

DEPARTMENT OF TRANSPORT  
AIR SERVICES  
OTTAWA, CANADA

A-83 Issue 1  
Scottish Aviation  
Twin Pioneer  
Series I  
July 12, 1966

AIRCRAFT TYPE APPROVAL

Manufacturer Scottish Aviation Limited,  
Prestwick Airport,  
Ayrshire, Scotland, U.K.

I Model Twin Pioneer Series I (Transport Category)

Engines 2 Alvis Leonides 514/8A

Fuel 100/130 minimum grade aviation gasoline with  
maximum lead content of 5.5 mls. TEL/Imp. Gal.

Engine Limits

	H.P.	R.P.M.	MP IN. HG.	ALT.
Take-off (5 min.)	530/550	3,000	46	S.L.
Take-off (5 min.)	560	3,000	46	1,750'
Maximum Continuous	480	2,900	42	S.L.
Maximum Continuous	475/495	2,900	42	3,750

Propeller and  
Propeller Limits 2 de Havilland 3 bladed, constant speed propellers,  
Type PD.205/323/1 non-deiced.  
Diameter: 11 feet.

Airspeed Limits (IAS)

V <sub>NE</sub> (Never exceed)	162 knots
V <sub>NO</sub> (Normal operating)	135 knots
V <sub>A</sub> (Manoeuvring)	110 knots
V <sub>FE</sub> (Flaps extended)	90 knots
V <sub>MC</sub> (Minimum control)	60 knots

Maximum Weight 14,000 lb. take-off and landing.

C.G. Range 15.0 to 22.4 inches aft of the datum.  
In cruising flight the forward limit may be  
moved forward to 13.0 inches aft of datum.

Datum A mark on a plate on the port side of the  
fuselage, 180 inches aft of fuselage nose.

Levelling Means 2 external pegs on starboard fuselage frame  
stations 199.65 and 218.5.

Standard Mean Chord Length is 105.1 inches. Leading edge is  
12.8 inches forward of datum.

Minimum Crew One pilot.

Maximum Passengers 18, including crew.

Maximum Baggage

<u>Compartment</u>	<u>Station</u>	<u>Capacity</u>	<u>Floor Loading</u>	<u>C.G.</u>
Nose hold	29 to 90	360 lb.	16 lb/ft <sup>2</sup>	(-120)
Aft cabin hold	315 to 366	800 lb. *	80 lb/ft <sup>2</sup>	(+135)

\* If the toilet compartment is removed, this figure may be increased to 1,000 lb.

Fuel Capacity

(See NOTE 1(b) for data on system fuel and oil)

	<u>Total</u>	<u>Usable</u>	
2 main tanks	90 Imp. Gal. ea.	89 Imp. Gal. ea.	(+28)
2 long range tanks	33 1/3 Imp. Gal. ea.	31 1/2 Imp. Gal. ea.	(+28)

Oil Capacity

(See NOTE 1(b) for data on system fuel and oil)  
 One oil tank per nacelle with an oil capacity of 8 Imperial Gallons usable.  
 Total usable oil: 16 Imperial Gallons.

Maximum Operating Altitude

19,000 feet.

Control Surface Movements

Elevator	30.5°	Up	20.5°	Down
Elevator Trim Tab	10.5°	Up	5° 43'	Down
Rudder	19°	Port	17°	Starboard
Rudder Trim Tab (Center)	18°	Port	18°	Starboard
Rudder Balance Tab (Outboard, right & left)	Gear Ratio		1:1	
Aileron (rigged with 1/2" T.E. Droop in Neutral)	22.5°	Up	22.5°	Down
Aileron Trim Tab (Port Aileron)	13°	Up	13°	Down
Aileron Balance Tab (Port & Starboard)	Gear Ratio		1:1 approx.	
Flaps - Take-off	14 1/2°	Down		
Landing	19 1/2°	Down		

## Serial Nos. Eligible

The United Kingdom Certificate of Airworthiness for Export must be submitted for each individual airplane for which application for certification is made.

## Approval Basis

United Kingdom Ministry of Aviation Certificate of Airworthiness for Export.

British Civil Airworthiness Requirements for Groups C and D of the Normal Category in effect on January 1958.

## Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the aircraft for certification. The required equipment is contained in the Maintenance Schedule of the Twin Pioneer Maintenance Manual, M.M.2-2. In addition, an engine power failure warning system is required.

## NOTE 1

This airplane shall be operated in compliance with the operating limitations specified in the Air Registration Board approved Airplane Flight Manual, Document No. SH. 2.2.

## NOTE 2(a)

Current weight and balance report, including list of equipment included in the certificated empty weight, and loading instructions when necessary, must be in each aircraft at the time of original certification and at all times thereafter, (except in the case of operators having an approved weight control system).

## (b)

"Unusable Fuel and System Oil" and all hydraulic fluid must be included in the certificated empty weight.


Unusable Fuel is that quantity of fuel in the system and in the tanks which is unavailable to the engine under critical flight conditions. The total unusable fuel is 6 Imperial Gallons for the Series I aircraft.

## NOTE 2(b) (Cont'd)

System Oil is that amount of oil required to fill the oil systems and tanks to the tank outlet to the engines. The propeller feathering oil is not considered usable oil and is included in the "system oil". System Oil is 4 Imperial Gallons. The oil tank capacities shown in this Type Approval include only the usable oil for which the tanks are placarded. Dip-stick readings indicate the amount of usable oil.

## NOTE 3

The retirement times of critical parts are listed in the "Twin Pioneer Log Book of Structural Component Fatigue Lives". These values of retirement times or service life cannot be increased without D.O.T. Aeronautical Engineering approval.

  
for (W.M. McLeish),  
Chief Aeronautical Engineer,  
Department of Transport.