Flight Replicas

DH.83
Fox Moth

For Microsoft Flight Simulator (MSFS 2020)

To get full enjoyment of the aircraft in this package, please read this Manual thoroughly and carefully.

The manual and models in this package must not be used for real flight training purposes.

HISTORY:

The **DH.83 Fox Moth** was a successful small biplane passenger aircraft from the 1930s powered by a single de Havilland Gipsy Major I in-line inverted engine, manufactured by the de Havilland Aircraft Company.

The aircraft was designed late in 1931 as a low cost and economical light passenger aircraft. Many components including the engine, tailplane, fin, rudder and wings were essentially identical to those being used for the de Havilland DH.82 Tiger Moth then being built in large quantities as a military trainer. These were fitted to the purpose-built wooden, plywood-covered fuselage (longerons: ash forward of the pilot, aft Sitka spruce). The pilot sat in a raised cockpit behind the passenger cabin, which was usually fitted with three seats for short-range hops. The wings could be folded for storage.

The prototype first flew on 29 January 1932, and was sent to Canada, gaining sufficient interest that seven were assembled at the company's Toronto plant. UK based production was shared evenly between sales within the United Kingdom and exports, with 49 aircraft each going onto the British register and being sent overseas. British-based aircraft were mostly used on short-haul joyrides or as feeder flights around the British Isles. The DH.83 Fox Moth was the first aircraft to earn a profit in commercial airline service without subsidies.

Total production of the DH.83/DHC.83C Fox Moth was 153, being 98 in England, two in Australia and 53 in Canada after WWII. A number of different engines were used, including the 130 hp (97 kW) Gipsy IIIA on most British-built aircraft and the 145 hp (108 kW) Gipsy Major 1C on the 53 postwar DH.83C Canadian-built aircraft.

(Wikipedia)

CONTROLS

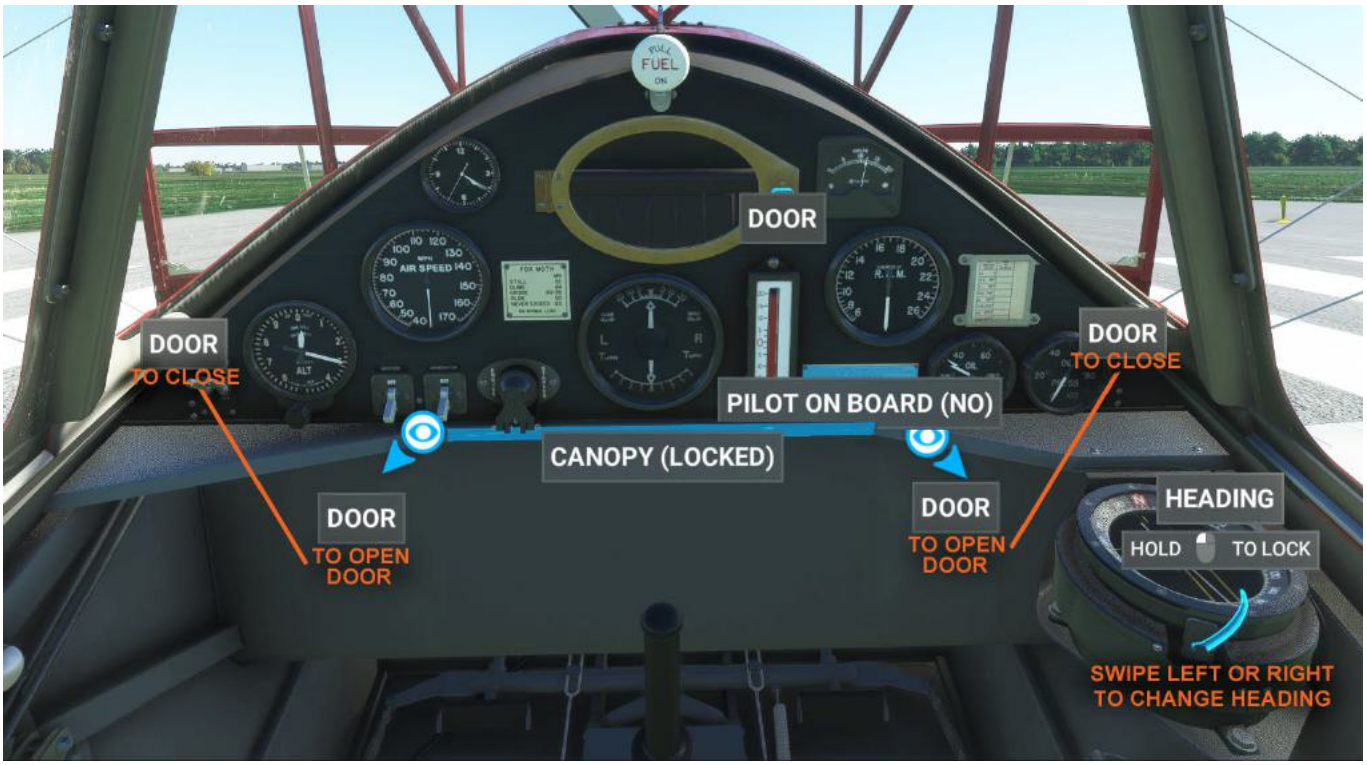
Most Fox Moths did not come with electrical systems or starter, and were ‘hand-propped' to start. All Fox Moths in this package come equipped with electrics and starter, set up as they were on those so equipped, for ease of use.

Equipment and gauges use on Fox Moths differed widely, and while those in this package are accurate models of gauges often used, many Fox Moths will be different.

Fox Moths did not come equipped with radios. Use the MSFS drop-down ATC screen for this.

1. Elevator trim
2. Hand brake
3. Throttle
4. Mixture
5. Magnetos
6. Altimeter
7. Master Battery
8. Alternator (Generator)
9. Starter button
10. Airspeed
11. Clock
12. Turn and slip
13. Door latch
14. Fuel valve on/off
15. Fuel gauge
16. Voltmeter
17. Pitch indicator
18. RPM
19. Oil temperature
20. Oil pressure
21. P8 compass

CLICK SPOTS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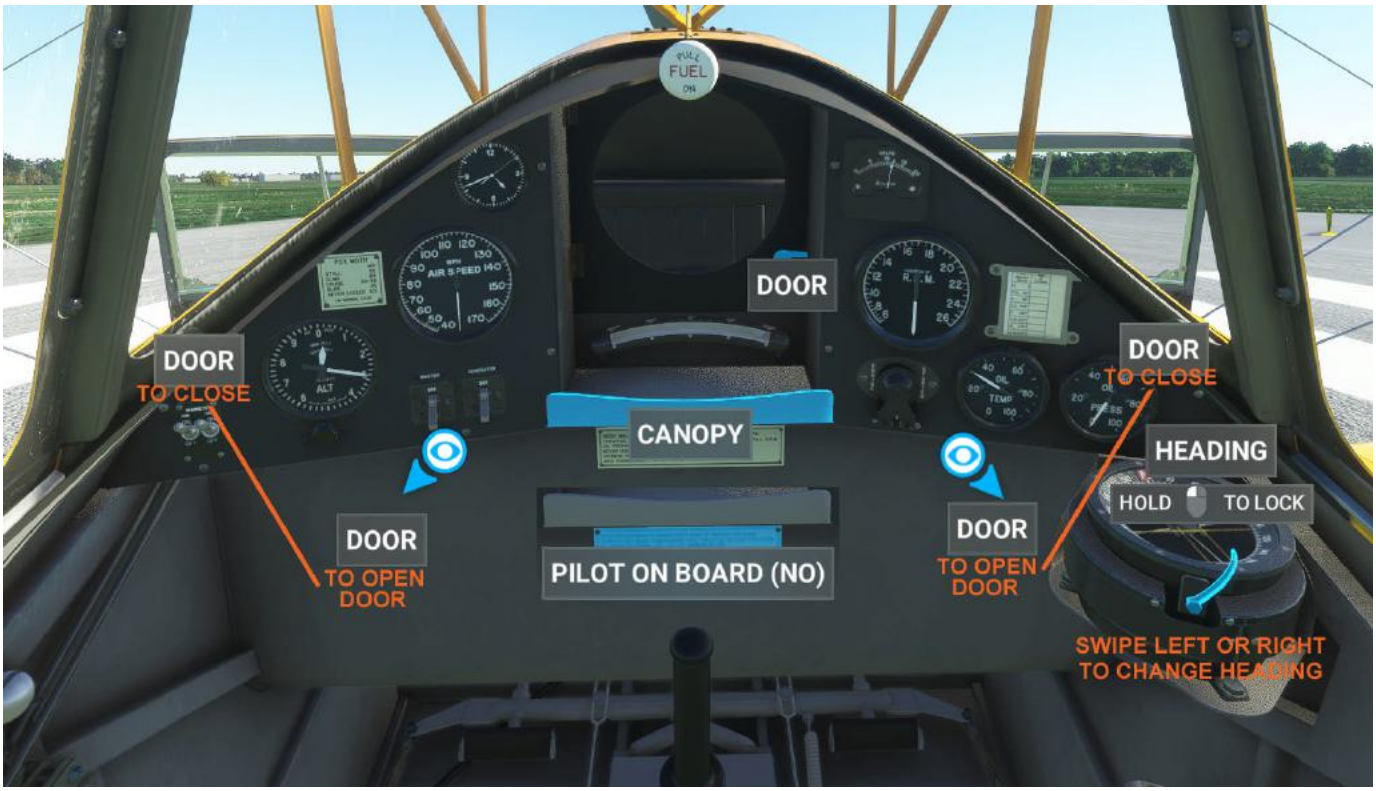
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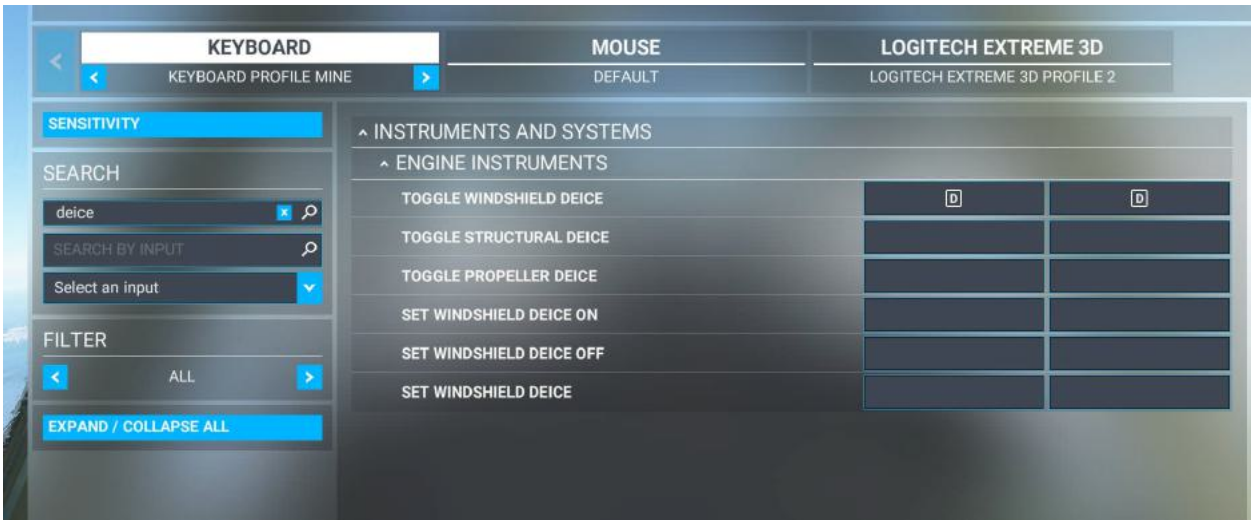
Camera views of the cabin are included via the MSFS drop down menu, but these may not always show. You can slide your viewpoint into the cabin using the MSFS controls.

Windscreen De-Icing

Fox Moths did not have windscreen de-icing. However, as MSFS may coat the canopy with ice when the weather is still flyable, the canopy can be made to de-ice quickly using the setup below.



FLYING THE FOX MOTH

The Fox Moth has minimal instrumentation, and therefore requires a high level of "feel" and thorough knowledge of hands-on piloting. There is no carburetor heat, de-icing or pitot heat. As such, the pilot will have to pay special attention to weather, and the aircraft's environment and attitude, by observing not just the instruments but looking outside of the cockpit as well.

Aerobatics and spins are prohibited.

A. **BEFORE STARTING ENGINE**

1. Make routine check of gasoline supply. The visible fuel gauge is integral part of the fuel tank; it will not show number of gallons, but will show proportion of fuel in tank. A full tank of 25 Imperial Gallons will be indicated by the fuel level rising to top of gauge window.

2. Check freedom of movement of flight and engine controls.

3. Check that passenger doors are fully closed.

B. **STARTING ENGINE**

1. Set brakes in cabin.

2. Set throttle approximately 1/10 open.

4. Pull fuel shut-off knob to ON.

1. Ensure magneto switch BOTH.

2. Battery switch to ON

3. Alternator switch to ON

7. Start engine by pressing the starter button.

C. **ENGINE WARM-UP**

1. As soon as engine starts, advance throttle slightly to idle at 600-800 R.P.M. Check engine instruments. If oil pressure gauge does not indicate pressure within 80 seconds, stop engine immediately, check and correct trouble before any further operation. Oil temperature during operating should not rise above 100°C. and oil pressure should not fall below 30 pounds. With engine warm, idling speed should be 550-600 R.P.M.

2. Rev engine up to 2100 R.P.M. on both magnetos. Switch to LEFT and RIGHT magnetos. R.P.M. drop should not be over 75 R.P.M.

CAUTION—Do not operate engine on either single magneto for more than 30 seconds at a time, as this tends to foul the non-operating spark plugs in the ignition circuit of the magneto that is switched off.

D. **TAXIING**

1. Open throttle to start airplane in motion; then close throttle to a setting sufficient to keep ‘airplane rolling. Do not keep throttle advanced so that it is necessary to control taxi speed of airplane with brakes. This causes unnecessary wear and tear on brake and tires.

2. Taxi slowly (speed of a fast walk) controlling direction with rudder. There is no steerable tail wheel, so remain vigilant in a crosswind. Use brakes only for positive, precision ground control when necessary.

3. Taxi upwind with stick back, downwind with stick forward. When ground winds are in excess of 15 M.P.H., turn into wind using ailerons in direction of turn; apply ailerons away from the turn when turning down wind. This procedure helps to prevent the wind “picking up” a wing during windy, gusty conditions. Always make ground turns slowly.

E. **GENERAL FLYING**

1. For takeoff use full throttle, headed into wind. Airplane at max take-off weight will become air-borne at approximately 50 M.P.H. Tail will rise before then, but hold on ground until then. Best climb speed is at an indicated 66 M.P.H., but check placard for your particular aircraft.

2. Indicated R.P.M. for cruising speed of 94 M.P.H. is 1800-1900 depending on conditions. Take-off R.P.M. is 2350 (for this version of Gipsy Major). Do not fly at full throttle over 3 minutes

3. If engine runs “rough” and tachometer shows drop in R.P.M., this may be due to ice forming in carburetor

4. Maximum permissible diving speed is 125 M.P.H.

5. Propellers may have very slight and unavoidable differences due to manufacture or climatic conditions which can cause the RPM to vary above or below standard.

F. **APPROACH AND LANDING**

1. Glide between 60-70 M.P.H. depending upon loading of airplane and gust conditions.

2. “Clear” engine by opening throttle gently, every 200-250 feet of descent during along glide so that engine temperature will be maintained. Throttle action on the part of the pilot should be smooth and gentle at all times.

3. The aircraft will have a tendency to float in ground effect before touching down.

G. **PARKING AND SHUTTING DOWN**

1. After stopping in parking spot, set brakes by pulling brake lever.

2. Idle engine, especially in high temperature operating conditions, for several minutes. It is advisable to switch to each magneto for 30-second intervals to allow gradual cooling of engine. This helps to prevent overheating of spark plug insulators and will lessen tendency for “after-firing.”

3. Mixture to OFF.

4. Turn ignition and fuel OFF.

5. Turn Alternator and Master switches to OFF.

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Excellent YouTube video on flying the Fox Moth (no connection to Flight Replicas). Be sure to give them a 'like' or subscibe!
https://www.youtube.com/watch?v=0_2kPloPljg&list=WL&index=9&t=327s

For Safe Flying:

DO NOT BECOME AIRBORNE WITHOUT CHECKING THE FUEL SUPPLY: It only takes a few minutes to fuel up. It may save you a forced landing.

DO NOT TAXI WITH CARELESSNESS: Taxi slowly and make turns to clear the area in front of the nose. Know the proper use of the controls for taxiing in a strong wind.

OBEY AIR TRAFFIC RULES: Keep a constant lookout for other aircraft. Follow the rules so that pilots of other planes will know what you are going to do.

DO NOT MAKE FLAT TURNS: This is particularly important when making power-off turns. The Fox Moth will require rudder.

MAINTAIN SPEED: Don't be fooled by the increase in ground speed resulting from a down wind turn. Keep sufficient airspeed.

DO NOT LET YOUR CONFIDENCE EXCEED YOUR ABILITY: Don't attempt instrument flying in adverse weather conditions unless you have the proper training and the necessary instruments. Instrument flying is a highly developed science. Don't pioneer.

MAKE USE OF THE CARBURETOR HEATER: The carburetor heater is your friend. Know when to use it. Remember that it's easier to prevent ice in the carburetor than to eliminate it after it has formed.

DO NOT PERFORM AEROBATICS AT LOW ALTITUDES: Aerobatics started near the ground may be completed six feet under the ground. There's safety in altitude.

DO NOT ALLOW INDECISION IN YOUR JUDGMENT: Be certain! You can't afford to make errors of judgment. "I think I can make it" is on the list of famous last words.

THE GOOD PILOT IS THE SAFE PILOT: It's better to be an old pilot than a bold pilot.

A big “thank you!" to everyone that helped with this first aircraft for MSFS, especially to Ron (DA40CGDFQ) and Bill (lionheart) over at the FS Think Tank discord forum. Bill, aka Lionheart Creations Ltd., deserves extra mention for his tireless patience with my endless questions. You can find Bill’s work here: http://lionheartsimulations.com/ .

Support:

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