FEDERAL AVIATION AGENCY

4A23
Revision 2
Dollar
Solent Mark III

March 4 , 2010

TYPE CERTIFICATE DATA SHEET NO.4A23

This data sheet which is a part of type certificate No. 4A23 prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Civil Air Regulations.

Type Certificate Holder: Dollar Associates, Inc.
311 California St.
San Francisco, California

I - Model Short Brothers and Harland Limited Solent Mark III, approved October 29, 1958.

Engines: 4 Bristol Hercules 637V 14 Cylinder
Two Row Radial Sleeve Valve Engine incorporating a single speed supercharger and torque meter type reduction gear (.444 to 1) *(See NOTE 4.)*

Fuel: 100/130 min. grade aviation gasoline

Engine limits

	HP	RPM	MP (in.Hg.)	Alt.
Maximum continuous at:	1590	2500	43.75	5300
Critical alt. sea level	1525	2500	43.75	S.L.
Takeoff (5 min.) at:	1780	2800	46.25	6500
Critical alt. sea level	1690	2800	46.25	S.L.

Propeller and propeller limits:
4 DeHavilland 4-Blade
(a) PD or DC 108/446/1
(b) PD or DC 108/446/2
Hub 4/4000/6
Blades PPR 1241783A-78-1 and PPR 1941783A-78-1
(See NOTE 5)
Diameter: Not over 153 in., not under 147 in.
Pitch settings at 42 in.sta.:
Feathered 92°, Low 27°

Airspeed limits

Vne (Never exceed)		270 m.p.h. (234 knots)
Vno (Normal operating)		220 m.p.h. (191 knots)
Va (Maneuvering)		180 m.p.h. (156 knots)
Vfe (Flaps extended)	1/3 down	184 m.p.h. (160 knots)
	2/3 down	173 m.p.h. (150 knots)
	Full	162 m.p.h. (141 knots)

C.G. range: (+408.22) (27.0% MAC) to (+417.65) (32.0% MAC)

Datum: 400 in. forward of manufacturer's datum identification metal plate on top surface of hull.

MAC: 188.52 in. Leading edge of MAC at (+396.0)

Leveling means	Leveling lugs in tail cone area.
Maximum weight	76,200 lb. (Takeoff and landing)
Minimum crew	Two - pilot and co-pilot (+228.5)
No. seats	43 (South Pacific Airlines Report No. 14) Strength of compartment floors governs other interior arrangements.

Maximum baggage — 7060 lb. total

Forward hold	3520 lb.	(+128.0)
Bullion hold	1440 lb.	(+163.4)
Lower rear	1200 lb.	(+809.2)
Upper rear	900 lb.	(+858.4)

Fuel capacity — 3168 gal. 12 tanks (6 per wing)

Tank Nos. 1 & 2	418 gal. each	(+406.8)
Tank Nos. 2 & 3	635 gal. each	(+398.3)
Aux. A Tank Nos. 1 & 4	89 gal. each	(+422.0)
Aux. B Tank Nos. 1 & 4	116 gal. each	(+419.0)
Aux. C Tank Nos. 1 & 4	157 gal. each	(+411.2)
Aux. Tank Nos. 2 & 3	169 gal. each	(+462.4)

(See NOTE 6 for draining instructions)

Oil capacity	144 gal. (36 gal./nacelle (+392.8)
Max. operating altitude	None established

Control surface movements

Rudder	Right	14°	Left	14°
Wing flaps				25°
Elevator	Up	17.8°	Down	18.1°
Elevator trim tab	Up	13.5°	Down	13.3°
Elevator anti-balance	Up	9°	Down	9°
Aileron RH	Up	17.5°	Down	17.6°
Aileron LH	Up	17.8°	Down	17.6°
Aileron trim tab RH	Up	8.8°	Down	8.5°
Aileron trim tab LH	Up	9°	Down	9.5°
Aileron servo tab	Up	0°	Down	0°

Serial Nos. eligible	S1295 and all Short Brothers and Harland Limited Solent Mark III Aircraft.

Certification basis

British Civil Airworthiness Requirements in effect on June 11, 1946
plus following CAR 4b requirements in effect on November 12, 1947:
4b.12 Performance, 4b.13 Flight Characteristics
4b.25 Water Loads, 4b.4400 Cooling tests (Hot day)
4b.450 Induction System de-icing
4b-1 Fire Protection (November 1, 1946)
4b-6 Operating Limitations and Information
Type Certificate No. 4A23 issued October 29, 1958
Date of Application for Type Certificate July 16, 1953.

Production basis

None. Prior to original certification of each aircraft an FAA representative must perform a detailed inspection for workmanship, materials, and conformity with the approved technical data, and a check of the flight characteristics.

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. In addition, the following items of equipment are required:

(a) FAA Approved Airplane Flight Manual
(b) Inspection mirror for fire extinguisher system.

NOTE 1. *Current weight and balance report including list of equipment included in 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).*

The certificated empty weight and corresponding center of gravity locations must include system oil of 39.8 lb. (+378) and unusable fuel of 161 lb. (+415) with standard wing fuel tanks.

NOTE 2. *The following placard must be displayed in front of and in clear view of the pilot:*
"THIS AIRPLANE MUST BE OPERATED IN COMPLIANCE WITH THE OPERATING LIMITATIONS OF THE AIRPLANE FLIGHT MANUAL FAA APPROVED SEPTEMBER 25, 1958."

NOTE 3. *Replacement of the wing spars and joining parts will be required at the expiration of the hours of total airplane operation as listed below and at the same hour intervals thereafter:*

Wing Spar Joint	Hours
Outboard front	19,000
Outboard rear	16,000
Inboard front	13,000
Inboard rear	13,000

NOTE 4. *The Bristol Hercules 637V engines must be modified to incorporate stiffer bevel pinion nuts per Bristol Drawing FB156796.*

NOTE 5. *Propeller blades must have the letter "R" stamped on the shank to indicate that the shanks have been cold rolled. Blades not having this identification are not eligible for use.*

NOTE 6. *To assure that all accumulated water in the fuel tanks in each wing will be collected in the fuel sumps, each wing must be in an elevated position (opposite wing float in the water) when the fuel sump for that wing is to be drained and all fuel tank valves must be in the "on" position during this draining.*

Note 7. *A FAA Certificate of Airworthiness is not to be issued until compliance is found to SFAR 88.*

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