

Percival Q6 Petrel

For FS 2004

(Will Port Over to FSX with some exceptions)



Brief description & Operating instructions.

Designed as a six/seven seater passenger aircraft in 1936, it first flew in September 1937, and was available with either a fixed or a retractable undercarriage. Powered in the prototype with Gipsy Six engines driving two position variable pitch propellers, the subsequent production aircraft had constant speed variable pitch propellers.

26 aircraft were built, of which 4 had retractable undercarriages.

The Q4 was a proposal for a 4/5 seater powered with Gipsy Majors, but never came to fruition.

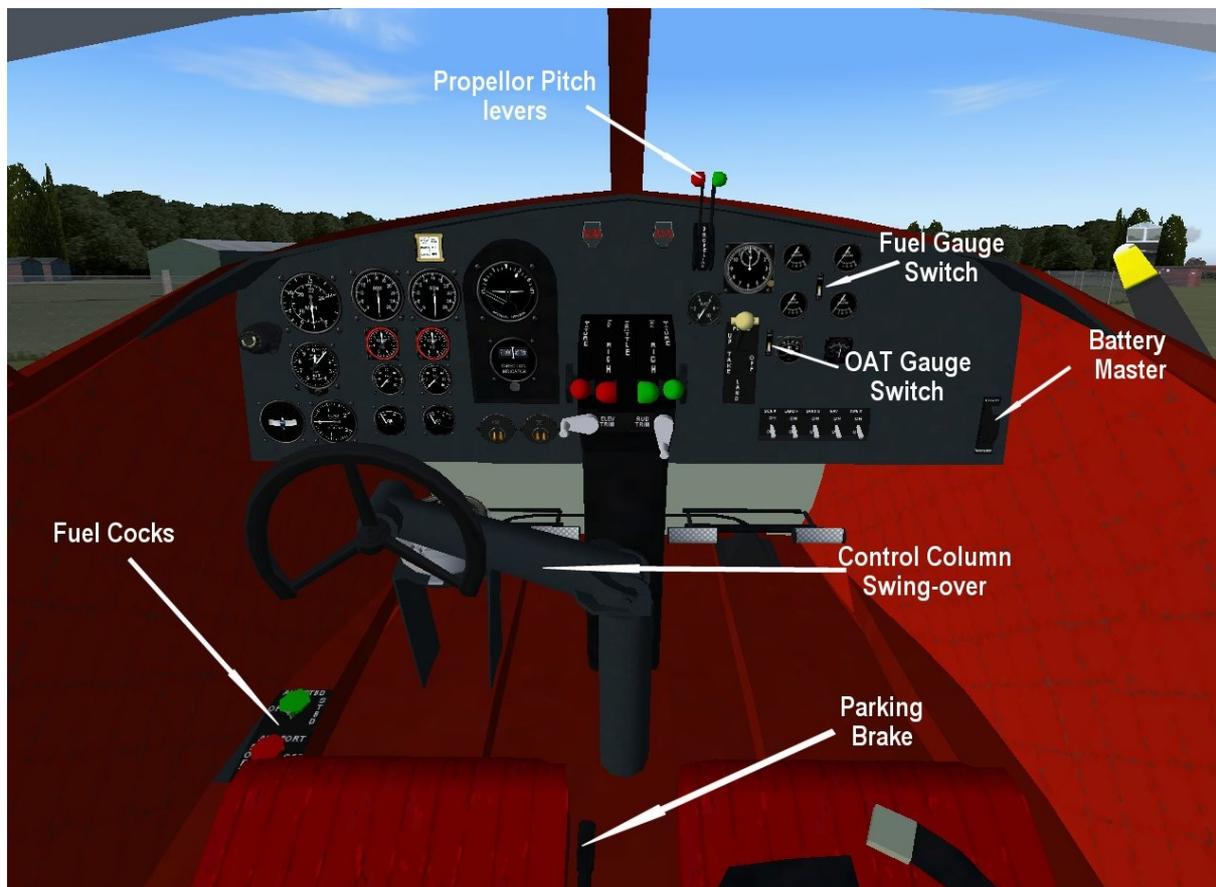
The flaps & undercarriage retraction operation was by a vacuum system driven from each engine.

Construction was of wood & fabric following the Percival standard, very similar to the Vega Gull/Proctor except that the wings & tailplane were plywood covered.

This version covers the fixed undercarriage first production aircraft that is under reconstruction. Few details are readily available of the interior, so a certain amount of educated guesswork has had to be applied.

SOUND. This has been aliased to the FS9 DH 88 Comet, so for FSX users one must either alias the sound to the Beech Baron 58 or transfer/download the FS9 Comet sound.

Cockpit & Controls



I have tried to create the cockpit layout as was common practice by Percival at the time, in that the Sperry gyroscope

instruments (artificial Horizon & Direction Gyro compass) were mounted in a separate shock absorbing housing.

The Flap control lever is conjecture as it is not clear from photos of later aircraft what the control looked like.

The Control column will swing over to the Co-pilots position;-

In the VC, right click on the column for it to swing over to the co-pilot & the viewpoint will also change. To return to the Pilots position Left click on the control column. (Not fully compatible in FSX, so in addition one must select the Co-Pilots camera view & vice versa.)

In the 2D view click on the top Left hand Icon to change viewpoint.

(It is best if one starts off in the VC as the 2D view will then stay co-ordinated & in sync).

General.

Two versions are available for each texture type, one where the interior occupants are visible internally from the VC, & one where they are only visible externally, although see below for Pilot & passenger removal/addition. I hope their titles in the opening screen are self explanatory!

The pilot can be removed from the external view using SHIFT+W (Water Rudder).

The passengers & baggage can be removed or added by opening the Aircraft menu & then the fuel & payload menu, & deleting or adding their weight. This automatically moves the C of G position.

Main door is opened/closed using SHIFT+E

The Pilots DV widow can be opened/closed using SHIFT+E+2, or in the VC by clicking on the window.

The Baggage door can be opened/closed using SHIFT+E+3.

Engine starting: ensure that the fuel tanks are not at OFF, then press the appropriate starter button. CTRL+E is the alternative. (In FSX this is the only way to start - reason unknown).

FUEL SYSTEM.

The Fuel Cocks in the VC will click change from BOTH to OFF to PORT (or STBD) to AUX if starting the engines using CTRL+E, otherwise BOTH is not normally selectable. The Fuel Cock pop-up has specific areas to select each tank. So if starting using CTRL+E click quickly twice, otherwise engine will stop!

Unfortunately FS9 or FSX will always use fuel from the Aux tanks first regardless of position set!!!

OTHER POP-UPS (Click on the appropriate Icon label)

A Compass pop-up is provided as is a full Radio set & instruments for those who wish to fly airways with 'modern' equipment, that was not available in the 1930's & 40's.

FLYING CHARACTERISTICS.

(Max airspeed is slightly higher in FSX)

As one would expect, it is a very benign aircraft to handle, with a max level airspeed of about 195 mph.

Max cruise speed of 185 mph is normally achieved with 2100 rpm & -2.5 psi boost @ sea level.

For the most economical speed reduce boost to -3 psi @ 2100 rpm at an altitude of 5000', which should give 185 mph TAS. Max still air range is quoted as 750 statute miles, needing 80 Imp gallons.

RECOMMENDATIONS. (from experience of the sim model as I have not been able to locate any Pilots Notes).

For TAKE-OFF.

Set the Rudder Trim to about 2.6° left. (About 25% in FSX)

Leave the Elevator trim at zero with full load (about +2° in FSX), but set nose up trim for just Pilot & Co-Pilot, & be careful of heavy braking with full fwd C of G, although full up elevator will normally hold the tailwheel on the ground.

CAUTION: A lot of Left rudder is needed during take off to counteract torque effect & it might be necessary to touch the differential brakes depending on the crosswind component.

For a short take off run set flaps to 'Take Off'.

Once airborne raise flaps & above about 140 mph one needs to apply nose down trim with aft C of G, to nose up trim with fwd C of G.

Trim the rudder as required to counteract torque, but note that the amount required depends upon airspeed, & with power off in a glide, quite a lot of adjustment is needed. The reaction is also delayed, so be patient! (To achieve this effect & make it a bit more realistic to fly, I have offset the LH engine & have a hidden 3 galls US in the stbd Aux tank!).

LANDING

Lower flaps to Take Off position at about 110 mph IAS, & adjust trim - more Nose up. When closer to the runway, lower to Full flap at about 90 mph, trimming again nose up. Aim to cross the threshold, at 70 to 75mph (any higher & she floats!) & she stalls at about 58 to 60 mph. (With full flap & fwd C of G one might run out of nose up trim). Rudder trim may also be advised during the glide slope phase.

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V 1.0

Keith Paine 19 Dec 2011.