Short S.45 Solent 4

Modelled for Flight Simulator 2004 by

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Short S.45 Solent

Introduction

The Short Solent was a civilian version of the military Short Seaford maritime patrol flying boat. The Seaford was, in turn, developed as a larger and faster successor to the famous Sunderland, and was, in fact, originally known as the Sunderland IV. The war ended before the Seaford was ready, so only a few were built for the RAF.

The airliner version, the Short Solent, was more successful. A single Seaford was loaned to BOAC for trials in 1946, and this was followed by an order for 12 Solent 2 airliners. In addition, six Seafords built for the RAF were converted to airliners as Solent 3's. The two versions were basically similar, but differed in detail. During trials it was found that the wing floats could be improved, so they were moved outboard and the struts were made stronger. These changes were added to the Solent 2's as modifications, but the Solent 3 had them from the beginning.

The Solents were used to open the 'Springbok' service from England to South Africa in 1948. Flying boats (Hythes, Sandringhams and Solents) played an important role with BOAC in the immediate postwar years, but landplanes like the DC-6 and the Constellation soon made the operation of flying boats uneconomic, so BOAC stopped all flying boat services in 1950, and the Solents were sold to other operators, notably Aquila Airways.

A final version, the Solent 4, was built in 5 examples for TEAL of New Zealand, and they had a longer career connecting New Zealand with a number of pacific islands. The Solent 4 had seats for 45 passengers, and had more powerful engines in improved cowlings. One these aircraft, ZK-AMO 'Aranui' served on the 'Coral route' of TEAL until 1960, and is preserved today in New Zealand. Others were sold to Aquila Airways, and finally ended their days in Portugal.

This package includes three aircraft to fly:

ZK-AML 'Aotearoa II' of TEAL in the original colours of 1949
ZK-AMO 'Aranui' of TEAL ca 1960
G-ANYI 'Awatere' of Aquila Airways (ex. TEAL)

A Solent 3 of BOAC is available as a separate download. Enjoy!

References:

Peter London: British Flying Boats, Sutton Publishing Ltd, 2003.
David Oliver: Flying Boats & Amphibians since 1945, Airlife, 1987

Various Internet sources have been consulted as well. The most important are

http://www.kiwiaircraftimages.com/solent.html with details of the Short Solent 4 ZK-AMO 'Aranui' of TEAL

http://www.teal.co.nz/teal/default.htm - the history of TEAL (Tasman Empire Airways Ltd.). Includes details of the Coral Route.

Using the panel

The main panel

The panel is based on pictures of the Solent 4 cockpit found on http://www.kiwiaircraftimages.com/solent.html.

You can fly this model from the 2D panel or the virtual cockpit; there is very little difference.

The overhead panel includes magneto switches, starter buttons, feathering buttons for the propellers (use only in case of engine failure), the vertical trim indicator and switches for external lights etc.

The main panel includes the basic six instruments for blind flying, a radio compass and an ADF homing indicator. Some gauges are from other FS9 aircraft like the DC-3 or the Lockheed Vega, other gauges are from various freeware sources – please see the readme.txt file for details.

In the middle are the boost (MAP) and RPM gauges, and an autopilot. This is just one of the stock FS9 gauges, but it is true that the Solent had a more modern autopilot than its predecessors such as the Sandringham.

Auxiliary panels

SHIFT+2: Radios

This is the radio panel of the FS9 DC-3. I don't know what the radios of the Solent looked like.

SHIFT+3: The GPS map

You can use the GPS as a convenient real-time map, not for automatic navigation. Think of the GPS map as a substitute for the maps and instructions you would get from your second pilot and the navigator.

SHIFT+4: Throttle quadrant

You'll want to control the engines individually when you wish to turn the Solent on the water. Use the outer engines for this.

SHIFT+5: Engine instruments

This is a subset of the flight engineers panel of the real aircraft.

Flying instructions (Solent 4)

This information is available during your flight, just press F10 to call up the electronic kneeboard, and select the reference tab.

The Solent 4 has four powerful Bristol Hercules 733 engines, each giving 2040 hp for takeoff.

Before Takeoff

Elevator trim 1.5 division up.
Flaps 2 steps down (Press F7 twice).
Navigation lights on. Pitot heat on. Landing lights on. By night: Panel lights on.

Takeoff and initial climb

Full throttle and RPM. Takeoff is easy at approx. 120-125 kts according to weight.

When safely airborne reduce to 45" MAP and 2400 RPM. Let the aircraft accelerate to 145-150 kts and climb initially at 950 fpm (fully loaded). Maintain a climb speed of 145-155 kts.

En route climb

Reduce MAP to 42", 2400 RPM. Adjust climb rate to keep the speed around 150 kts.

Cruise

Economical cruise at full load (81000 lbs): 33" MAP, 2200 RPM.

Economical cruise at lower weights: Reduce throttle gradually to 30" MAP, and then RPM and/or throttle to hold an indicated airspeed of 170 kts.

The service ceiling of the Short Solent 4 was about 17000 ft, but if you carry passengers do not exceed 12000 ft. for more than 30 minutes at a time. The cabin is not pressurized.

Descent and landing

Flight Simulator includes “runways” for flying boats in some parts of the world (particularly in the U.S.A.), but elsewhere you are on your own when landing. Reduce altitude to 1000 ft, and find a suitable place for landing against the wind. Taxi to the shore to let the passengers out. (Press SHIFT +E to open the doors, CTRL+SHIFT+F1 to shut the engines down)

Creating a flying boat flight in Flight Simulator.

FS2004 includes some airports for seaplanes, mostly in the USA, but to create authentic Short Solent flights in other parts of the world, you can do as follows:

1) Find the ordinary airports closest to your point of departure and your destination. Use the flight planner to create a VFR flight plan, and save it.
2) Say 'yes' to let FS2004 move your aircraft to the selected departure airport. This will put your flying boat on the concrete runway!
3) Open map view (select the map icon on the panel, or press ALT+W+M). Move your aircraft to the water using the mouse. Set the altitude to 0 ft.
4) You are ready to taxi and takeoff! Save the flight if you plan to use that point of departure another time.