AEROPLANE HEAVEN

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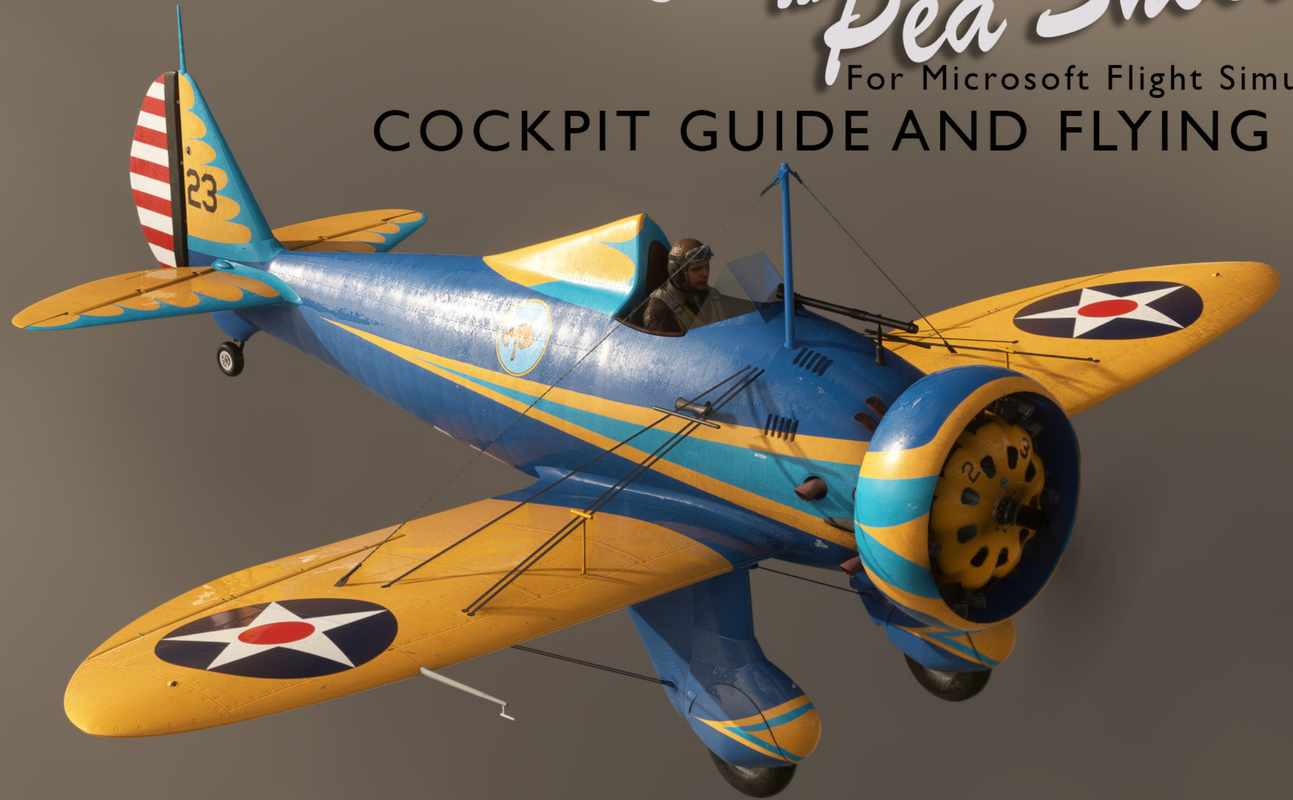
BOEING P-26

America's first all-metal fighter

The "Pea Shooter"

For Microsoft Flight Simulator

COCKPIT GUIDE AND FLYING NOTES



Introduction.

Designed and built by Boeing, this was the first all-metal monoplane fighter aircraft to enter service with the United States Army Air Corps. The prototype first flew in 1932 and after several mishaps and numerous changes, the design was eventually accepted into service two years later.

Although the first all-metal fighter it was also the last of its type to use fixed undercarriage, an open cockpit and external bracing wires - a hang-over from the bi-plane era.

Powered by a Pratt & Whitney 9 cylinder radial developing 600hp, the P26 was faster than previous U.S. combat aircraft with a top speed of 234 m.p.h. However just a few years later, designs such as the Curtiss P-36, Hawker Hurricane and Messerschmitt Bf109 were taking command of the skies.

The long telescopic gunsight mounted in front of the windscreen gave rise to pilots dubbing the design “Pea-Shooter” - a name which stuck for the life of the type.

In the years before the Second World War, American fighter aircraft were painted in bright colours to signify their respective units. Some designs were incredibly intricate and pilots were justly proud of their mounts. Pursuit Squadron emblems were displayed large on the fuselage sides and various stripes, bands and flashes indicated the rank of the pilot and their position in the squadron.

22 squadrons flew the P-26 and the little fighter were the mainstay of the USAAC front line until 1938. The “Pea-Shooter” was exported to China for use by the Chinese Nationalist Air Force against invading Japanese forces. In August of 1937, the P26’s engaged and shot down three Japanese bombers without loss and the skirmishes that developed between the Chinese Pea-Shooters and Japanese A5Ms became the first recorded aerial dog-fights between two all-metal fighter aircraft.

P26s were also sent to the Philippines following the Japanese attack on Pearl Harbour in 1941. Despite being out-classed by the more modern Japanese foe, the valiant pilots of the Philippine Army Air Corps and their “vintage” P26 Pea-Shooters engaged and destroyed a Mitsubishi G3M bomber and no less than three A6M “Zeros”.

By 1943, the P-26 had been retired from active front-line duty and was placed in reserve as a trainer.

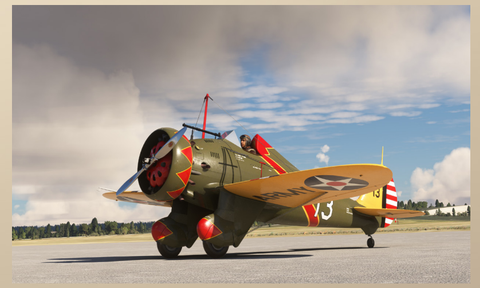
From a total of 111 airframes built, only a handful remain in museums and at today’s date, only one is airworthy.

BOEING P-26 “PEA-SHOOTER”

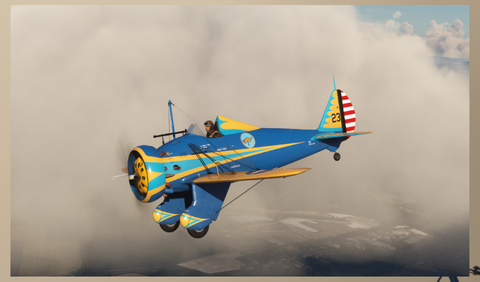
SPECIFICATIONS

Length:	**23ft 7in (7.19m)**
Wingspan:	**28ft 0in (8.5m)**
Wing Area:	**250 sq.ft. (23m2)**
Height:	**10ft 0in (3.0m)**
Empty Weight:	**2,196lb (996 kg)**
Max T/O Weight:	**3,360lb(1,524kg)**
Maximum Speed:	**234mph (203kts)**
Cruising Speed:	**200mph (174kts)**
Ceiling:	**27,400ft (8,400m)**
Range:	**360 miles (580km)**
Powerplant:	**1x P&W R-1340-27 WASP 9 Cylinder Radial developing 600hp**
Payload:	**Up to 3,000lb bombs**
Armament	**2 x 30 caliber Browning Machine Guns**
	2 x 100lb bombs

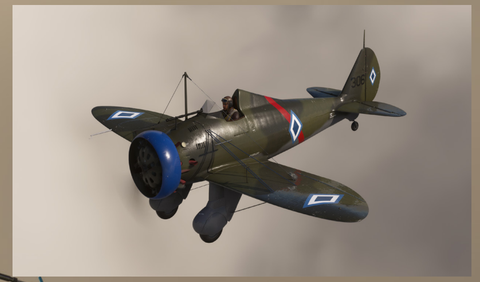
In this guide we will take you through all the necessary steps needed to fly a P-26 “Pea-Shooter, point out some of the design’s unique features and get you as close as possible to feeling what it would have been like to fly this incredible aeroplane.



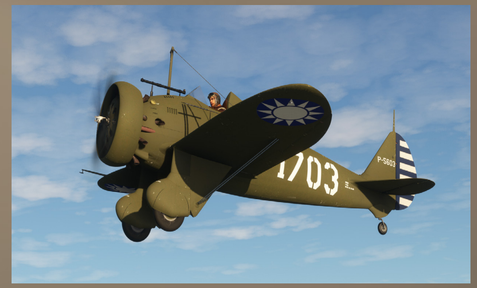
94th Pursuit Squadron Selfridge Field Michigan 1935



95th Pursuit Squadron USAAC March Field 1935



67th Pursuit Squadron Philippines Army Air Corps credited with shooting down a Japanese bomber on 12th December 1941



17th Pursuit Squadron Chinese Nationalist Air Force Chu-yung 1937. The pilot was Lt. “Buffalo” Wong Sun Sui an “ace”.

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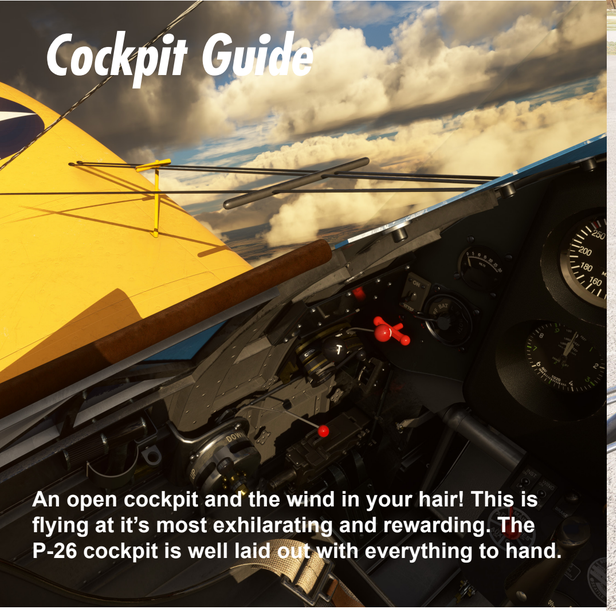
Cockpit Guide



An open cockpit and the wind in your hair! This is flying at it's most exhilarating and rewarding. The P-26 cockpit is well laid out with everything to hand.

1. Airspeed indicator
2. Magnetic Compass
3. Tachometer
4. Altimeter
5. Gyro compass
6. Ambient Air Temperature
7. Engine Gauge
8. Manifold Pressure
9. Gyro Compass Knob
10. Volt Meter
11. Battery Switch
12. Magneto Switch
13. Starter
14 Throttle
15. Mixture
16. Carburettor Heat
17. Manual Fuel Pump Lever
18. Elevator Trim Lever
19. Instrument Lights Switch
20. Navigation Lights Switch
21. Park-Brake Lever
22. Instrument Lights Rheostat
23. Compass Light Rheostat
24. Fuel Tank Selector
25. Fuel Contents (Main Only)
26. Flaps Control Handle
27. Flaps Position Indicator
28. Cockpit door release
29. Avionics (GPS) toggle

Flying the P26 "PeaShooter".

At the end of this manual you will find a complete set of CHECKLISTS. However, it will be useful to run through a few things about handling and flying the PeaShooter.

So, let's get started. We are going to assume you are using the "Cold-Dark" start method. That is, all switches OFF, all controls neutral.

Turn ON the **Master Battery Switch (11) on the Main Instrument Panel.** Turn ON the **Avionics Switch (29) on the Center Panel to test if the GPS is operational. Turn off this switch when done TO AVOID BATTERY DEPLETION.**

Fuel system.

The P26 has three tanks- one in each wing which are considered **Left and Right AUXILIARY** and centrally-mounted **MAIN** which includes the **RESERVE**. The **FUEL GAUGE (25)** records the level in the **MAIN TANK ONLY**.

There is a **MANUAL FUEL PUMP** and an **ENGINE-DRIVEN-FUEL PUMP.**

PUMP the **Manual FUEL PUMP HANDLE (17) AT LEAST 5 STROKES observing a rise in fuel pressure at the gauge (7)**.

N.B.. IF YOU SKIP THIS PROCESS THE ENGINE WILL START BUT ONLY WHILE THE FUEL LASTS IN THE FUEL LINE, THEN IT WILL CUT!

Ignition system.

Turn the **MAGNETO SWITCH (12) to BOTH**

Engine Start.

"Crack" the **THROTTLE (14) SLIGHTLY OPEN**
MIXTURE (15) TO FULL-RICH (FULLY FORWARD)
PULL THE STARTER HANDLE OUT AND HOLD IT FOR 7-8 SECONDS
This energises the electric starter and the prop will begin to turn slowly. After at least 7 seconds, release and **PUSH THE STARTER HANDLE FULLY FORWARD TO START THE ENGINE.**

The engine should fire up and run. If it doesn't repeat the above process ensuring that you give the energiser (HANDLE OUT) adequate time.

Once the engine is running, check the gauges for readings which should be in the regions:

OIL PRESSURE **at least 60 p.s.i.**
OIL TEMPERATURE **at least 60 ^{0}C.**

Run-up Test.

To check that everything is order, there are several checks to be made whilst warming up the engines, prior to taxying out.

Set throttles to give 1,000 R.P.M. idle. (Approx. 15 inches of mercury - Manifold Pressure)

OIL PRESSURE **60 P.S.I**
OIL TEMPERATURE **15^{0}** (MINIMUM)

Check operation of Magnetos. (Mag-check)

With the PARK-BRAKE (21) set, open up to around **1,800 R.P.M**.

Turn the **MAGNETO SWITCH from BOTH to RIGHT**
Observe a drop in **R.P.M.** of **NO MORE THEN 100**
Return the switch **from RIGHT to BOTH**

Turn the **MAGNETO SWITCH from BOTH to LEFT**
Observe a drop in **R.P.M.** of **NO MORE THEN 100**
Return the switch **from LEFT to BOTH**

Check operation of flaps (26).

Taking off.

Once lined up with the runway, set the bakes.

Set flaps to 20^{0} down.
Set Elevator Trim slightly nose down.
Set Throttles to idle.
Mixture control fully RICH
Check fuel contents.
Check engine instruments.

Open up to 1800 R.P.M (35 inches of mercury) and release the brakes. As you begin to roll open the throttles to maximum. The P26, being a "tail-dragger", can have a tendency to swing on the takeoff roll. This is easily countered with the rudder. This behaviour diminishes once the tail-wheel is off the ground.
Ease back on the stick to take off at around 90 M.P.H

Fly straight and level to 110 M.P.H. before commencing climb out.
Raise the flaps at 800 ft.

Climbing.

Best speed for economical climbing is 125 m.p.h.
Above 5,000 ft., lean off the mixture.
If required, switch on the **AVIONICS (29)** and **SET RADIOS**

Cruise.

Trim the elevator tab for level flight.
Throttle should be set to give **2,000 R.P.M. or around 43 inches of mercury**
Switch to Auxiliary (wing) tanks.

Approach and Land.

Reduce speed to below 200 m.p.h.
Set flaps to 20^{0} down.
Set Elevator Trim as required.
Mixture control full rich.
Check fuel contents and switch to MAIN TANK.
Check engine instruments.
The correct speed for approach to land is 100.m.p.h.
Set flaps to full down and balance throttle to give around 75 m.p.h. as you reach the threshold.

Close throttle and touch down at around 60-80 m.p.h.
Allow the tail to drop and the tail-wheel ground before applying brakes.

CHECKLISTS

PRE-FLIGHT

CREW	ABOARD
DOOR	CLOSED
PARKING BRAKE	ON
MASTER BATTERY	OFF
MAGNETOS	OFF
FLAPS	UP
FUEL CONTENTS	CHECK
FUEL SELECTOR	OFF
THROTTLE	CLOSED
MIXTURE	CLOSED

PRE START

PARKING BRAKE	ON
MASTER BATTERY	ON
MAGNETOS	OFF
FUEL SELECTOR	MAIN
FUEL PUMP (MANUAL)	STROKE TO GIVE 5 P.S.I.(MIN.)
FLAPS	UP
THROTTLE	OPEN 1/4 INCH
MIXTURE	FULL RICH

PLEASE NOTE: CARBURETTOR AIR CONTROL SHOULD BE LEFT IN “COLD” POSITION FOR STARTING.

START

PARKING BRAKE	ON
MASTER BATTERY	ON
MAGNETOS	BOTH
FUEL SELECTOR	MAIN
FLAPS	UP
THROTTLE	OPEN 1/4 INCH
MIXTURE	FULL RICH
STARTER	PULL TO ENERGISE (AT LEAST 4 SECONDS)
STARTER	PUSH TO START (UNTIL ENGINE FIRES)

WARM AND RUN-UP MAG TEST

OIL PRESSURE	AT LEAST 60 P.S.I.
OIL TEMPERATURE	15^0 (MINIMUM)
FUEL PRESSURE	10 -15 PSI
BRAKES	CHECK
ALTIMETER	SET
COMPASS	FREE
THROTTLE	1800 R.P.M.
RIGHT MAG	OFF 100 RPM DROP
RIGHT MAG	ON
LEFT MAG	OFF 100 RPM DROP
LEFT MAG	ON
THROTTLE	IDLE
NAV LIGHTS	ON

TAKEOFF

THROTTLE	1800 R.P.M.
MIXTURE	FULL RICH
BRAKES	RELEASE
THROTTLE	2,300 R.P.M.
ROTATION	75 MPH
ATTITUDE	LEVEL UNTIL 110 MPH

CLIMB

THROTTLE	TO GIVE 140 -170 MPH
TRIM	NOSE UP FOR GENTLE CLIMB
FLAPS	UP
FUEL SELECTOR	AUX. TANKS

CRUISE

TRIM	AS REQUIRED
THROTTLE	TO MAINTAIN 200 MPH
MIXTURE	AS REQUIRED

APPROACH AND LANDING

TRIM	AS REQUIRED
THROTTLE	TO GIVE 150 MPH (INITIAL)
FUEL SELECTOR	MAIN TANK
FLAPS	20^0 down
THROTTLE	TO GIVE 100 MPH
FLAPS	FULL DOWN
THROTTLE	IDLE TO LAND AT 68 MPH
BRAKES	APPLY WHEN TAIL-WHEEL GROUNDED

SHUTDOWN

PARKING BRAKE	ON
THROTTLE	TO 1,400 R.P.M.
MIXTURE	CLOSED
THROTTLE	CLOSE IMMEDIATELY
MAGNETOS	OFF
MASTER BATTERY	OFF
AVIONICS	OFF
FUEL SELECTOR	OFF
FLAPS	UP
DOOR	OPEN

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