orbx

Fokker F.VII

Flight Manual

Microsoft Flight Simulator

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Photosensitive seizure warning

A very small percentage of people may experience a seizure when exposed to certain visual images, including flashing lights or patterns that may appear in video games. Even people who have no history of seizures or epilepsy may have an undiagnosed condition that can cause these “photosensitive epileptic seizures” while playing video games.

Immediately stop playing and consult a doctor if you experience any symptoms.

These seizures may have a variety of symptoms, including lightheadedness, altered vision, eye or face twitching, jerking, or shaking of arms or legs, disorientation, confusion, or momentary loss of awareness. Seizures may also cause loss of consciousness or convulsions that can lead to injury from falling down or striking nearby objects.

Parents should watch for or ask their children about the above symptoms. Children and teenagers are more likely than adults to experience these seizures.

You may reduce risk of photosensitive epileptic seizures by taking the following precautions:

- Play in a well-lit room.
- Do not play if you are drowsy or fatigued.

If you or any of your relatives have a history of seizures or epilepsy, consult a doctor before playing video games.

Disclaimer

This flight manual is for the sole purpose of flying the Fokker F.VII within Microsoft Flight Simulator.

The content of this manual should not be relied upon in any way to fly real aircraft and Orbx take no responsibility for actions arising from using the content in the real world.

Introduction

Fokker F.VII

History

The F.VII was designed as a single-engine transport aircraft by Walter Rethel. Five examples of this model were built for the Dutch airline KLM. One of these aircraft, registered H-NACC, was used in 1924 for the first flight from the Netherlands to the Dutch East Indies. In 1925, while living in the US, Anthony Fokker heard of the inaugural Ford Reliability Tour, which was proposed as a competition for transport aircraft. Fokker had the company's head designer, Reinhold Platz, convert a single-engine F. VIIa airliner to a trimotor configuration, powered by 200 hp Wright Whirlwind radial engines. The resulting aircraft was designated the Fokker F. VIIa/3m. Following shipment to the US, it won the Ford Reliability Tour in late 1925. The Trimotor's structure consisted of a fabric-covered steel-tube fuselage and a plywood-skinned wooden wing.

The Fokker F. VIIb/3m had a slightly increased wing area over the F. VIIa/3m, with power increased to 220 hp per engine, while the F.10 was slightly enlarged, carrying 12 passengers in an enclosed cabin. The aircraft became popularly known as the Fokker Trimotor.

“The Southern Cross”

The Southern Cross began life as the *Detroiter*, a polar exploration aircraft of the *Detroit News-Wilkins* Arctic expedition. The aircraft had crashed in Alaska in 1926 and was recovered and repaired by the Australian expedition leader, Hubert Wilkins. Wilkins, who had decided the Fokker was too large for his Arctic explorations, met with Kingsford Smith and Charles Ulm in San Francisco and arranged to sell them the aircraft, without engines or instruments.

Having fitted the aircraft with engines and other required parts, Kingsford Smith made two attempts at the world endurance record in an attempt to raise funds and interest for his trans-Pacific flight. However,

after the New South Wales government withdrew its sponsorship of the flight, it looked as if the money would run out and Kingsford Smith would have to sell *The Southern Cross*. The aircraft was bought by American aviator and philanthropist Allan Hancock, who then loaned it back to Kingsford Smith and Ulm. The three Wright Whirlwind engines were funded by Melbourne businessman Sidney Myer.

On 31 May 1928, the crew—Charles Kingsford Smith, Charles Ulm, and Americans Harry Lyon (navigator) and James Warner (radio operator)—took off from Oakland, California, United States. *The Southern Cross* stopped for rest and refuelling in Hawaii before setting off for Fiji. This leg of the journey took 34+½ hours of flight across open seas before gliding past the Grand Pacific Hotel in Suva, where a large and enthusiastic crowd saw the first aircraft to land in Fiji touch down at Albert Park. She then landed at Eagle Farm Airport in Brisbane, Queensland, Australia, on 9 June, where a crowd of 25,000 people were waiting to greet her on its arrival at the airport.

The aircraft was in constant radio communication with ships and shore during the flight using four transmitters and three receivers powered by a ram air turbine attached to the fuselage below the cockpit. The first paid commercial messages were sent and received during the flight and a new world record distance for radio was set with a short-wave reception at Bloemfontein, South Africa, the long way around the world at 12,800 miles (20,600 km). Direct short-wave aircraft-to-shore communications were maintained with the Pacific Coast until the flight was four hours out of Honolulu which had been monitoring the flight from two hours after departure with a similar reception overlap on the Honolulu to Suva leg.

Success on this flight influenced Admiral Byrd to equip his three Antarctic Expedition aircraft with similar equipment.

Shortly before Kingsford Smith's death in 1935, he sold T*he Southern Cross* to the Commonwealth of Australia, for display in a museum. The aircraft was brought out of retirement briefly in 1945 for the filming of the movie *Smithy*. She was refurbished in 1985 under the supervision of Jim Schofield, a senior aviation civil servant and air crash investigator. *The Southern Cross* is now preserved in a special glass hangar memorial on Airport Drive, near the international terminal at Brisbane Airport.

A full-sized flying reproduction of *The Southern Cross* was built in South Australia between 1980 and 1987 and is the largest known reproduction aircraft in the world. Sergeant Anthony Lohrey of the Royal Australian Air Force, Aircraft Research and Development Unit (ARDU) oversaw its construction.

On 25 May 2002 at Parafield South Australia she lost a main wheel on take-off. The replica was landed on the one good wheel and the tailskid with the pilot keeping the damaged undercarriage off the ground by keeping the wing high in the air. When the aircraft stopped the wing came down and snapped off ~3 m of the wing tip. After considerable negotiation the Historical Aircraft Restoration Society (HARS) acquired the aircraft from the SA Government in 2010, and the aircraft was transported to HARS facility at Illawarra Regional Airport, Albion Park, New South Wales. The replica aircraft is being restored to full airworthy status by HARS volunteers and recently ran taxi-out and back tests at the airfield facility.

We thank the HARS volunteers for assisting us with the production of The Southern Cross for Microsoft Flight Simulator.

“Friendship”

Though Friendship was equipped with aluminium pontoons for water takeoffs and landings, it was otherwise the same type as Southern Cross.

She was the fourth aircraft to be produced in the series and her first flight was on February 16 1928.

On June 17/18 1928 she carried out a trans-Atlantic flight with Amelia Earheart as a passenger who would be the first woman to cross the Atlantic Ocean. She was accompanied by pilot Wilmer Lower Stultz and mechanic Louis Edward Gordon.

They departed from Trepassey Harbor, Newfoundland, and arrived at Burry Port (near Llanelli), Wales, United Kingdom on the southwest coast of Wales, 20 hours, 40 minutes later.

“Josephine Ford”

Josephine Ford is the first Fokker F.VIIa/3m monoplane. It was built by Anton H.G. Fokker’s N.V. Koninklijke Nederlandse Vliegtuigenfabriek Fokker at Veere, Netherlands in 1925, and made its first flight at Schipol, 4 September 1925

The Josephine Ford was purchased for the Byrd Arctic Expedition by Edsel Ford and named Josephine Ford in honor of his 3-year-old daughter, Josephine Clay Ford.

On May 9, 1926 with Chief Bennett as the expedition’s pilot and Lieutenant Commander Richard Byrd navigating they departed Spitzbergen in the Svalbard Archipelago, Norway, on a round-trip flight to the North Pole. They flew approximately 840 miles (1,350 kilometers) to the Pole and returned the same day. The total duration of the flight was 15 hours, 44 minutes.

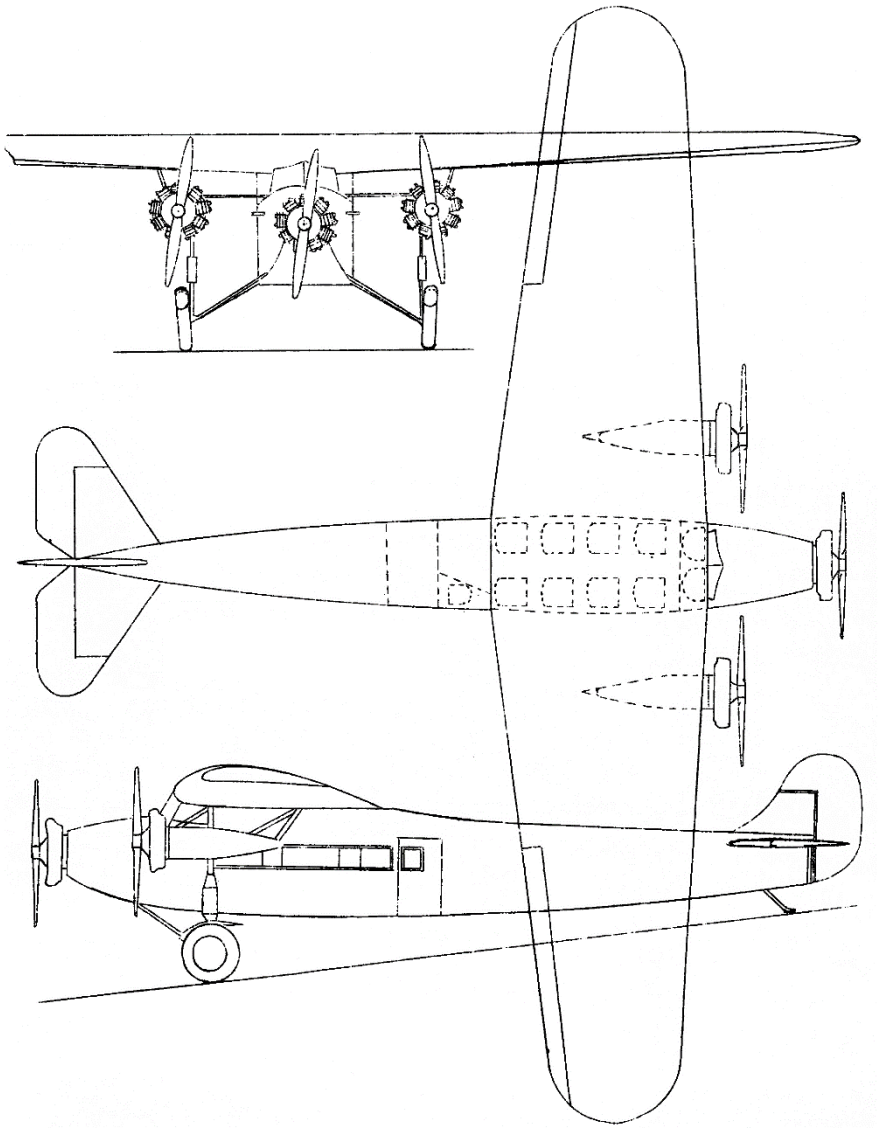
For this accomplishment, Lieutenant Commander Byrd was promoted to Commander, and Chief Bennett to Warrant Officer. Both aviators were awarded the Medal of Honor by President Coolidge.

The discovery in 1996 of a diary that Byrd had kept of his famous flight seems to suggest that he and Bennett may have turned back 150 miles short of the pole because of an oil leak in the aircraft. The diary also contained erased (but still legible) sextant readings that sharply differ with a later typewritten official report on June 22nd to the National Geographic Society.

To this day, Richard Byrd’s expedition to the North Pole is still a disputed achievement.

Specifications F.VII/3m

- **Crew:** 2
- **Capacity:** 8 passengers
- **Length:** 14,5m
- **Wingspan:** 21,71m
- **Empty weight:** 3,100kg (6,834lb)
- **Gross weight:** 5,300kg (11,684 lb)
- **Powerplant:** 3 x Wright J-5 Whirlwind, 9 cylinders and 300hp each



Performance

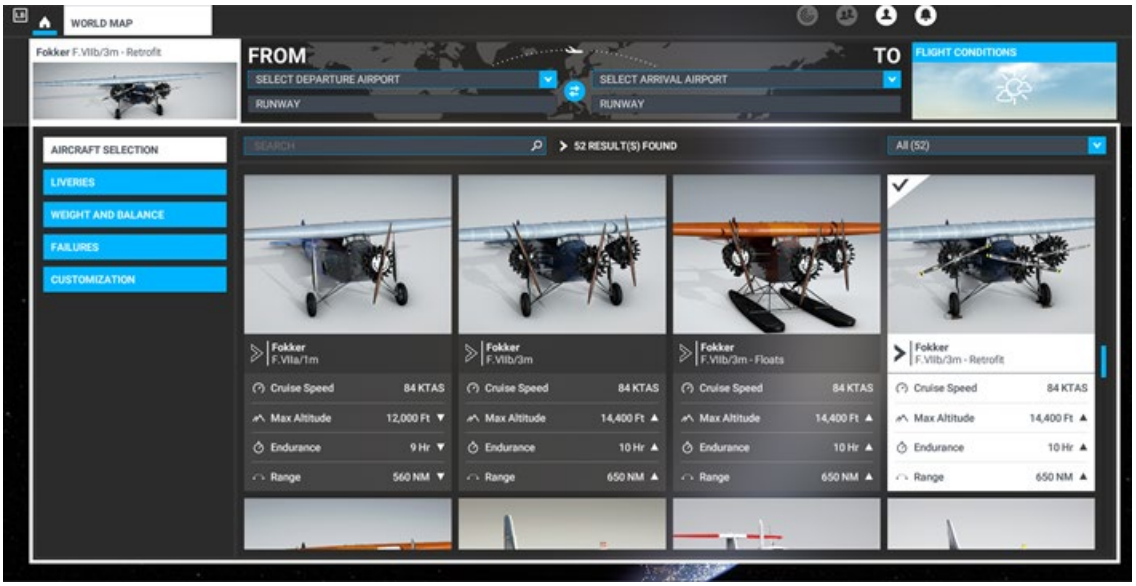
- **Maximum speed:** 109kn (210km/h)
- **Cruise speed:** 96kn (178km/h)
- **Range:** 650nm (1,200km)
- **Service ceiling:** 14,400ft (4,400m)

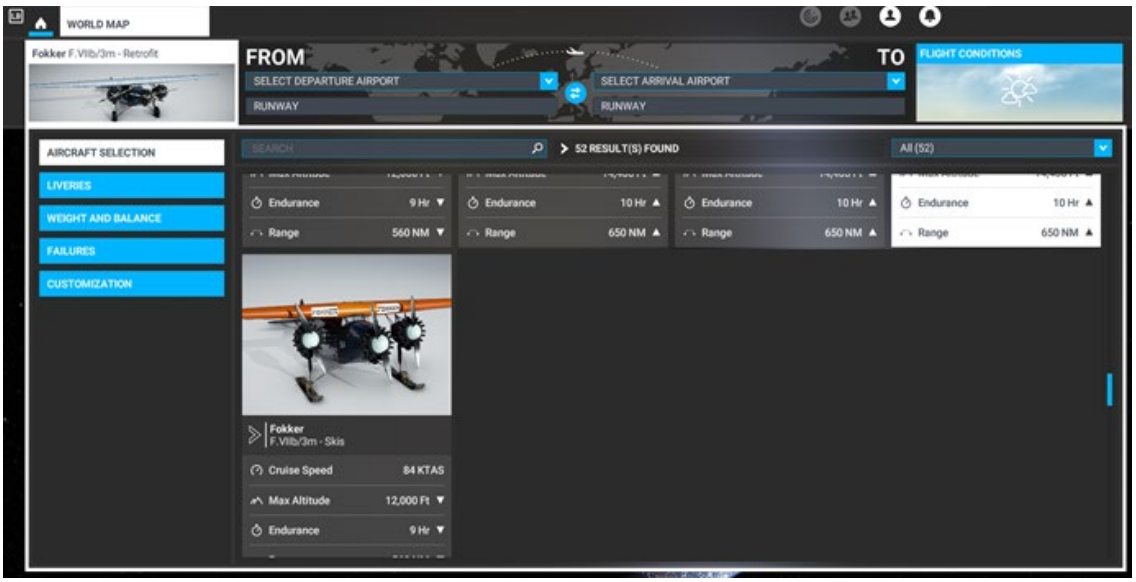
Aircraft Operation

Variants

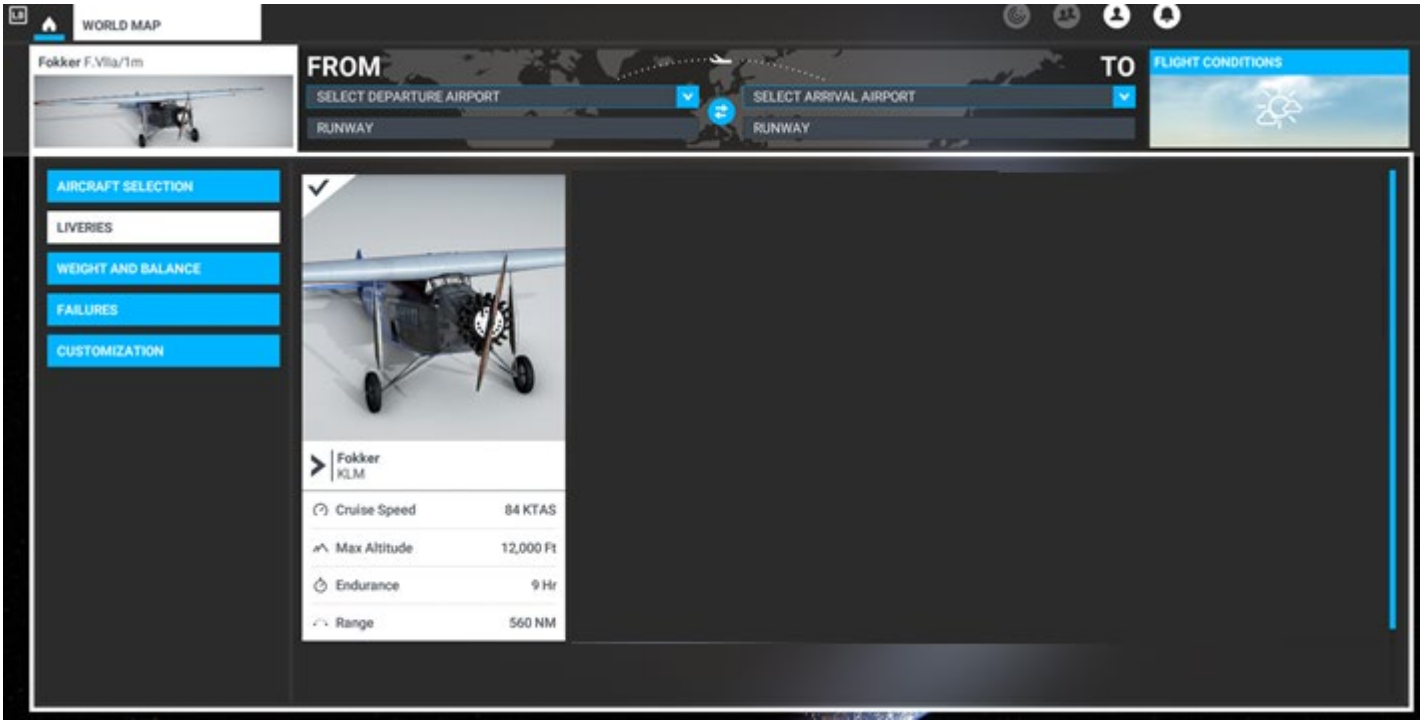
There are 5 main variants within the package; the F.VIIa/1m single engine transport, the F.VIIb/3m “Southern Cross” with original cockpit, the F.VIIb/3m – Floats “Friendship”, the F.VIIb/3m – Retrofit which contains the “Southern Cross” and transport variants with modern day cockpit and the F.VIIa/3m – Skis “Josephine Ford”.

Go to World Map, Aircraft Selection and look for the Fokker variants listed.





Once you have selected your aircraft, open the Liveries tab and you will see the different liveries associated with each aircraft.



Flightdeck

F.VIIa/1m

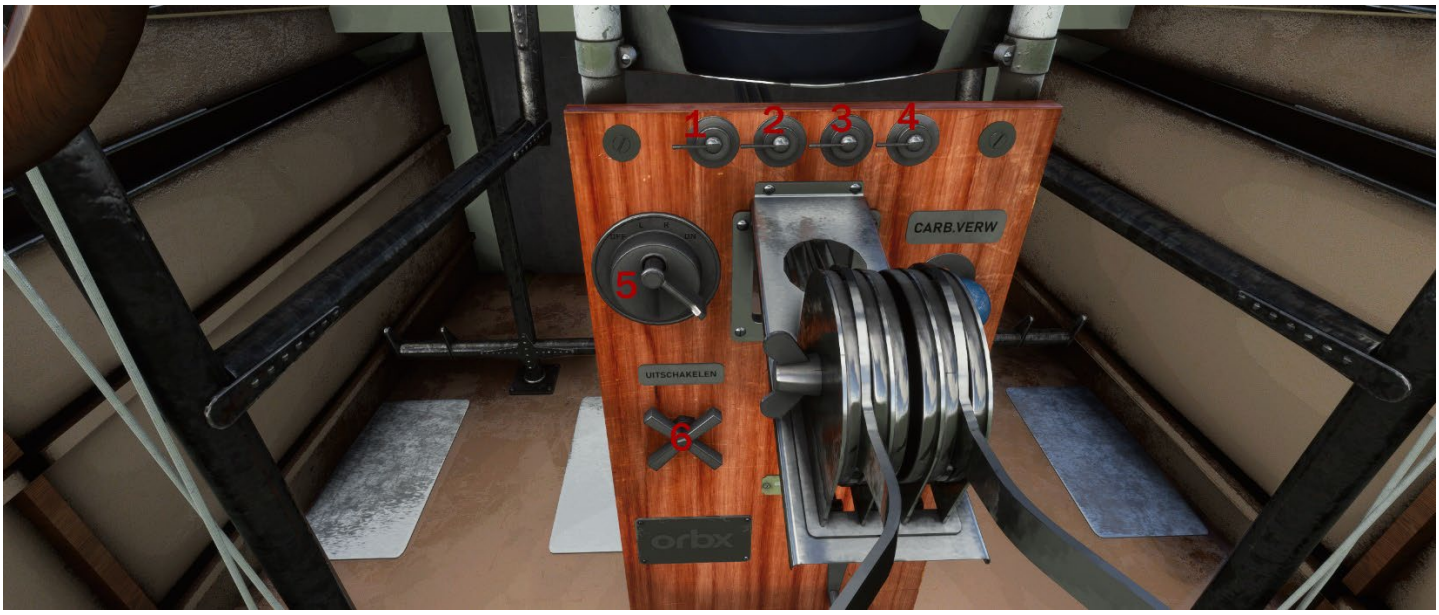
Centre Instruments

1	Air Speed (KMPH)
2	Turn Indicator
3	Chronometer
4	RPM
5	Magnetic Compass

Left Instruments

1	Oil Pressure
2	Oil Temperature (after through the engine)
3	Altitude Indicator (in Thousands of feet)
4	Oil Temperature (supply)

Centre Console – Left Side

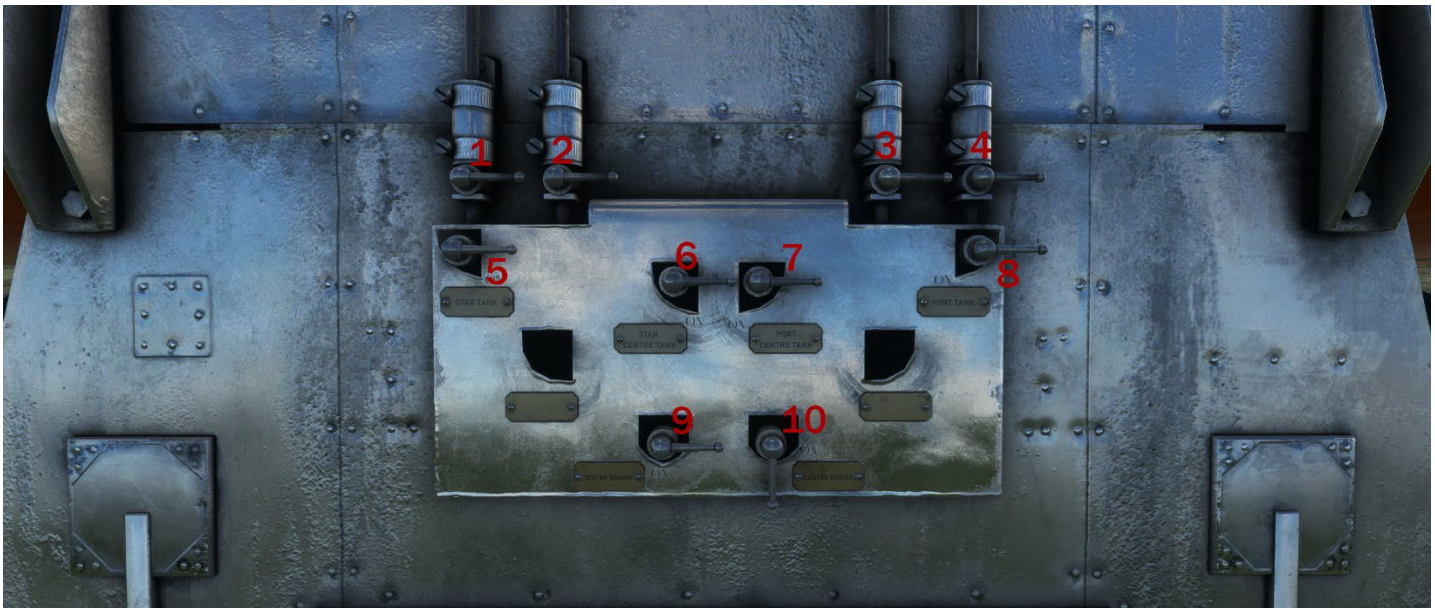


1	Battery
2	Engine Master
3	Primer
4	Fuel Pump
5	Magneto
6	Fuel Valve

Centre Console – Right Side

1	Carb Heat
2	Engine Starter
3	Place Chocks (Parking Brake)
4	Inop

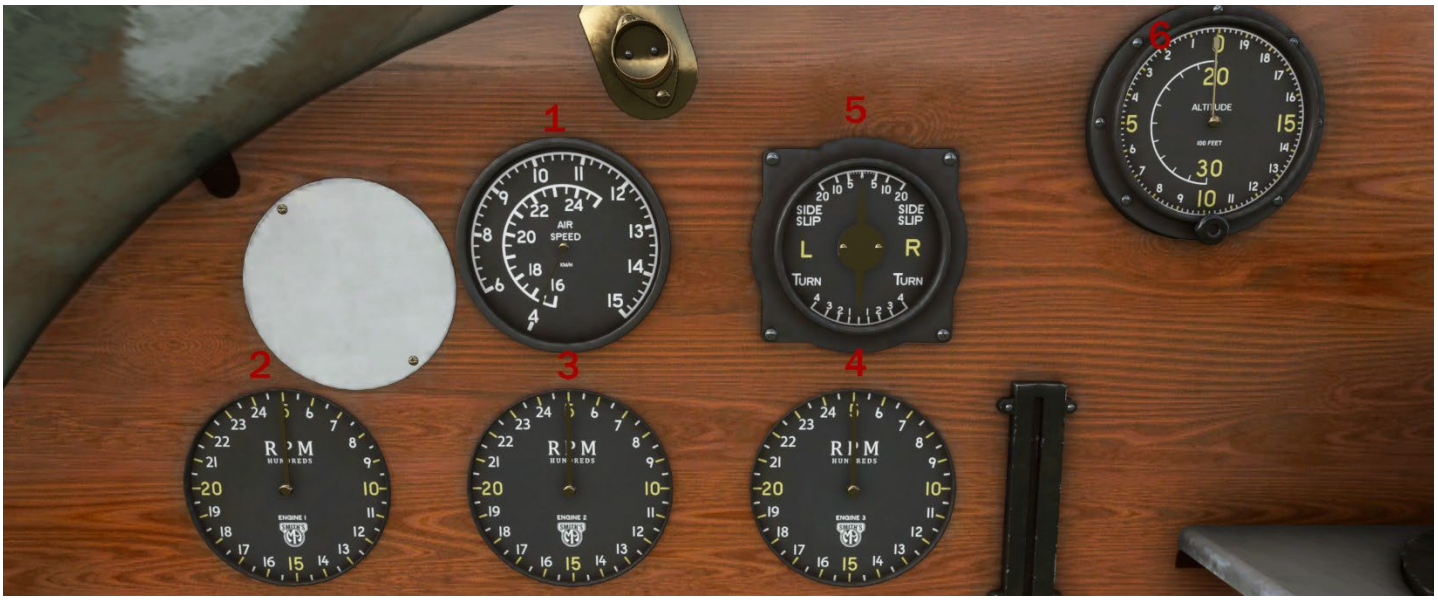
Rear Wall Fuel Panel



1 & 2	Starboard Tank Fuel Valves
3 & 4	Port Tank Fuel Valves
5	Starboard Tank Fuel Pump
6 & 7	Centre Tanks Fuel Pump
8	Port Tank Fuel Pump
9 & 10	Centre Engine Fuel Flow

F.VIIb/3m Southern Cross / Friendship / Josephine Ford (Original Cockpit)

Left Instruments

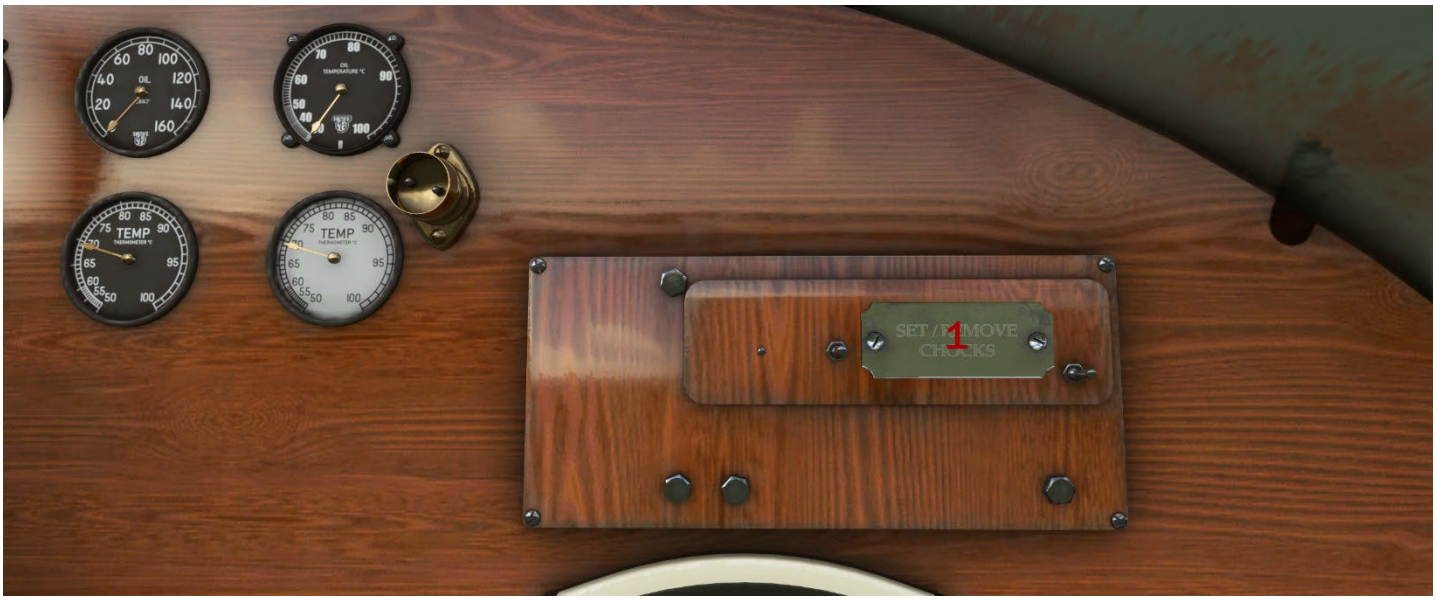


1	Air Speed (KMPH)
2	Port Engine RPM
3	Centre Engine RPM
4	Starboard Engine RPM
5	Turn and Slip Indicator
6	Altitude Indicator (in Thousands of feet)

Right Instruments

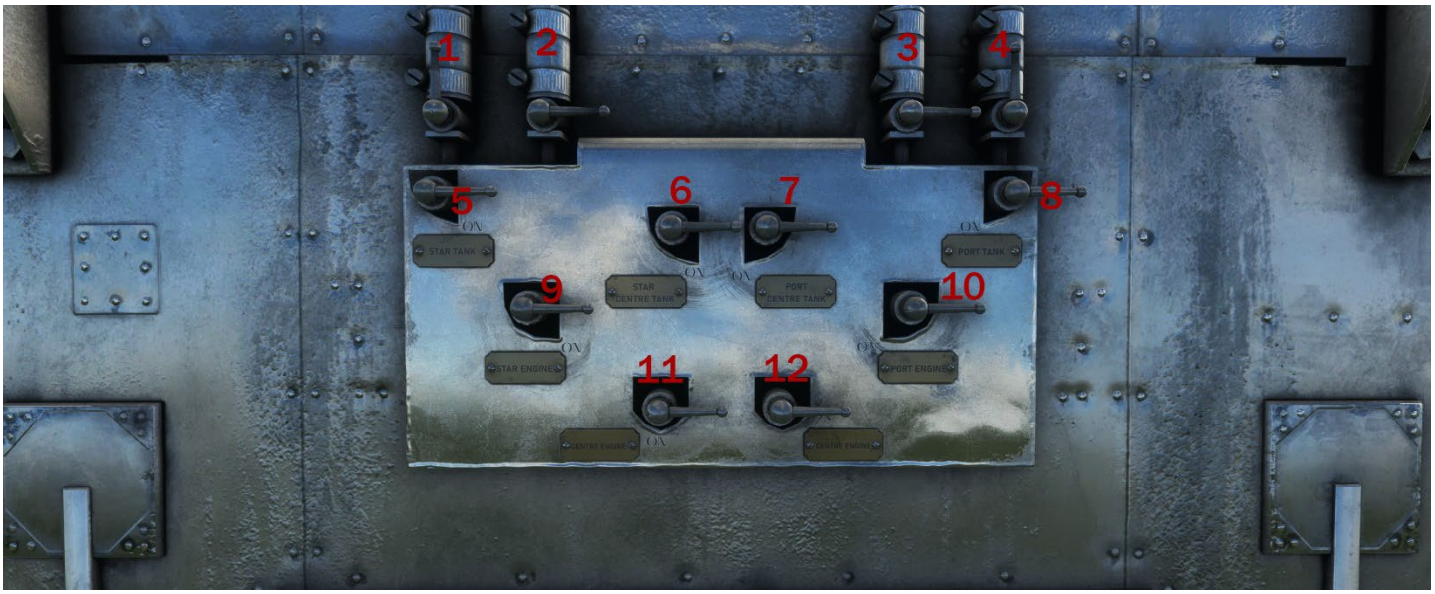
1	Port Engine Oil Pressure (PSI)
2	Centre Engine Oil Pressure (PSI)
3	Starboard Engine Oil Pressure (PSI)
4	Port Engine Temperature (degrees C)
5	Centre Engine Temperature (degrees C)
6	Starboard Engine Temperature (degrees C)

Right Panel



1	Set / Remove Chocks (Parking Brake)

Rear Wall Fuel Panel



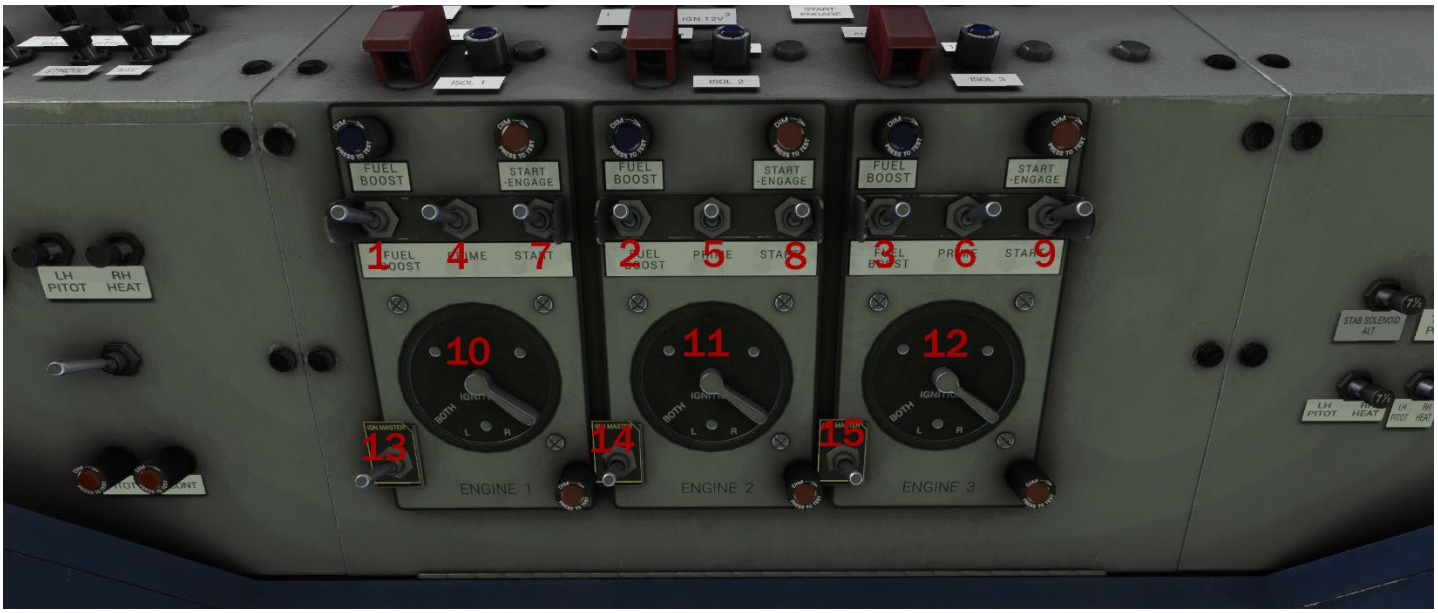
1 & 2	Starboard Tank Fuel Valves
3 & 4	Port Tank Fuel Valves
5	Starboard Tank Fuel Pump
6 & 7	Centre Tanks Fuel Pump
8	Port Tank Fuel Pump
9	Starboard Engine Starter
10	Port Engine Starter
11 & 12	Centre Engine Starter

F.VIIb/3m Southern Cross & Transport Retrofit - Modern Cockpit

Left Overhead Panel

1	Alternator 1
2	Alternator 2
3	Battery
4	Strobe (Beacon) Light
5	Nav Light
6	Pitot Heat
7	Ammeter 1 & 2
8	Voltmeter
9	Inop

Centre Overhead Panel



1	Port Engine Fuel Pump
2	Centre Engine Fuel Pump
3	Starboard Engine Fuel Pump
4	Port Engine Prime
5	Centre Engine Prime
6	Starboard Engine Prime
7	Port Engine Starter
8	Centre Engine Starter
9	Starboard Engine Starter
10	Port Mag Switch
11	Centre Mag Switch
12	Starboard Mag Switch
13	Port Engine Master
14	Centre Engine Master
15	Starboard Engine Master

Centre Overhead Panel

1	Radio / Inst Master (Avionics Switch)

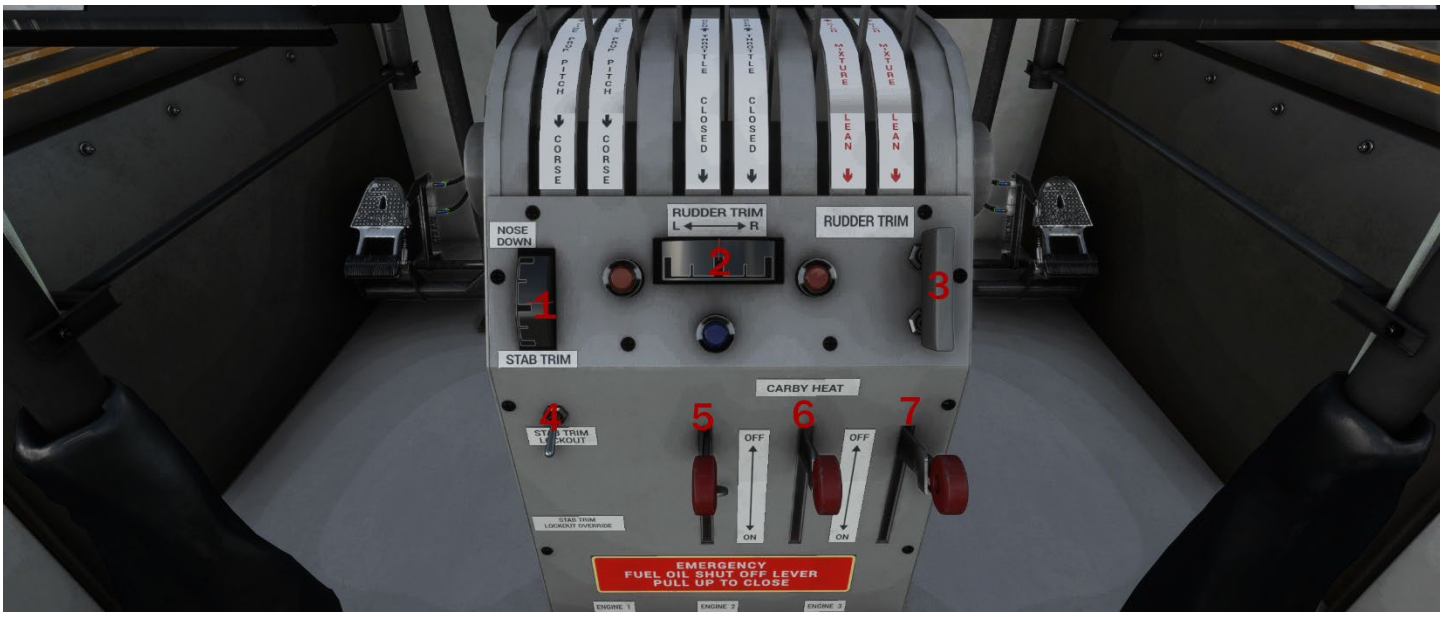
Left Instrument Panel

1	AS155 COM/NAV
2	AS87 ADF
3	Port Engine Pressures and Temperatures
4	Centre Engine Pressures and Temperatures
5	Starboard Engine Pressures and Temperatures
6	Airspeed
7	Attitude Indicator
8	Altimeter
9	Port Engine RPM
10	Centre Engine RPM
11	Starboard Engine RPM
12	Radio Compass
13	Turn and Slip Indicator
14	Horizontal Situation Indicator
15	Vertical Speed Indicator
16	Port Engine Manifold Pressure
17	Centre Engine Manifold Pressure
18	Starboard Engine Manifold Pressure

Centre Instrument Panel

1	Port Engine Cylinder Temperature
2	Centre Engine Cylinder Temperature
3	Starboard Engine Cylinder Temperature
4	Port Carburettor Temperature
5	Centre Carburettor Temperature
6	Starboard Carburettor Temperature
7	Chronometer
8	AS330 Transponder
9	Airspeed
10	Turn and Slip Indicator
11	Attitude Indicator
12	Directional Gyro Indicator
13	Altitude
14	Vertical Speed Indicator
15	Gyro Suction
16	Gyro Suction

Centre Upper Console

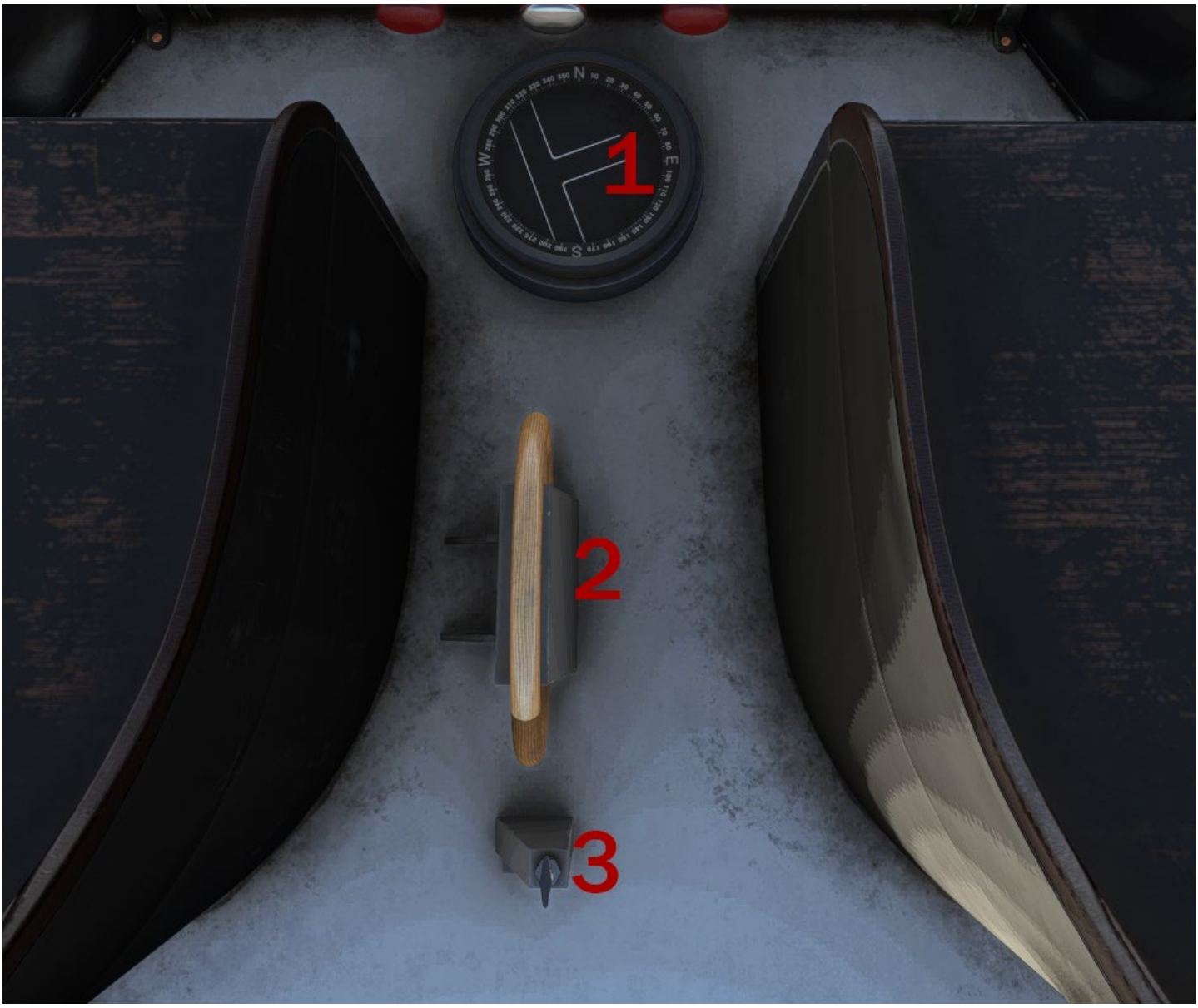


1	Elevator Trim Indicator
2	Rudder Trim Indicator
3	Rudder Trim Switch
4	Inop
5	Port Engine Carby Heat
6	Centre Engine Carby Heat
7	Starboard Engine Carby Heat

Centre Lower Console

1	Port Engine Fuel Cutoff Lever
2	Centre Engine Fuel Cutoff Lever
3	Starboard Engine Fuel Cutoff Lever

Floor



1	Magnetic Compass
2	Elevator Trim
3	Inop

Operational limitations

F.VIIa/1M

WEIGHT LIMITATIONS

Maximum Take-off Weight
3,500kg

CENTRE OF GRAVITY LIMITATIONS

FORWARD LIMIT 400 mm aft of datum
REAR LIMIT 600 mm aft of datum
The datum is the centre line of the wing front spar.

SPEED LIMITATIONS

STALL SPEED	(VS)	61 Kmph
MAXIMUM SPEED	(VNE)	231 Kmph
MANOEVRE SPEED	(VNO)	185 Kmph
MINIMUM AIR CONTROL SPEED	(Vmca)	65 Kpmh

F.VIIb/3M

WEIGHT LIMITATIONS

Maximum Take-off Weight
5,300 kg

CENTRE OF GRAVITY LIMITATIONS

FORWARD LIMIT 400 mm aft of datum
REAR LIMIT 600 mm aft of datum
The datum is the centre line of the wing front spar.

SPEED LIMITATIONS

STALL SPEED	(VS)	81 Kmph
MAXIMUM SPEED	(VNE)	246 Kmph
MANOEVRE SPEED	(VNO)	213 Kmph
MINIMUM AIR CONTROL SPEED	(Vmca)	98 Kmph

F.VIIb/3M Retrofit

WEIGHT LIMITATIONS

Maximum Take-off Weight
5,700 kg

CENTRE OF GRAVITY LIMITATIONS

FORWARD LIMIT 400 mm aft of datum
REAR LIMIT 600 mm aft of datum
The datum is the centre line of the wing front spar.

SPEED LIMITATIONS

STALL SPEED	(VS)	44 Kts
MAXIMUM SPEED	(VNE)	109 Kts
MANOEVRE SPEED	(VNO)	84 Kts
MINIMUM AIR CONTROL SPEED	(Vmca)	35 Kts

Start-Up

The aircraft can be started up using the in-game Checklists or by using the Quick Reference Cards below.

Alternatively you can quick-start the aircraft by pressing Ctrl+E on the keyboard.

Taxiing

The F.VIIa/1m and F.VIIb/3m Southern Cross Original have a tail skid, no toe brakes and limited maneuverability whilst taxing. It is therefore recommended to start at the end of a long grass runway.

The F.VIIb Modern Retrofit planes have toe brakes and a free castoring tail wheel.

To enable the free castoring wheel it is required to push the control yoke fully forward during taxi procedures.

Take off

After the run up and appropriate Pre-Take-off checks, briefing has been completed and the ATC clearance obtained line up the aircraft on the center line of the runway as near to the end of the usable length as possible.

With the left hand holding the yoke hard back, open the throttles smoothly
and continuously to the full forward position for maximum power, approx. 28” HG 2200 RPM.

After 25 knots / 46 kmph the yoke is pushed forward to lift the tail so that the aircraft is in a level or slightly nose down attitude with the rudder in the slipstream.

At 55 knots /102 kmph the Captain will remove their right hand from the throttles to the yoke and rotate the aircraft to lift off.

Gently adjust attitude to allow the speed to build up to the climb speed of 70kts / 130 kpmh, when power can be reduced to climb power.

Climb

Normal climb speed is 70 kts / 130 kmph indicated air speed (IAS).

Turn onto course should not be initiated below 500 feet. Turns must be carefully coordinated with rudder leading into the turn because of the severe aileron drag. Turbulence will affect air speed but maintain a constant attitude rather than chasing air speed.

Cruise

On reaching the assigned altitude, level out and allow the speed to increase to the cruise speed (approx. 80 kts / 148 kmph IAS) before setting up the appropriate power setting – 21.5" HG or less and RPM between 2000 and 1850 RPM.

Decent

Descent from the cruise altitude should be planned 300 – 500 feet per minute to arrive in the circuit area at 1500 feet above aerodrome level (or as per local aerodrome requirements).

This continuous straight-in descent may not always be possible due to terrain clearance and/or ATC.

Power not less than minimum RPM should normally be set. Keep a check on cylinder head temperatures (CHT's) particularly in cold weather. An increase in power or slower speed will reduce cooling but upset the planned descent profile.

Circuit Approach and Landing

Approaching the circuit, the Approach checks should be called. At non-controlled airfields, due to possible light aircraft operation, it is required that all aircraft will join the circuit, for the landing direction in use, at some point before the downwind turn onto the base leg, at 1000 feet above the aerodrome altitude.

On down-wind leg, complete pre-landing checks. The turn onto base leg is commenced when the engine rear support strut passes the threshold of the runway. Reduce power to 12-15" HG. The pitch controls can then be moved fully forward to Full Increase. The RPM will be about 1500 RPM and maintain speed at 70kts / 130kmph. The turn onto final should be at 500 feet and on lining up on the runway complete the final checks and aim to cross the threshold at 60 – 65k / 111 – 120kpmh IAS.

Without flaps, the approach is relatively flat and the aircraft is put on to the runway with a slight flare coordinated with power being reduced to idle in a “wheeler” type landing. After the wheels are on the ground hold the aircraft in a level or slightly nose down attitude. Do not apply brakes until the speed has fallen below 45k / 83 kmph IAS when slight braking can be employed to hold the aircraft in the level attitude. Below 30k / 55 kmph IAS the tail can be lowered gently to the runway. If the brakes are applied too early, when the wing is taking most of the weight, the tires could be badly scuffed and the plane could pitch forward causing a prop-strike on the ground. If the tail is lowered quickly or at too high a speed the wing will regain lift and the aircraft could become airborne again.

Credits

This aircraft has been lovingly created by a multi-cultured international team of experts, enthusiast and friends.

We hope you enjoy it!

Art Director: Marcus Nyberg

Project Management: Ellise Christopher

Art Team:

Sebastian Darrell

Rob Brindley

Smit Parmer

Aaron Grieve McGuirk

Karl Høybye

Nawfal Benbennasser

Russ White

Flight Model and Systems Model:

Daniel Dunn

Mitchell Williamson

Sounds by Dynamedion with assistance from Sam Packer at Orbx

We would also like to thank our tireless QA and Testing team across the Globe.

Pre-Flight Inspection

Battery Switch ..... Off
Fuel Valves ..... Closed
Mixture ..... Lean
Magneto ..... Off
Fuel Pumps ..... Off
Engine Master ..... Off

Before Starting Engine

Doors ..... Closed and locked
Battery Switch ..... On
Flight Controls ..... Free and Correct Movement

Starting Engine

Magneto ..... Both
Mixture ..... Rich
Fuel Valves ..... Open
Fuel pumps ..... On
Throttle ..... Open ½ inch
Engine Master ..... On
Propeller area ..... Clear
Primer ..... Hold for 20 seconds on a cold day
Engine Starter ..... On
Engine gauges ..... Check within limits

Normal Take Off & Climb

Flight Controls ..... Free and Correct Movement
Throttle ..... Advance
Manifold Pressure ..... 24 InHG
RPM 2050
Rotation ..... Greater than 112 KMPH
Carb Heat ..... As Required

Cruise

Flight instruments ..... Check
Manifold Pressure ..... 21.5 InHG
RPM ..... Between 1850 and 2000
Carb Heat ..... As Required

Descent

Throttle ..... As required
VNE ..... 250 KMPH

Normal Landing & Roll Out

Threshold ..... 120 KMPH
Touchdown ..... Greater than 111 KMPH
Control Yoke ..... Aft less than 60 KMPH
Throttles ..... Idle
Tail Skid ..... Contact with the ground to allow for slowing and stopping

After Landing & Shutdown

Throttle ..... Run the engine up to 1400RPM for 20 seconds
Throttle ..... Idle
Mixture ..... Lean
Magneto ..... Off
Engine Master ..... Off
Fuel Pumps / Fuel Valves ..... Off
Battery Switch ..... Off

Pre-Flight Inspection

Fuel Valves ..... On the Back Wall, All Closed
Fuel Pumps..... On the Back Wall, All Off
Battery..... Off
Engine master switches 1,2,3 ..... Off
Magnetos 1,2,3 ..... Off
Throttles..... Idle

Before Starting Engine

Doors..... Closed and locked
Flight Controls..... Free and Correct Movement
Battery..... On

Fuel Panel (Back Wall)

Fuel Valves ..... All On
Fuel Pumps..... All On

Starting Engines

> Engine 3 Start - Starboard

Magneto 3 (Starboard) ..... Both
Engine 3 Master (Starboard)..... On

Starboard Fuel Pump (back wall)..... On
Throttle ..... Open ½ inch
Engine 3 Prime ..... Approx. 20 seconds on a cold day
Propeller area..... Clear
Starboard propeller (start engine)..... Click Propeller
Engine gauges ..... Check within limits

> Engine 2 Start - Centre

Magneto 2 (Centre)..... Both
Engine 2 Master (Centre) ..... On
Centre Fuel Pump (back wall) ..... On
Throttle..... Open ½ inch
Engine 2 Prime ..... Approx. 20 seconds on a cold day
Propeller area..... Clear
Centre propeller (start engine) ..... Click Propeller
Engine gauges..... Check within limits

> Engine 1 Start - Port

Magneto 1 (Port)..... Both
Engine 1 Master (Port) ..... On
Port Fuel Pump (back wall) ..... On
Throttle..... Open ½ inch
Engine 1 Prime ..... Approx. 20 seconds on a cold day
Propeller area..... Clear
Port propeller (start engine) ..... Click Propeller
Engine gauges..... Check within limits

Engine Run Up

Doors ..... Closed and locked
Control Yoke ..... Fully Aft
Engine 3 Throttle ..... Advance until 2500RPM
Magneto 3 ..... Set to Right
RPM Indicator ..... Check for decrease in RPM <90
Magneto 3 ..... Set to Both
RPM Indicator ..... Check stabilised
Magneto 3 ..... Set to Left
RPM Indicator ..... Check for decrease in RPM <90
Magneto 3 ..... Set to Both
RPM Indicator ..... Check stabilised
Throttle ..... Idle
Control Yoke ..... Centre
Engine temperatures ..... Check within limits

Repeat Procedure for Engine 2 (Centre) and Engine 1 (Port)

Normal Take Off & Climb

Flight Controls ..... Free and Correct Movement
Throttles ..... Advance
RPM 2050
Rotation ..... Greater than 112 KMPH

Cruise

Flight instruments ..... Check
RPM ..... Between 1850 and 2000

Descent

Throttle ..... As required
VNE ..... 250 KMPH

Normal Landing & Roll Out

Threshold ..... 120 KMPH
Touchdown ..... Greater than 111 KMPH
Control Yoke ..... Aft less than 60 KMPH
Throttles ..... Idle
Tail Skid ..... Contact with the ground to allow for slowing and stopping

After Landing & Shutdown

Chocks (Parking Brake) ..... Set once come to a full stop
Throttle ..... Run the engine ups to 1400RPM for 20 seconds
Throttles ..... Idle
Magnetos 1, 2, 3 ..... Off
Engine master switches 1,2,3 ..... Off
Battery ..... Off
Fuel Pumps ..... On the Back Wall, All Off
Fuel Valves ..... On the Back Wall, All Closed

Pre-Flight Inspection

Parking Brake.....Set
Battery.....Off
Alternators ..... Both Off
Strobe Light Switch (Beacon).....Off
Nav Light.....Off
Pitot Heat .....Off
Magnetos .....All Off
Fuel Boost Pumps .....All Off
Engine Master Switches .....All Off
Radio / Inst Master .....Off
Throttles .....All Idle
Mixture..... All Lean
Prop Pitch Levers .....All Aft
Fuel Valves..... All Closed
Carby Heat.....All Off

Before Starting Engine

Parking Brake.....Set
Doors..... Closed and locked
Flight Controls.....Free and Correct Movement
Battery.....On
Alternators .....Both On
Strobe Light Switch (Beacon).....On
Fuel Valves..... All Open
Carby Heat.....All Off
Throttles .....All Idle
Mixture..... All Lean
Prop Pitch Levers .....All Aft

Starting Engines

> Engine 3 Start - Starboard

Engine 3 Master Switch .....On
Engine 3 Magneto (Starboard) .....Both
Engine 3 Fuel Boost Pump .....On
Engine 3 Prime .....Approx. 20 seconds on a cold day
Engine 3 Throttle..... Open ½ inch
Engine 3 Mixture.....Rich
Engine 3 Prop Pitch Lever ..... Fully Forward
Propeller area ..... Clear
Engine 3 Start.....On
Engine 3 Gauges..... Check within limits
Throttle 3 .....Idle

> Engine 2 Start - Centre

Engine 2 Master Switch .....On
Engine 2 Magneto (Centre) .....Both
Engine 2 Fuel Boost Pump .....On
Engine 2 Prime .....Approx. 20 seconds on a cold day
Engine 2 Throttle..... Open ½ inch
Engine 2 Mixture.....Rich
Engine 2 Prop Pitch Lever ..... Fully Forward
Propeller area ..... Clear
Engine 2 Start.....On
Engine 2 Gauges..... Check within limits
Throttle 2 .....Idle

> Engine 1 Start - Port

Engine 1 Master Switch ..... On
Engine 1 Magneto (Port) ..... Both
Engine 1 Fuel Boost Pump ..... On
Engine 1 Prime ..... Approx. 20 seconds on a cold day
Engine 1 Throttle ..... Open ½ inch
Engine 1 Mixture ..... Rich
Engine 1 Prop Pitch Lever ..... Fully Forward
Propeller area ..... Clear
Engine 1 Start ..... On
Engine 1 Gauges ..... Check within limits
Throttle 1 ..... Idle

After Engine Start

Alternators ..... Check Both On
Radio / Inst Master ..... On
Transponder ..... On
Radios ..... On

Taxiing

Parking Brake ..... Off
Control Yoke ..... Fully Aft
Throttles ..... Advance 10%
Toe Brake ..... Check After Movement
Control Yoke ..... Fully Forward During Taxi
Throttles ..... As Required

Engine Run Up

Position Aircraft ..... Into Wind
Parking Brake ..... Set
Doors ..... Closed and locked
Control Yoke ..... Fully Aft
Engine 3 Throttle ..... Advance until 2500RPM
Magneto 3 ..... Set to Right
RPM Indicator ..... Check for decrease in RPM <90
Magneto 3 ..... Set to Both
RPM Indicator ..... Check stabilised
Magneto 3 ..... Set to Left
RPM Indicator ..... Check for decrease in RPM <90
Magneto 3 ..... Set to Both
RPM Indicator ..... Check stabilised
Prop 3 Lever Cycling ..... Fully Aft
Oil Pressure Gauge ..... Check for Pressure Decrease
RPM Gauge ..... Check for RPM Decrease
Prop 3 Lever ..... Fully Forward
Throttle ..... Idle
Control Yoke ..... Centre
Engine temperatures ..... Check within limits

Repeat Procedure for Engine 2 (Centre) and Engine 1 (Port)

Normal Take Off & Climb

Radios ..... Set
Transponder ..... Set
Nav Light ..... On
Pitot Heat ..... On
Flight Controls ..... Free and Correct Movement

Control Yoke ..... Centred
Rudder Trim ..... Half Right
Elevator Trim ..... Set as Required
Parking Brake ..... Release
Throttles ..... Advance
RPM 2050
Rotation ..... Greater than 60 KIAS

Climb

Manifold Pressure ..... 24 InHG
RPM 2050
Carby Heat ..... As Required

Cruise

Flight instruments ..... Check
Manifold Pressure ..... 21.5 InHG or Less
RPM ..... Between 1850 and 2000
Fuel Boost Pumps ..... Off
Carby Heat ..... As Required

Descent & Approach

Fuel Boost Pumps ..... On
Throttle ..... As required
Prop Levers ..... Fully Forward
Approach Speed ..... 70 KIAS
Trims ..... Set as Required
Carby Heat ..... As Required

Normal Landing & Roll Out

Threshold ..... 60 KIAS
Aim for 3 point landing ..... Tail Low Attitude
Touchdown ..... 55 KIAS
Stall Speed (VS1) ..... 45 KIAS
Throttles ..... Idle
Control Yoke ..... Fully Aft less than 32 KIAS
Tail Wheel ..... Contact with the ground
Toe Brakes ..... Gentle Pressure Applied

Taxiing Back

Parking Brake ..... Off
Control Yoke ..... Fully Forward During Taxi
Throttles ..... As Required
Fuel Boost Pumps ..... Off
Nav Lights ..... Off
Pitot Heat ..... Off
Carby Heat ..... Off

After Landing & Shutdown

Parking Brake ..... Set once come to a full stop
Throttle ..... Run the engine up to 1400RPM for 20 seconds
Throttles ..... Idle
Magnetos 1, 2, 3 ..... Off
Mixtures 1,2,3 ..... Lean
Prop Levers 1,2,3 ..... Fully Aft
Radio / Inst Master ..... Off
Engine Master Switches ..... All Off
Strobe Light Switch (Beacon) ..... Off
Alternators ..... Both Off
Battery ..... Off