FEDERAL AVIATION AGENCY

7A2
Revision 4
Bristol Aircraft
Limited
BRISTOL
Britannia 305

March 2, 2010

TYPE CERTIFICATE DATA SHEET NO. 7A2

This data sheet which is a part of type certificate No. 7A2 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 — Bristol Aircraft Limited
Filton, Bristol, England

I - Bristol Britannia 305 (Transport Category), Approved April 10, 1958

Engines — 4 Bristol Proteus 756 Turbo-propellers

Fuel — Aviation Kerosene to Specifications D. Eng. R.D.2482 Issue 3, (AVTUR/40) and/or D. Eng. R.D.2494 (AVTUR/50) and/or D. Eng. R.D.2488(AVCAT); and/or American Specification MIL-F-5624C (J.P.5); and/or Canadian Specification 3G.P.23B;

OR

Wide-cut Gasoline to Specification D.Eng. R.D.2486 (AVTAG)*, and/or American Specification MIL-F-5264C (J.P.4)*, and/or Canadian Specification 3G.P.22B*.

* When fuel of this type is used the engine controls may require adjustment.

Engine limits

Static Sea Level Ratings

Rating	Shaft Horsepower (S.H.P.)	Jet Thrust (lb.)	Compressor Speed (R.P.M.)	Propeller Speed (R.P.M.)
Maximum takeoff (5 min.)	3,625	1,130	11,900	1,000
Maximum continuous	3,380	1,090	11,725	920

Propeller and propeller limits

4 De Havilland P.D. 202/4N6/2
Diameter 16 ft.
Pitch settings at 72 in. sta.:
Reverse - 15°, Fine +22°, Feathered +85°
Prohibited speed ranges:
On ground 590 to 750 R.P.M.
In flight 530 to 680 R.P.M.

or

4 De Havilland P.D. 208/466/2
Diameter 16 ft.
Pitch settings at 72 in. sta.:
Reverse - 18°, Fine +22°, Feathered +84°
Prohibited speed ranges:
On ground 360 to 560 R.P.M.

Airspeed limits (CAS)	Vne (never exceed)	320 mph (278 knots or Mach.0.65 whichever is the lesser)
	Vno (normal operating)	285 mph (248 knots or Mach.0.60 whichever is the lesser)
	Va (maneuvering)	230 mph (200 knots)
	Vfe (flaps down 0° to 15°)	240 mph (208 knots)
	Vfe (flaps down 15° to 30°)	206 mph (179 knots)
	Vfe (flaps down 30° to 45°)	183 mph (159 knots)
	Vlo (landing gear operation)	206 mph (179 knots)
	Vle (landing gear extended)	206 mph (179 knots)
	Vllo(landing light operation)	189 mph (164 knots)
	Vlle(landing light extended)	240 mph (208 knots)
	Vfdo(fuel dump chute operation)	240 mph (208 knots)
	Vfde(fuel dump chute extended)	240 mph (208 knots)
	Vmc (minimum control)	113 mph (98 knots)

C.G. range — Landing gear retration moment 260,130 in.lb. (moves the C.G. aft)

Limits with Standard Fuel Arrangement

	WEIGHT	FORWARD		AFT	
	Pounds	% S.M.C.	Aft of Datum (ins.)	% S.M.C.	Aft of Datum (ins.)
Takeoff & Landing	89,000 to 110,000	12.0	571.8	24.0 to 27.75	592.9 to 599.5
Takeoff & Landing	110,000 to 120,000	12.0 to 13.1	571.8 to 573.7	27.75 to 29.5	599.5 to 602.6
Takeoff & Landing	120,000 to 165,000	13.1 to 18.0	573.7 to 582.3	29.5	602.6
Takeoff & Landing	165,000 to 175,000	18.0 to 19.5	582.3 to 585.0	29.5	602.6
Enroute	89,000 to 110,000	12.0	571.8	26.2 to 30.5	596.8 to 604.3
Enroute	110,000 to 120,000	12.0 to 13.1	571.8 to 573.7	30.5 to 32.5	604.3 to 607.8
Enroute	120,000 to 165,000	13.1 to 18.0	573.7 to 582.3	32.5	607.8
Enroute	165,000 to 175,000	18.0 to 19.5	582.3 to 585.0		

Datum — Zero moment datum is located on the center line of the aircraft at the lower surface of the nose external skin immediately aft of the front diaphram and is situated 701 inches forward of 80% wing chord. Horizontal arms to the rear of the datum are positive (+). An external datum point is also provided on the lower skin surface at 80% wing chord.

Standard mean chord (S.M.C.)

176.15 inches. The leading edge of the standard mean chord is at +550.62 inches.

Leveling means

Leveling Plate under fuselage floor at Ref. Sta. CF60.75.

Maximum weights

Landing:	135,000 lbs.
Takeoff:	175,000 lbs.
Zero fuel gross weight:	122,000 lbs.
3-engine ferrying:	(see NOTE 3)

Minimum crew

3. Pilot and co-pilot at (118), flight engineer at (143).

Maximum passengers

92. (See approved weight and balance report for actual number and location.)

Maximum baggage

	Volume cu. ft.	Maximum Floor Loading p.s.f.	Capacity lbs.	
Forward hold:	386	75	7,720	(312)
Aft hold:	432	75	8,640	(836)

Fuel capacity

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

	Total	Usable	
2 Inboard wing tanks (Nos. 2 and 3 main)	2006 US gal. ea.	1999.5 US gal. ea.	(590)
2 Outboard wing tanks (Nos. 1 and 4 main)	1856 US gal. ea.	1848.0 US gal. ea.	(614)
2 Transfer tanks	552 US gal. ea.	548.5 US gal. ea.	(646)
1 Center transfer tank	1477 US gal.	1473.0 US gal.	(578)

Oil capacity

(See NOTE 1(b) for data on system fuel and oil)
10.75 US gal. per engine Total oil 43 US gal. (497)

Max. operating altitude

33,800 ft.

Other operating limitations

Aircraft shall be operated in compliance with the operating limitations specified in the A.R.B. approved Airplane Flight Manual.

Control surface movements

Elevator	Up	30°	Down	15°
Elevator:				
Servo-tabs Nos. 2, 3, and 4	Up	15°	Down	25°
Elevator trim-tab No. 1	Up	17 1/2°	Down	22 1/2°
Rudder	Right	16°	Left	16°
Rudder servo-tabs	Right	18°	Left	18°
Aileron	Up	21°	Down	15°
Aileron servo-tabs Nos. 2, 3, 4 and 5	Up	24°	Down	22°
Aileron/rudder interconnecting tab	Up	21°	Down	19°
Flaps		45°	Total angle of travel	

Serial Nos. eligible

12920, 12921, 12922, 12923 and 12924. The United Kingdom Certificate of Airworthiness for export endorsed as noted under "Certification basis" must be submitted for each individual aircraft for which application for certification is made.

Certification basis	CAR 10. Type Certificate No. 7A2, issued April 10, 1958. Date of Application for Type Certificate August 30, 1955. Each aircraft and any replacement parts manufactured in the United Kingdom must be designated as "import" and clearly labeled as such in accordance with CAR 10.30. A U.S. Airworthiness Certificate may be issued on basis of a United Kingdom Certificate of Airworthiness for Export signed by a representative of the Ministry of Transport and Civil Aviation containing the following notation: "The aeroplane covered by this certificate has been examined and found to comply with British Airworthiness Requirements (1951) and the Special Requirements for Britannia notified by the U.S.A. Govenment to the Government of the United Kingdom." (This certifiction equivalent to CAR 4b amended to August 25, 1955 plus Amendments 4b-4, 4b-7 and SR.422 dated August 27, 1957.) Compliance with the ditching requirements has been demonstrated.
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) Stall warning indicator, Western Manufactureing (Reading) Ltd. 4 lbs. (+77)

NOTE 1. (a) 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).

(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 as defined in CAR 4b.416. This unusable fuel includes "system fuel" which is defined as the quantity required to fill the system and tanks to the tank outlet level when the airplane is in the ground level attitude. The fuel gages are calibrated with the unusable fuel level as the zero datum. The total amount of fuel is as follws:

Usable fuel @ 6.75 lb/gal.	Unusable fuel @ 6.75 lb/gal.
10,265 gal.	40 gal.

System Oil is that amount of oil required to fill the oil systems and tanks to the tank outlets to the engines. The propeller feathering oil is not considered usable oil and is included in "System Oil". System oil weight is 594 lbs. The oil tank capacities shown in this specification include only the usable oil for which the tanks are placarded. Dipstick readings indicate the amount of usable oil.

NOTE 2. Information essential to the proper maintenance of the aircraft, including retirement times of the critical parts, is included in the Bristol Aircraft Ltd. Britannia 305 Maintenance and Overhaul Manual, provided with each aircraft.

NOTE 3. Ferry permits may be issued to Britannia Model 305 aircraft on which one engine is inoperative, with its propeller removed or feathered under the follwoing conditions:
Operation of aircraft shall be in accordance with pertinent limitations contained in the applicable portion of the approved Airplane Flight manual, pertinent appendices and existing instructions.

NOTE 4. A FAA Certificate of Airworthiness is not to be issued until compliance is found to SFAR 88.

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