking) brake control lever. | 10. Water injection pressure indicator. |
| 3. Elevator trim control wheel. | 11. Bomb release handle. |
| 4. Elevator trim indicator. | 12. Speed brake control lever. |
| 5. Aileron trim control wheel. | 13. Weapon fire control panel. |
| 6. Rudder trim control wheel. | 14. Emergency gear lever. |
| 7. Fuel dump control panel. | 15. Landing gear control lever. |
| 8. Flap selection lever. | |

Cockpit Tour – F9F-5 – Starboard Side



- | | |
|---------------------------------|---|
| 1. Tail hook retraction switch. | 7. Engine starter master switch. |
| 2. Tail hook deployment handle. | 8. Fuel pump master switch. |
| 3. Cabin altitude indicator. | 9. Engine crank control switch. |
| 4. Lighting control panel. | 10. ADF control panel. |
| 5. Voltmeter. | 11. Emergency hydraulic pressure indicator. |
| 6. Master battery switch. | 12. Hydraulic pressure indicator. |

Cockpit Tour – F9F-5P – Forward Panel



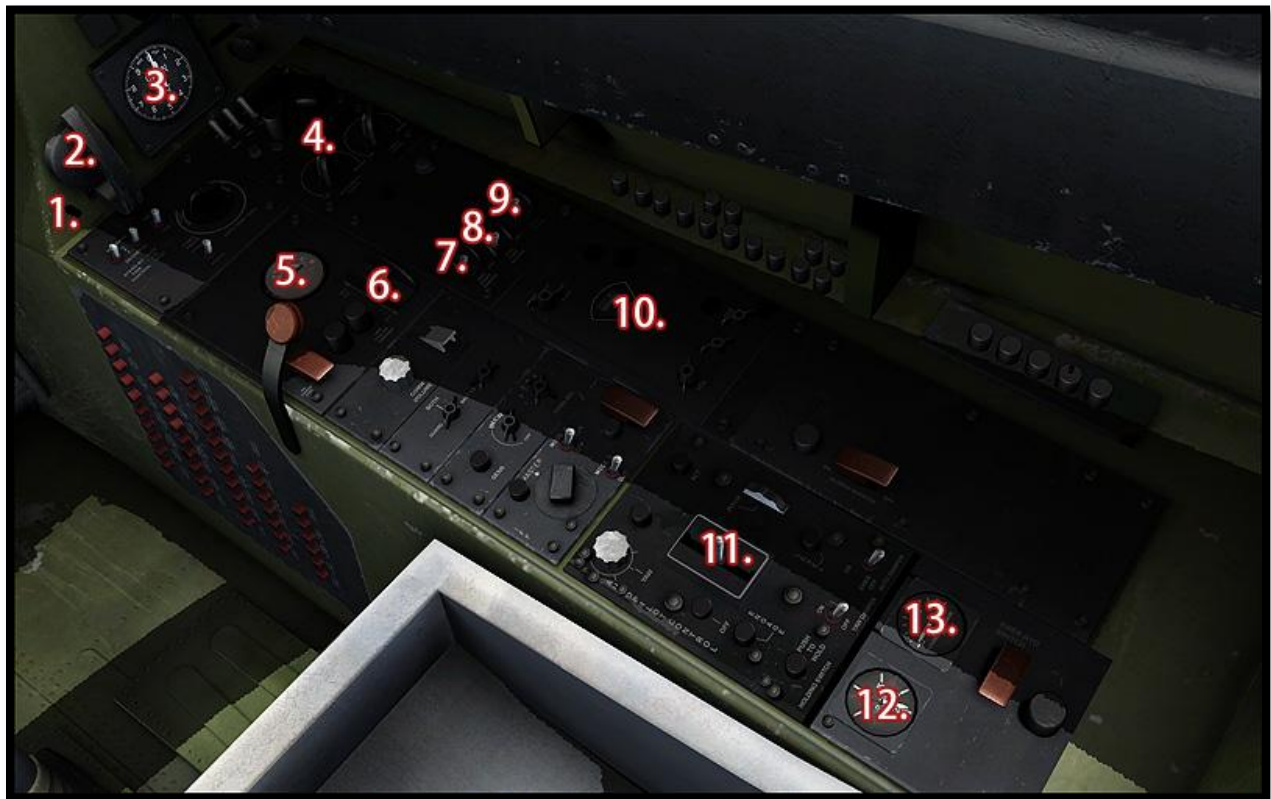
1. Emergency gear handle.
2. Landing gear selection lever.
3. Engine gas temperature indicator.
4. Fuel pressure indicator.
5. Landing gear and flap indicator.
6. Engine %RPM indicator.
7. Radio altitude indicator.
8. Air speed indicator.
 - a. VNE calibration knob.
9. Altimeter.
 - a. Calibration knob.
10. Artificial Horizon.
 - a. Attitude calibration knob.
 - b. Horizon cage knob.
11. Turn and slip indicator.
12. Vertical speed indicator.
13. Gyro compass.
14. Accelerometer.
 - a. Reset switch.
15. Fuel quantity indicator.
16. Radio compass.
17. Clock.
18. Fuel flow indicator.
19. Whiskey compass.
20. Stopwatch.
 - a. Left click to start/ stop.
 - b. Right click to reset.

Cockpit Tour – F9F-5P – Port Side



- | | |
|---|---|
| 1. Gunsight control panel. | 9. Throttle lever. |
| 2. Emergency (parking) brake control lever. | 10. Water injection pressure indicator. |
| 3. Elevator trim control wheel. | 11. Bomb release handle. |
| 4. Elevator trim indicator. | 12. Speed brake control lever. |
| 5. Aileron trim control wheel. | 13. Weapon fire control panel. |
| 6. Rudder trim control wheel. | 14. Emergency gear lever. |
| 7. Fuel dump control panel. | 15. Landing gear control lever. |
| 8. Flap selection lever. | |

Cockpit Tour – F9F-5P – Starboard Side



- | | |
|----------------------------------|---|
| 1. Tail hook retraction switch. | 8. Fuel pump master switch. |
| 2. Tail hook deployment handle. | 9. Engine crank control switch. |
| 3. Cabin altitude indicator. | 10. ADF control panel. |
| 4. Lighting control panel. | 11. Automatic pilot control unit. |
| 5. Voltmeter. | 12. Emergency hydraulic pressure indicator. |
| 6. Master battery switch. | 13. Hydraulic pressure indicator. |
| 7. Engine starter master switch. | |

Systems and Functions

Configuration Editor

The Panther comes with a dynamic configuration editor that will allow many aspects of the aircraft to be configured. Weights and fuel are changed in real-time using the editor, and firing or dropping weapons will also affect the flight dynamics and weights.



Figure 4 - The editor windows in situ.

Control panel window




Pressing ctrl + 3 will display the configuration editor control panel. From here the different areas of the configuration editor utility can be hidden or displayed. Simply click a title to hide or display the relevant pop-up window.



Figure 5 - The control panel pop-up.

Certain functions are uniform across all pop-up configuration windows, as per below.

Uniform window functions and their descriptions

	Increase window transparency.
	Decrease window transparency.
	Close window.

Configuration editor window

Pressing ctrl + 4 will display the configuration editor window. Below are illustrations and a table documenting the various functions of the pop-up.

Each option displays a filled-in box when selected, and a transparent box when not.

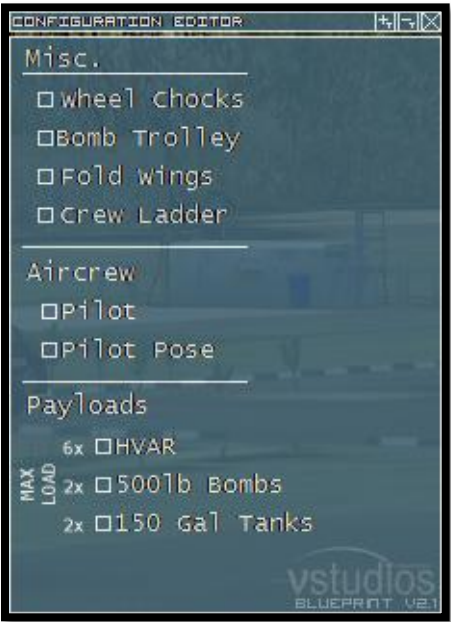


Figure 6 - No options selected.

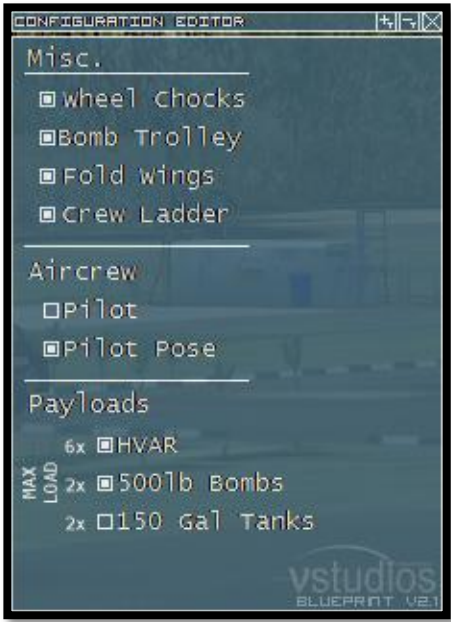


Figure 7 - All but loads selected.

Control window functions and their descriptions

	Toggle the wheel chocks.
	Toggle the bomb trolley.
	Toggle wing fold.
	Toggle the crew ladder.
	Toggle the cockpit pilot model.

<input type="checkbox"/> Pilot Pose	Toggle the posed-pilot.
<input type="checkbox"/> HVAR	Allow selection of the HVAR's.
<input type="checkbox"/> 500lb Bombs	Allow selection of the 500lb bombs.
<input type="checkbox"/> 150 Gal Tanks	Allow selection of the 150 gallon drop-tanks.

The payload editor window

Pressing ctrl + 5 will display the payload window. From here, weapons can be assigned to their respective pylons and the ammunition load can be adjusted. Please see the below table and illustrations for more information.

The payload editor window should be used in conjunction with the main configuration window. To use, first select the required load object from the configuration window. This will change the state of the payload window, and allow loading of the selected object. For further information, please see the below illustration and table.

Ammunition and the M2 machine guns

The M2 weapons platform is loaded by default into any F9F-5. F9F-5P aircraft do not carry guns and are therefore absent by default. Ammunition amounts can be controlled used the payload editor window.

Adding ammunition to the aircraft will dynamically alter the weight. Firing the weapons will decrease the weight. Weights are calculated in real-time, on a per-round basis. Each and every round will therefore affect the total performance and weight of the aircraft.

M2 weight reference table

F9F-5 Panther	
M2 machine gun	63.93 lbs. per weapon
Maximum 380 rounds per weapon	0.25 lbs. per round



Figure 5 - The ammo control area of the payload window.



Figure 6a - Ammunition control panel.

The ammunition control panel

1. Incrementally unload ammunition.
2. Fully unload ammunition.
3. Visual count of ammunition loaded.
4. Incrementally load ammunition.
5. Fully load ammunition.



Figure 7b - Payload control panel.

The payload control panel

1. Currently selected loads.
2. Ammunition control area.
3. Individual pylon selection control boxes.
4. HVAR s selection control boxes.
5. 150 gallon tank/ 500lb bomb selection control boxes.

Individual Pylons

Pylons can be selectively removed in order to streamline the aircraft further. Each pylon has a weight of between 20 and 30 lbs. To remove or replace a pylon, click its respective control point using the payload editor window. When removed, the control box will appear red. Weapons cannot be placed upon the pylon in the removed state.

Smart Payload Configuration Utility

The Panther features a 'smart' payload configuration utility in order to make it easier for third-party painters to configure the default model arrangement.

Default load states can be set by the painter in the *aircraft.cfg* file, as per the below table.

Note 1 – 'xx' in the *title text* column suggests the next logical number available in the *aircraft.cfg* file structure.

Variant	'Title=' Text	Function
F9F-5 Panther	title=VS F9F51 xx	Loads F9F-5 with weapons.
F9F-5P Panther	title=VS F9F52 xx	Loads F9F-5P with camera and drop tanks.
Clean F9F-5 (Display)	title=VS F9F53 xx	Removes all loads and respective pylons.

Optical Gun-sight

Introduction

Located atop the main instrument panel, the gun sight forms a centrepiece in the cockpit of the F9F-5. To operate the sight, click the control switch on the rear end of the port console.

Right click to progress through the functions, and left click to regress.

When turned on and at night, the gunsight will automatically be lit.



Figure 8 - The gun sight control panel.

Collimation and Night Illumination

The gun sight features full night lighting and collimation effects. Moving out of the projection arc will cause the sight to progressively fade from view.

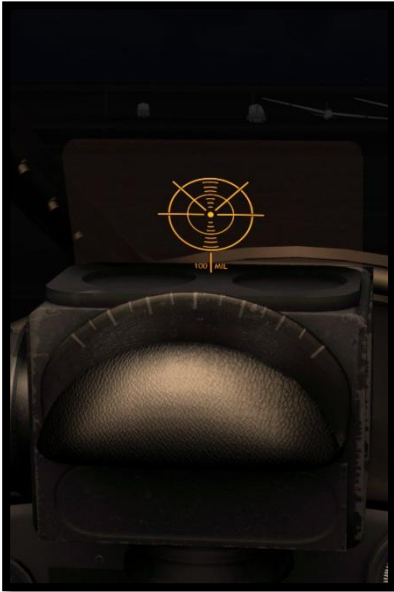


Figure 9 - Gun sight at night.



Figure 10 - Too far left!

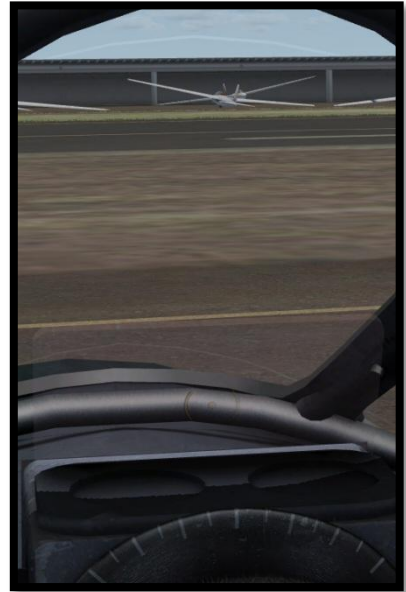


Figure 11 - Too far up!

Function 1



Figure 12 - Displaying the gunnery sight.

Function 2



Figure 13 - Displaying the bombing sight.

Function 3



Figure 14 - Displaying the rocket sight.

Weapon Control System

Introduction

The Panther features a full and complex weapon system. Each and every item assigned to the aircraft using the payload editor can be fired or dropped, along with associated sound and visual effects.

When a weapon is fired or dropped, the resulting weight change will affect the aeroplane immediately. Firing an HVAR or dropping a bomb causes the aircraft to roll if the pilot is not prepared; dropping the fuel tanks causes the aircraft to pitch up violently if not trimmed correctly.

M2 machine guns

Introduction

The guns cannot be fired if the master switch is turned off or if the ammunition has been depleted. The ammunition load can be manipulated at any time using the payload editor. Firing the weapons will deplete the ammunition in a realistic way and will of course cause a resultant weight change. Each weapon has a unique firing sound and realistic muzzle flash effect.

Arming the weapons

To arm the system, click the master armaments switch on the armaments control panel atop the dashboard coaming. The series of switches to the right of the master switch control each respective weapon circuit, in the following order:

1. Outboard guns.
2. Inboard guns.
3. Rockets (HVAR).
4. 500lb Bombs.



Figure 22 - Weapons safe.



Figure 23- Master ON.



Figure 24- Guns armed.



Figure 25- Bomb master ON.



Figure 26- Rocket master ON.

Firing the machine guns

To fire the weapons, press and hold the button or keyboard key assigned to the 'brake' function (most often the trigger of the joystick or controller).

500 Lbs. Bombs

Arming the bombs

Both the master armaments switch and the 500lb control switch must first be set to ON.

The bombing control panel is located on the forward end of the port side console.

To select the required circuit to be armed, click the respective switch. To release the payload, click the T-bar handle using the left mouse button. The first notch releases the port bomb; the second notch releases the starboard bomb.



Figure 27- Payload drop control panel.

1. Bomb release handle.
2. Port bomb selector switch.
3. Starboard bomb selector switch.
4. HVAR selection controller.



Figure 28- Neither bomb circuit is selected.



Figure 29- Both bomb circuits are selected.

HVAR's

Arming the weapons

Both the master armaments switch and the rocket control switch must first be set to ON.

Using the selector on the weapon control panel, select the required HVAR to be launched. Clicking the trigger on the flight stick will launch the rocket.

Fuel Dumping System

Introduction

When drop tanks are fitted to the F9F-5P, the fuel dump panel will allow for fuel to be jettisoned. Tanks should be drained individually, though can be set to drain at concurrently at a far lesser rate. The panel is located on the port side console.



Figure 30 - The fuel dump control panel.

Operation

Priming the system consists of lifting the red toggle switch and setting the master switch to the ON position. Clicking either the left or right drain switch will then toggle and drain the respective drop tank.



Figure 31 - The master switch is set to the ON position.



Figure 32 – The illuminated lamp shows that the port tank is draining.

Automatic Pilot Unit

Introduction

The F9F-5P features a functional automatic pilot unit, located on the starboard console to the rear of the cockpit.



Figure 33 - The automatic pilot.

Operation

1. Yaw trim control knob.
2. Altitude hold toggle button.
3. Pitch selection wheel.
4. Wing leveller button.
5. Yaw damper control switch.

6. Current heading hold toggle button.
7. Autopilot engage button.
8. Autopilot disengage button.
9. Autopilot control stick.
 - a. To control roll, left or right click the switch.
 - b. To control pitch, scroll the mouse wheel forwards or backwards.

Trim Systems

Introduction

All flight surfaces of the F9F-5 can be trimmed. The trim control wheels are located in the midsection of the port side console.

1. Rudder trim control.
2. Aileron trim control.
3. Elevator trim indicator.
4. Elevator trim control.



Figure 34 – Trim control panel.

Operation

All trim wheels can be operated using the mouse wheel or by clicking and dragging in the required direction.

Rolling the mouse wheel forward will increase or move the trim clockwise. The opposite is true when the mouse wheel is rolled backward.

Lighting Systems

Introduction

The F9F-5 features a complex array of lights, all of which may be individually controlled. All lights are located on the forward section of the starboard console.



Figure 35 - Lighting control panel.

Operation

Simply click a light switch to toggle the relevant light.

Night Lighting

Using the round controls found to the rear of the lighting control panel, both instrument and cockpit lights may be individually controlled.



Figure 36 – Both the instrument and cockpit lights turned on at night.

Tail Hook

Operation

The tail hook controls are located to the lower right of the forward panel.



Figure 37 - Tail hook lever and retraction switch.

To deploy the hook, click the large toggle handle. To retract the hook, click the small toggle switch. When the hook has been deployed, a pole will raise in front of the windscreen.



Figure 38 - Tail hook deployed.



Figure 39 – Barber pole has been raised.



Figure 40 - Tail hook retracted.

Wing Flaps

Specific notes

Operation of the wing flap system varies on the situation of the aircraft.

Landing gear retracted	Landing gear extended
1. OFF a. Flaps are retracted.	1. OFF a. Flaps are retracted.
2. Take-off a. LE flaps are extended. b. Inboard flaps are retracted. c. Outboard flaps extend fully.	2. Take-off a. LE flaps are extended. b. Inboard flaps are retracted. c. Outboard flaps extend fully.
3. Landing a. LE flaps are extended. b. Inboard flaps extend fully. c. Outboard flaps extend fully.	3. Landing a. LE flaps are extended. b. Inboard flaps extend to 25. c. Outboard flaps extend fully.



Figure 41 – Landing flaps, with gear deployed.



Figure 42 – Landing flaps, with gear retracted.

Official Documents

Introduction

Over the next few pages are drawings that contain data applicable to all models of Panther in this package. The images are taken from the real-world flight manuals. Any images are therefore the copyright of their respective owners.

Normal Operating Procedures & Checklists

Before entering the cockpit

- Check gross weight and centre of gravity location for take-off and anticipated landing condition.
- Perform exterior check.
- Make sure the aeroplane has been serviced with proper quantities of fuel, oil, hydraulic fluid and oxygen.

Check-off before starting

- Trim tabs "0" degrees.
- Dive brakes retracted.
- Master battery switch – OFF.
- Check fuel quantity.
- Check control surfaces for full and free movement.

Starting the engine

- Throttle – CLOSED.
- Engine master switch – OFF.
- Fuel master – ON.
- Throttle – one inch open.
- Master battery switch – ON.
- Set cranking switch to START.

Warm-up

- Allow engine to run at idling speed 35% for 30 seconds.
- With the engine idling, check instruments for any problems.
- Do not hold engine at take-off rpm on the ground for more than 1 min.

Taxiing instructions

- Move throttle forward smoothly 5,500 rpm.

Before Take off

- Harness – LOCKED.
- Cycle normal canopy control.
- Canopy – OPEN.
- Wings extended and locked.
- After taxiing a few feet to straighten the nose wheel, hold airplane with the brakes.
- Set flaps to take-off.
- Operate elevator tabs to "nose down" position +1 and then to neutral.
- With engine operating normally and brakes on, advance throttle to 100% and check instruments.
- Do not hold 100% throttle for more than one minute.

Take-off

- All trim tabs zero.
- Hold airplane with the brakes, move throttle full forward, check instruments and release brakes.
- Landing gear – UP.
- Canopy – CLOSED.
- Flaps up at 130-150 knots IAS.

Approach

- Armament master switch – ON.
- Guns, rockets and bombs – SAFE.
- Tip tank dump switch - DUMP.
- Dive brakes - RETRACTED.
- Arresting hook down if carrier landing.
- Trim tabs zero setting if trim is normal.
- Lower landing gear, check indicator. Indicator may not show wheels locked and down above speed limitation.
- Canopy – OPEN.

Landing

- For field landings make final approach at 115 knots approx. with wheels and flaps extended. As this airplane has almost normal propeller driven airplane deceleration after cutting the throttle, long, slow and flat approaches are unnecessary.
- Trim control settings as required.
- Carrier landings, after landing make sure the tail hook is raised and the wings are folded prior to taxing.

Wave off

- Remember that the jet will not respond as quickly as a reciprocating engine. Move the throttle forward smoothly but as rapidly as possible.
- Landing gear up, flaps up at 130 knots IAS.

After landing

- Apply the brakes evenly, remember that it may be required to use the brakes for steering below 70 knots, the flaps will assist in slowing the airplane down.
- At the end of the taxi-way, set flaps – OFF.

Stopping the engine

- Retard throttle to closed.
- Fuel pump master – OFF.
- After ten seconds, set engine starting master and battery switches to OFF.

Before leaving the airplane

- All switches set to SAFE or OFF.
- Install surface locks.
- Set parking brake – ON.

NOTE: This aircraft's real-world checklists have been modified for use with Flight Simulator. Consult the manual or operations sheets for full details of operating procedures.