DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A32EU
Revision 3
IAI, LTD
ARAVA 101
ARAVA 101B
July 26, 1988

TYPE CERTIFICATE DATA SHEET NO. A32EU

This data sheet which is a part of Type Certificate No. A32EU prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder — Israel Aircraft Industries Limited,
Ben-Gurion Int'l Airport, Israel

I. Model Arava 101 (FAR 23/FAR 135 Normal Category), Approved April 28, 1972

Engines — 2 United Aircraft of Canada Limited, PT6A-27
Reduction gear ratio: 0.0663:1

Fuel — See NOTE 4

Oil — See NOTE 5

Engine Limits

Rating	ESHP	SHP	Output Shaft RPM %	ITT °C	Gas Gen. RPM %
Takeoff (5 minutes)	715	680	2200 (100)	725	38,100 (101.6)
Max continuous	715	680	2200 (100)	725	38,100 (101.6)
Reverse	-	400	2100 (95.5)	-	33,100 (88)

Propeller — Hartzell

Hub	HC-B3TN-3D
Blades	T10282 HR or T10282 HRB
Diameter	8 ft. 6 in.

* Pitch settings at 30" station

Static

Feather	+87.0°
Flight fine (stop nut)	+19.3°
Reverse	-15.0°

Operating

Flight fine (pitch stop)	+14.5°
Beta warning light	+10.0°

* See CAA Israel - approved Arava 101 Maintenance Manual for Rigging Instructions

Propeller Control Unit — Woodward 8210-002

Propeller Overspeed Governor — Woodward 210631

Airspeed Limits (CAS)	V_{MO} (Maximum operating)	170 knots
	V_{FE} (Flap operating)	105 knots
	V_A (Maneuvering)	136 knots
	V_{MC} (Minimum control)	*60 knots
	* Autofeathering system operative	

C.G. Range

Forward limit FUS, Sta. 5079, 200 inches aft of datum.
Aft limit FUS. Sta. 5288, 208.2 inches aft of datum.

This C.G. Range is applicable for all the A/C weights up to the max. takeoff weight. For all the flight envelope including takeoff and landing.

Empty Weight C.G. Range

None

Maximum Weight

Takeoff	12,500 lb
Landing	12,500 lb
Ramp Weight	12,620 lb

Maximum Operating Altitude

15,000 ft. (except as limited by oxygen requirements of FAR 91 and FAR 135).
Operation with AVGAS 10,000 ft.

Control Surface Movements

Aileron	Up	16.0°	Down	13.4°
Spoiler	Up	40.0°		
Flaps				0° to 25.0°
Elevator	Up	25.0°	Down	10.0°
Elevator Trim Tab	Up	4.0°	Down	20.0°
Rudders	Left	18.0°	Right	18.0°
Rudders Trim Tab	Left	9.0°	Right	3.0°

See CAA Israel - approved Arava 101 Maintenance Manual for Rigging Instructions

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. See IAI Report 4630/4232 for CAA Israel-approved optional equipment.

In addition the following equipment is required:
Stall warning system - Safe Flight -

Summing Unit	P/N C-77606
Flap position transmitter	P/N C-77609
Lift Transducer	P/N C-77607
Stick Shaker	P/N C-77702-2

CAA Israel - approved Airplane Flight Manual, dated April 28, 1972

II. Model Arava 101B (Normal Category), approved November 17, 1980

Model 101B differs from model 101 in having increased maximum T.O.W., L.W., and Z.P.W. for operations in accordance with SFAR 41C, engine changed to PT6A-36.

Engines

2 Pratt & Whitney Aircraft of Canada Limited, PT6A-36
Reduction gear ratio: 0.0663:1

Fuel

See NOTE 4

Oil

See NOTE 5

Engine Limits

Rating	ESHP	SHP	Output Shaft RPM %	ITT °C	Gas Gen RPM %
Takeoff (5 minutes)	783	750	2200 (100)	805	38,100 (101.6)
Max continuous	783	750	2200 (100)*	805	38,100 (101.6)
Reverse	-	400	2100 (95.5)	-	33,750 (90)

* 1980 RPM (90%) maximum for normal operation.

Propeller

Hartzell Propeller Inc.
Hub HC-B3TN-3D
Blades T10282HR or T10282HRB or T10282R or T10282RB
Diameter 102 inches, no reduction allowed
*Pitch settings at 30" station

Static

Feather	+87.0°
Flight fine (stop nut)	+19.3°
Reverse	-15.0°

Operating

Flight fine (pitch stop)	+14.5°
Beta warning light	+10.0°

* See CAA Israel - approved Arava 101B Maintenance Manual for Rigging Instructions.

Propeller Control Unit

Woodward 8210-002

Propeller Overspeed Governor

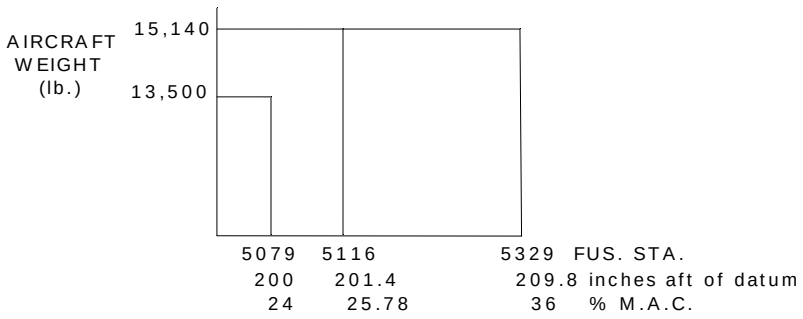
Woodward 210631

Airspeed Limits (CAS)

V_{MO}	(Maximum operating)	170 knots
V_{FE}	(Flap operating)	120 knots
V_A	(Maneuvering)	145 knots
V_{MC}	(Minimum control)	*70 knots

* Autofeathering system operative

C.G. Range



Empty Weight C.G. Range

None

Maximum Weight

Takeoff	15,140 lb
Landing	15,000 lb
Zero Fuel Weight	14,000 lb
Ramp Weight	15,260 lb

Maximum Operating Altitudes

27,000 ft. (except as limited by oxygen requirements of FAR 91 or FAR 135).

Control Surface Movements	Aileron	Up	16.0°	Down	13.4°
	Aileron Trim Tab	Up	10.5°	Down	10.5°
	Spoiler	Up	40.0°		
	Flaps		0° to 25°		
	Elevator	Up	25.0°	Down	10.0°
	Elevator Trim Tab	Up	4.0°	Down	20.0°
	Rudders	Left	18.0°	Right	18.0°
	Rudder Trim Tab	Left	13.0°	Right	7.0°

See CAA Israel - approved Arava 101B Maintenance Manual for Rigging Instructions

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. See IAI Report ARV000/801093 for CAA Israel - approved optional equipment

In addition the following equipment is required:
Stall warning system - Safe Flight-

Summing Unit	P/N C-77606
Flap position transmitter	P/N C-77609
Lift transducer	P/N C-77607
Horn	P/N C-77602

CAA Israel - approved Airplane Flight Manual, dated October 20, 1980, and with Revision 3 for operations in accordance with SFAR 41C.

Approved Installation

See Airplane Flight Manual

III. Data pertinent to all models

Datum

23.6 inches (600 MM) forward of nose, 180.2 inches (4577MM) forward of leading edge

MAC

82.3 inches (2090MM) with L.E. at FUS. STA. 4577

Leveling Means

Longitudinal - Place a level on cabin floor seat rail.
Lateral - Place a level across cabin seat rail.

Minimum Crew

1 pilot

Number of Seats

19 passengers (in the passenger compartment)

Maximum Baggage

550 lb. (75 p.s.f.) between FUS. Stations 7730 and 8840 (304 and 348 in aft of datum)

Fuel Capacity (U.S. Gal.)

Usable - L.H. Tank 202; R.H. Tank 202;
Total - 205.3 per tank (moment ARM 214 in aft of datum)
See NOTE 1 for data on system fuel and oil.

Oil Capacity (U.S. Gal.)

Usable - 1.5 per engine (moment ARM 177.3 in., aft of datum).
Total - 3.0 (moment ARM 174.8 in., aft of datum)
See NOTE 1 for data on system fuel and oil.

Serial Nos. Eligible

See “Import Requirements”

Import Requirements

A U.S. Airworthiness Certificate may be issued on the basis of the Israel CAA “Export Certificate of Airworthiness” signed by a representative of the Civil Aviation Administration of Israel containing the following statement: “The airplane covered by this certificate has been examined, tested and found to conform to the type design approved under Type Certificate No. A32EU, and to be in a condition for safe operation.” (See NOTE 6).

Certification Basis

FAR 21.29, FAR Part 23, effective February 1, 1965.
Including Amendments 23-1 through 23-6, paragraph 23.939 (b) and 23.1141 of FAR 23 Amendment 7, Special Conditions 23-41EU-11 issued May 10, 1972, Compliance has been shown with:

- FAR 25.471 through FAR 25.509, FAR 25.573 and FAR 25.721 through FAR 25.735, effective February 14, 1975 for the Arava 101B

- Appendix A to FAR Part 135 as adopted by Amendment 135-18, effective July 19, 1970 for the Arava 101 and 101B

- SFAR 27, Amendments 27-1 through 27-3 (Fuel Venting) by incorporation of IAI Drawings 101 653-30-00 and 101 653-31-00 for the Arava 101B

- SFAR 41, effective October 17, 1979, and SFAR 41C, effective September 13, 1982 for the Arava 101B

- FAR 36, Amendments 36-1 through 36-9 for the Arava 101B

Compliance has been established with the following optional requirements:

- FAR 25.1191 through FAR 25.1201, effective August 1, 1969, Fire Extinguisher System: Arava 101.

- FAR 23.979, effective December 20, 1973, Pressure Fueling System: Arava 101B.

- FAR 25.1419, effective May 8, 1970, Ice Protection: Arava 101B.

Type Certificate No. A32EU, issued April 28, 1972 for the Arava 101 and amended November 17, 1980 for the Arava 101B.
Effective date of application for Type Certificate per FAR 21.17 (c) (2), August 1, 1969.

Service Information

Israel Aircraft Industries Maintenance and Structural Repair Manuals and all Service Bulletins are approved by CAA Israel and include a statement to that effect.

NOTES

NOTE 1

(a) Current Weight and Balance Report including list of equipment included in certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original certification.

(b) Unusable and System Fuel and Oil and all hydraulic fluid must be included with certificated empty weight.

Unusable fuel is defined by FAR 23.959. The quantity indicators are calibrated to read zero with this amount in the tanks. System fuel includes fuel in lines, and components which is in addition to unusable.

Total airplane unusable fuel is : 6.5 U.S. gal. (ARM 214 in. aft of datum).
Total system fuel (undrainable) is : 1.05 U.S. gal. (ARM 189 in. aft of datum).

System oil includes oil in lines and coolers and undrainable as follows:
Total system unusable is: 1.5 U.S. gal. (ARM 172.3 in. aft of datum).

NOTE 2

All placards required in the limitation section of CAA Israel - approved Airplane Flight Manual must be installed in the appropriate locations. Each individual airplane must be fitted with a placard which specifies approved types of operation (such as VFR, IFR, DAY or NIGHT) to which the airplane is limited by the equipment installed.

NOTE 3

Section II of the Inspection Schedule, Document P/N 101B-181-201 is FAA - approved and it specifies mandatory replacement time and structural inspection intervals for the landing gear and support structure. These airworthiness limitations may not be changed without FAA approval.

Certain engine parts are life limited. These limits are listed in P & WACL Engine Service Bulletin No. 1002.

NOTE 4

Arava 101:
JP-1, JP-4, and JP-5 fuels conforming to Pratt & Whitney Aircraft of Canada Spec. No. CPW 204 and later revisions.

Arava 101B:
JP-1, JP-4, and JP-5 fuels conforming to Pratt & Whitney Aircraft of Canada Spec. No. CPW 204 and later revisions.

For operation at ambient temperatures below 0°C, anti-icing additives conforming to specifications MIL-I-27686D, MIL-I-27686E or Canadian Spec. 3-GP-526A must be used in accordance with the Airplane Flight Manual.

NOTE 5

P & WACL PT6 Engine Service Bulletin No.1001 lists approved brand oils.

Note: Oil conforming to specifications MIL-I-7808 not approved for the Arava 101B.

NOTE 6

For the Model Arava 101B, the United States Airworthiness Certificate shall be endorsed “This airplane at weights in excess of 5,700 kg does not meet the airworthiness requirements of ICAO as prescribed by Annex 8 of the Convention on International Civil Aviation”.

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