

A detailed digital rendering of a P-36 Hawk fighter aircraft in flight, viewed from a low angle looking up. The aircraft is olive drab with tan camouflage on the wings and fuselage. It features a large radial engine with a dark propeller, a transparent canopy, and a red-tipped tail. Royal Air Force roundels are visible on the wings. The background is a bright blue sky with soft white clouds.

# P-36 Hawk

User Manual (FSX)

VERSION 1.00





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# The P-36 Hawk

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## Introduction

The Curtiss P-36 Hawk, also known as the Curtiss Hawk Model 75, was a U.S.-built fighter aircraft of the 1930s. A contemporary of the Hawker Hurricane and Messerschmitt Bf 109, it was one of the first of a new generation of combat aircraft—a sleek monoplane design making extensive use of metal in its construction and powered by a powerful piston engine.

The P-36 saw only limited combat with the United States Army Air Forces but was extensively used by the French Air Force and also by British Commonwealth and Chinese air units.

The P-36 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.



## Noteworthy features

- A gorgeously constructed 3D model, both inside and out!
- 3D 'Sound Cone' Technology.
- Fully customised lighting control system implementation, including individually created 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' .
- Eight high-resolution and detailed paint schemes.

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



## Installation & Technical Support

The P-36 can be installed by simply double-clicking the packaged .exe file. The P-36 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

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## Variants Included

### H75-C1

1 Escadrille, GC II/5, Armee de l'Air



No. 295, 2nd Escadrille GC1/4, "Vichy", c.1942



## P-36A Hawk

18th Pursuit Group, c.1940



94th Pursuit Sqn, 1st Pursuit Group, c.1940



## P-36C Hawk

No.1, 8193, USAAF, c.1942





## Mohawk IV

BB975, 155 Sqn, RAF, c.1942



BS791, 155 Sqn, RAF, c.1943



## Configuration Editor

Pressing Shift+4 in game will display the configuration editor. This provides a way for various realistic objects to be displayed or hidden according to the situation.

**Chocks-** wheel chocks can be selected using this option.

**Covers-** a canopy cover with tie-down blocks can be displayed using this option.

**Pilot-** the pilot can be hidden or displayed using this option. When the pilot is hidden, the elevator will drop.

Clicking the 'X' in the top-right corner of the configuration editor will hide the window.

To open the rear hatch, use the 'Exit-2' command. This is usually assigned to Shift+e+2.



# Familiarisation

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## Camera Views

The P-36 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



Rear Fuselage Fore



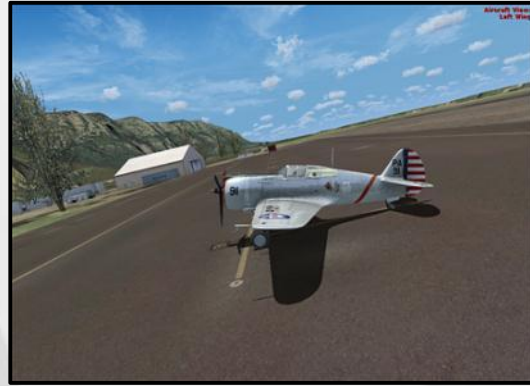
Rear Fuselage Aft



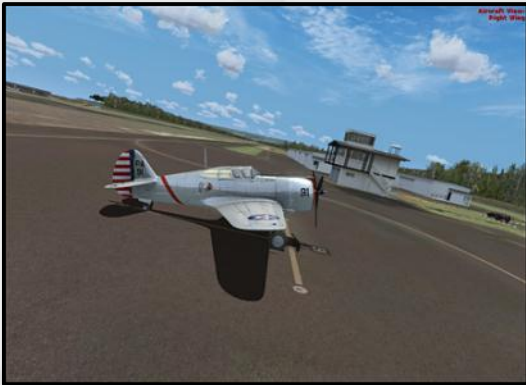
Tail



Right Wing



Left Wing





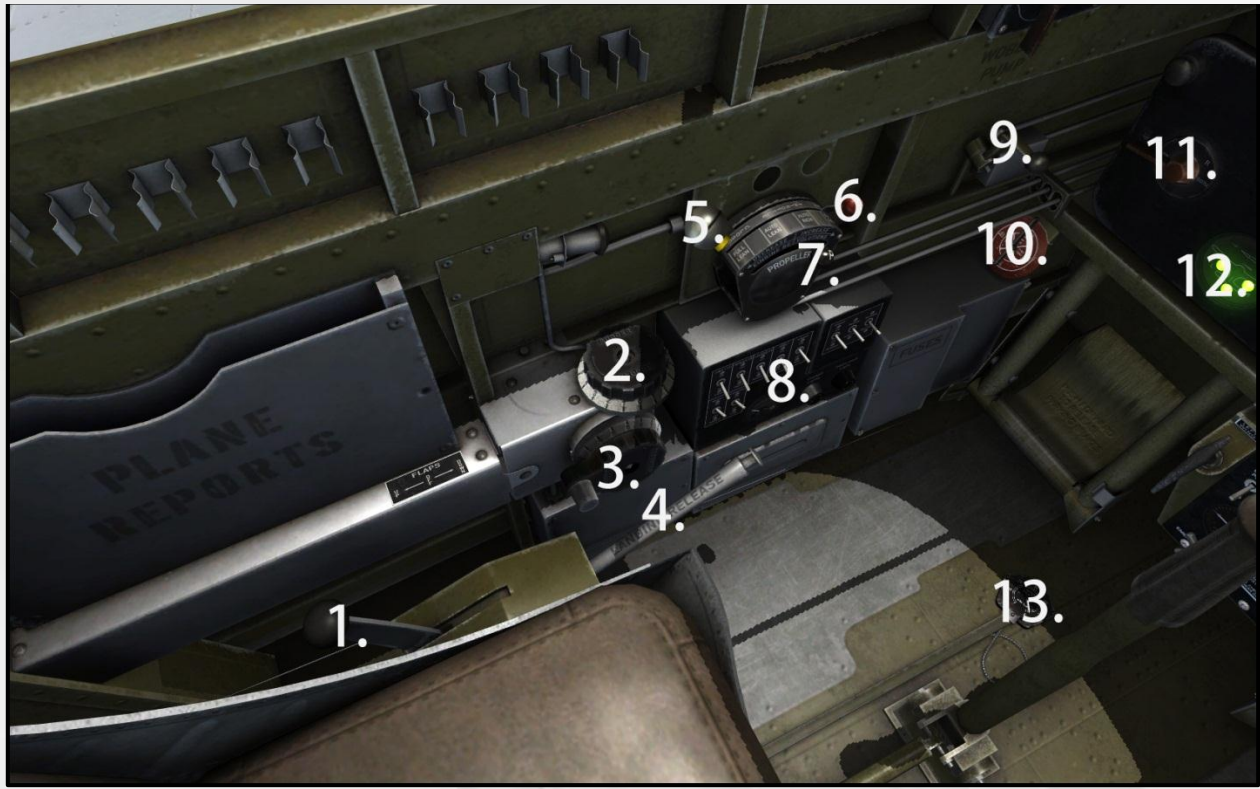
## Cockpit Tour – Forward Panel



- |                                   |   |
|-----------------------------------|---|
| 1. Fuel Transfer Pump             | 15. Gyro Compass                        |
| 2. Fuel Control Cock              | 16. Engine Temperature Indicator        |
| 3. Magneto Control                | 17. Gyro Drift Control                  |
| 4. Suction Indicator              | 18. Whiskey Compass                     |
| 5. Fuel Contents Indicator        | 19. Manifold Pressure Indicator         |
| 6. Landing Gear & Flaps Indicator | 20. Clock                               |
| 7. Temperature Indicator          | 21. Tachometer                          |
| 8. Air Speed Indicator            | 22. Cylinder Head Temperature Indicator |
| 9. Turn & Slip Indicator          | 23. Fuel Pump Switch                    |
| 10. Vertical Speed Indicator      | 24. Starter Switch                      |
| 11. Low Fuel Warning Lamp         | 25. Priming Switch                      |
| 12. Caging Switch                 | 26. Engine Primer                       |
| 13. Low Fuel Warning Test         | 27. Cowling Control Lever               |
| 14. Altimeter                     | 28. Carburettor Air Inlet Control       |



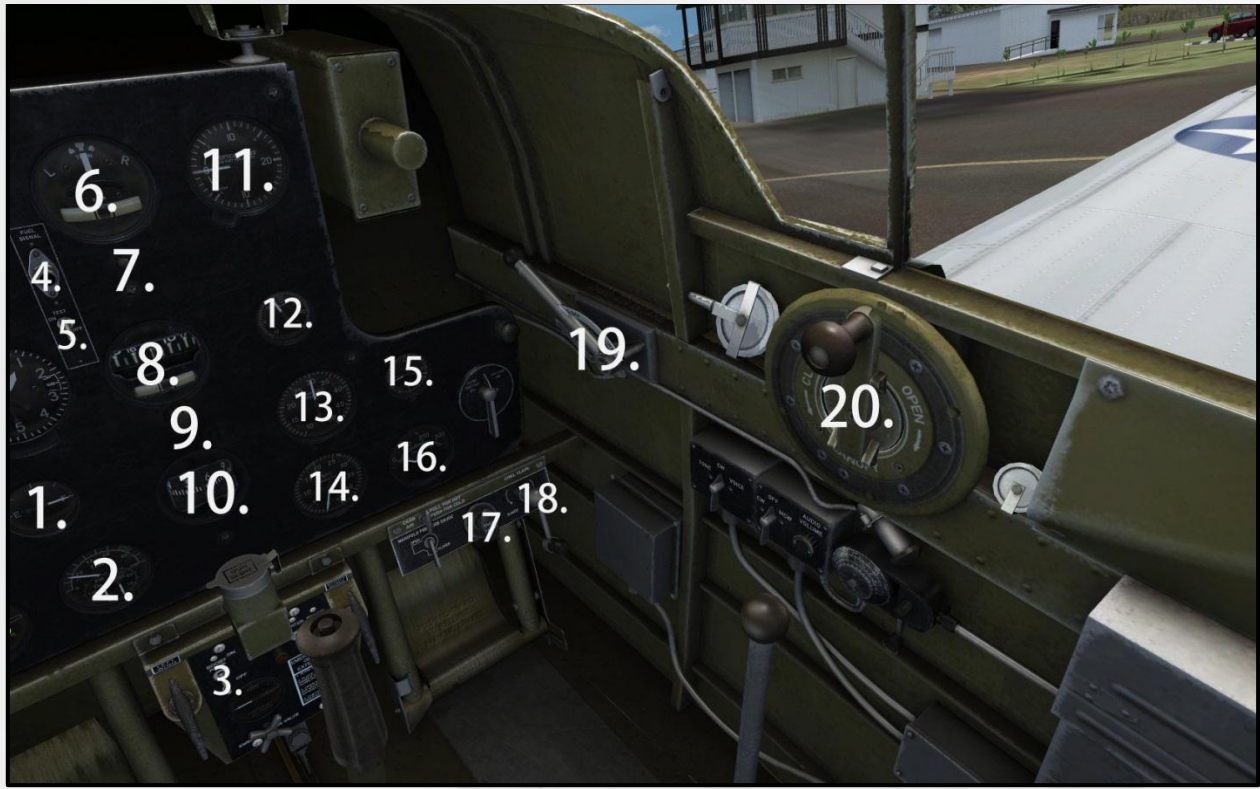
## Cockpit Tour – Forward-Left Panel



### Key

- |                                |   |
|--------------------------------|---|
| 1. Landing Flaps Control Lever | 8. Electrical Control Console           |
| 2. Rudder Trim Control         | 9. Fuel Transfer Pump                   |
| 3. Elevator Trim Control       | 10. Fuel Control Cock                   |
| 4. Landing Gear Control Lever  | 11. Magneto Control                     |
| 5. Throttle Lever              | 12. Landing Gear & Flap Indicator       |
| 6. Mixture Lever               | 13. Centre Wing Tank Contents Indicator |
| 7. Propeller Pitch Lever       |   |

## Cockpit Tour – Forward-Right Panel



### Key

- |                           |                                    |
|---------------------------|------------------------------------|
| 1. Fuel Contents Gauge    | 11. Vertical Speed Indicator       |
| 2. Temperature Gauge      | 12. Engine Temperature Indicator   |
| 3. Fuel Boost Pump        | 13. Manifold Pressure Indicator    |
| 4. Low Fuel Warning Light | 14. Tachometer                     |
| 5. Low Fuel Warning Test  | 15. Clock                          |
| 6. Turn & Slip Indicator  | 16. Cylinder Temperature Indicator |
| 7. Caging Switch          | 17. Engine Primer                  |
| 8. Gyro Compass           | 18. Cowl Flap Control Lever        |
| 9. Gyro Drift Control     | 19. Carburettor Air Inlet Control  |
| 10. Whiskey Compass       | 20. Canopy Control Lever           |

## Cockpit Tour – Electrical Control Console



### Key

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Centre Wing Fuel Tank Light | 7. Generator Voltage Display |
| 2. Wing Lights                 | 8. Cockpit Lights            |
| 3. Landing Light               | 9. Instrument Lights         |
| 4. Pitot Heater                |                              |
| 5. Master Battery Control      |                              |
| 6. Generator Control           |                              |

# Official Drawings

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## Official Drawings Introduction

Over the next few pages are drawings that contain data applicable to all models of P-36 in this package. The images are taken from the real-world flight manuals. The images are therefore copyright of their respective owners.

## Weight Data

### SECTION VI

#### WEIGHT DATA

			Normal Gross
Weight Empty - (including 66 lb. radio)			4452 *
Crew			200
Fuel	Main	105 gal. incl. (Reserve 2 wing tanks)	630
	Auxiliary	57.5 gal. (1 fuselage tank)	345
Oil	Normal	10 gal.	75
	Maximum	13.5 gal.	101
<u>Armament</u>			
	Fixed gun installation, synchronized,	1-.50 cal. (M-2)	73
	Fixed gun installation, synchronized,	1-.30 cal. (M-2)	27
	Ammunition, 200 Rounds,	.50 cal.	50
	Ammunition, 500 Rounds,	.30 cal.	33
	Oxygen Installation		13
Total Normal Useful Load			1101
Total Weight Loaded, Normal Gross Weight			5555 *
* Weights from preliminary report on first airplane, Form III, April 18, 1938.			



## Preliminary Checklist

Check List required by A.C. Circular 60-6.

### ENGINE INSTRUCTIONS

#### STARTING

1. Pull engine thru.
2. Carb. air on cold
3. Cowl flaps open
4. Throttle 1/10 open
5. Mixture - Automatic
6. Prop.-Automatic-2700
7. Main Line switches "on"  
Electrical & Propeller
8. Fuel Cock - on Main
9. Pump up fuel pres. 4#
10. Prime several strokes.
11. Insert Cartridge
12. Ign. switch on - Both
13. Step on starter pedal.
14. Idle at 500 rpm. Until  
oil pres. is established.  
Must show within 1/2 minute
15. Shut off primer
16. Remove blank cartridge
17. Warm up at 1000 rpm to  
oil temp. of 40°C. min.

#### GROUND TEST

1. Oil at 40 C. Min.
2. Max. duration of test  
15 seconds.
3. Cowl flaps open.
4. Prop.-Automatic-2700
5. Man. Pres. 26.0 Max.
6. Cylinder head
7. Temp. Max. - 205°C
7. Oil pres. 90 to 100#  
at -----60°C
8. Oil temp. 65 to 85°C.  
Max. -----85°C.
9. Fuel pres. -----4#  
Max. -----6#

#### BEFORE-TAXIING-STARTING ENGINE-or-LANDING

Make sure landing gear is locked "down"  
and "Klaxon" horn is off.

## Test Flight Checklist

### ENGINE INSTRUCTIONS FLIGHT

#### TAKE-OFF

1. Mixture-Automatic
2. Carb. Air on Cold
3. Max. rpm & Prop. Setting Auto. & 2700
4. Mfd. pres. 42.8 max. for 5 min. max.
5. Cowl flaps open
6. Head temp. 260°C Max.

#### CLIMB & HIGH SPEED

1. Max. rpm. & Prop. Setting (Auto.) 2550
2. Max. Manifold Pressure  
Alt. 0 to 6000 35.5  
6000 and up 34.0
3. Cowl flaps open.
4. Head temp. Max. 260°C.
5. Mixture - Automatic

#### CRUISING-MAXIMUM

1. Max. rpm. & Propeller setting (Auto.) 2250
2. Mfd. pres. Max. 27.0
3. Mixture-Automatic
4. Head temp. --235°C.

#### CRUISING DESIRED

1. Max. rpm. and propeller setting - Auto. 2200 2150
2. Mfd. pressure 25.5 24.5
3. Mixture Auto. Auto.
4. Head Temp. 235°C 235°C.

#### LANDING

1. Prop. set 2150 to 2500 rpm - Automatic
2. Mixture - Automatic
3. Cowl flaps open.
4. Carb. air on cold
5. Ldg. Gr. locked Down
6. Wing Flaps Down

#### CYLINDER HEAD TEMP.

1. Max. barrel 165°C.
2. Max. head  
Take-off 260°C.  
Climb & High Sp. 260°C.  
Cruising Contu. 235°C.

#### OIL

- #### FUEL PRESSURE
1. 4# desired 6# max.

Condition	Pres. #	Temp. °C.
1. Desired	90 to 100	85 to 85 Max.
2. Max. - Climb only	105#	85 to 100
3. Min. Cruis.	65	65
4. Idling	15	--