

**ATR 42 models****1 -DEFINITION OF MODELS**

The ATR 42 is a short range narrow fuselage trim turbo prop aircraft.

**1.1. -Detailed identification of model****ATR 42-500**

Definition: Note AIRT/C no 425.0000/95

Equipment list: Note AIRT/C no 425.0469/95

**1.2. -Engine**

-2 PRATT and WHITNEY CANADA PW 127 E turbo props or PW 127F after embodiment of Service Bulletin PW N°21589

**1.3. -Propeller**

2 HAMILTON STANDARD 568F-1 propellers

-R 815505-2 or R 815505-3 blades

-diameter: 13 feet

-pitch measured at 58 inches from the center line :

-feathering pitch: 78.5°

-flight idle pitch: 14°

-ground idle pitch: 0°

-reverse pitch: -14°

-take-off rating : 1200 RPM

-maximum continuous rating: 1200 RPM

**1.4. -Maximum weights (kg)**

During taxiing: 18770

At take-off: 18600

At landing: 18300

Without fuel: 16700

**1.5. -CG Range**

See approved Aircraft Flight Manuals.

**1.6. Limit speed (in IAS -unless otherwise specified)****Limited speed (CAS)**

VMO	Maximum operating speed:	250 kt
MMO	Maximum operating Mach n°:	0.55
V A	Design manœuvre speed:	160 kt
VFE	Flaps 15°	170 kt / 180 kt *
	Flaps 25°	160 kt
	Flaps 35°	150 kt
VLO	Landing gear exten/retrac.:	170 kt / 160 kt
VLME	Maximum speed landing gear exten.:	180 kt
Limit tyre speed (Ground Speed):		165 kt

\* with embodiment of modification 4462.

**1.7. -Fuel capacity**

Unusable fuel	Normal refuelling with pre selector (kg)	Usable fuel	
		Refuelling up to high level indication kg	liters
21.2	4500	4550	5 700

**1.8.- Maximum control surface deflection**

	UP	DOWN	UP	DOWN
<b>Aileron</b>				
		$14^{\circ} \pm 0.5^{\circ}$		$14^{\circ} \pm 0.5^{\circ}$
		$14^{\circ} \pm 0.25^{\circ} **$		$14^{\circ} \pm 0.25^{\circ} **$
<b>Aileron trim</b>				
		$4.5^{\circ} \pm 0.4^{\circ}$		$4.5^{\circ} \pm 0.4^{\circ}$
		$6.7^{\circ} \pm 0.4^{\circ} **$		$6.7^{\circ} \pm 0.4^{\circ} **$
<b>Elevator</b>				
		$23^{\circ} + 1^{\circ}$ $+ 0^{\circ}$		$13^{\circ} + 1^{\circ}$ $- 0.6^{\circ}$
<b>Elevator trim</b>		$4^{\circ} \pm 0.3^{\circ}$		$9^{\circ} \pm 0.4^{\circ}$
<b>Rudder:</b>	structural stops (damper removed)		$\pm 31.5^{\circ} + 1.5^{\circ}$ $- 0^{\circ}$	
	stop included in damper		$\pm 30^{\circ} \pm 1^{\circ}$	
<b>Rudder trim:</b>	on either side of the tab		$\pm 16,7 + 0^{\circ}$ $- 3,4^{\circ}$	
<b>Spoilers:</b>	mini : spoiler deflection as from	$2.5^{\circ} \pm 0.5^{\circ}$ aileron / $2.5^{\circ} + 1^{\circ}$ aileron**		$- 0^{\circ}$
	maxi:	$57^{\circ} \pm 2^{\circ} - 0$		
<b>Flaps:</b>	deflections:		$0^{\circ}; 15^{\circ}; 25^{\circ}; 35^{\circ}*$	
	manoeuvre time from $0^{\circ}$ a $35^{\circ}$ :		10s	
	from $35^{\circ}$ a $0^{\circ}$ :		18s	

\* Flaps 35 configuration corresponds to an effective flap deflection of  $33^{\circ}$ .

\*\* ATR 42-500 model with modification 4372 (aileron spring tab)

## 2 -POWERPLANT

### 2.1 -PW 127 E Engine

#### Engine limitations

Engine rating	Time limit	Torque %	ITT (0°C)	NH %	NL %	NP %	Oil pressure (Psi)	Oil temperature (1) (0°C)
Reserve takeoff	10 mn*	100**	800	103.2	104.2	101	55 to 65	0 to 125
Take-off	5 mn	90**	740 to 765	101.9	101.4	101	55 to 65	0 to 125
Maximum continuous	-	100**	800	103.2	104.2	101	55 to 65	0 to 125
Ground idle	-	-	-	66 mini	-	-	40 mini ***	-40 to 125
Hotel mode	-	-	715	-	-	-	55 to 65	0 to 125
Starting	5 sec.	-	950	-	-	-	-	-54 mini
Transient	20 sec.	137.5	840	104.3	106.5	106	40 to 100	-
	5 sec.	-	-	-	***	120	-	-
	20 mn	-	-	-	-	-	-	140

\* Time beyond 5 mn is linked to actual single engine operation only.

\*\* Value linked 100% NP.

\*\*\* Associated with NH ratings lower than 75 %.

\*\*\*\* Permissible for completion of flight provided to does not exceed 85% during climb and 84% during cruise.

( I ) Oil temperature must be maintained above 45° C to ensure protection for the engine air inlet against ice accumulation.

### 2.2 -Approved oils

See engine maintenance manual chapter 72-00-00.

### 2.3 -Fuels

See engine maintenance manual chapter 72-00-00.

### 3 -HYDRAULIC FLUIDS

Specification: HYJET IV or SKYDROL LD 4

Capacity (reservoirs and lines) -liters

-Green system: 11

-Blue system: 11

### 4 -TYRES

	Type	Dimensions	Operative inflation pressure	Manufacturer (P/N)
Main landing gear tyres	Radial	32x8.8R16 12PR 32x8.8R16 12PR	8.7 bar 8.7 bar	GOODYEAR 328Q28-1 GOODYEAR 328Q28-2 (1)
Nose landing gear tyres	Bias	450x190-5	4.4 bar	GOODYEAR 459M08-1 GOODYEAR 459M08-2
(1) After Mod. 4794				

### 5 -MINIMUM FLIGHT CREW

2 pilots.

### 6 -MAXIMUM NUMBER OF PASSENGER SEATS

-60, corresponding to the maximum capacity permitted by the size of the cabin (the maximum number of passengers used for the emergency evacuation demonstration in compliance with JAR 25.803 (c) was 66).

For the approved number of passengers for each aircraft, see the Cabin Layout Catalogue approved by the DOAC (ref. OATR/C 422.057/85).

### 7- MAXIMUM AUTHORIZED ALTITUDE

25 000 ft.

### 8 -CARGO COMPARTMENT LOADING

See Weight and Balance Manual.

## 9 -APPLICABLE TECHNICAL REQUIREMENTS

The applicable technical requirements for ATR 42-500 model form the subject of ATR 42-500 CRI

A01 Issue 4 documents. They are made up of the following requirements :

### 9.1. Mandatory requirements :

**-JAR 25 change 13** including amendments 90/1,91/1 and 93/1 for :  
.25 x 20 to 25 x 261 except for 25.101, .105, .109, .113 and 115  
.25.471 to 25.519.

**-JAR 25 change 8** including amendments 81/2 for :  
.25.301 to 25.459, 25.561 to 25.581.

**-JAR 25 change 11** for :  
.25.601, 25.605 to 25.811, 25.813 to 25.841, 25.851, 25.855 to 25.1588.

**-JAR 25 change 11** including amendment 86/1 and 87/1 for :  
25.365, 25.603, 25.812, 25.843, 25.853 (amendment 86/1)  
.25.571 (e)(2), 25.905 (d) (amendment 87/1).

### **-PLUS, the following A TR 42/72 Special Conditions :**

.B5 " Stick pusher " (CRI B 02)

.B7 " Stall and stall warning speeds and manœuvre capability " (refer to Equivalent Safety Finding)

.B10 "Clever stall warning / Stick Pusher" (refer to CRI B 03)

.O1 " Demonstration of endurance " (issue 00/85- CRI 01)

.D7 " Lightning protection indirect effects " (refer to DGAC letter No. 953202 dated 27 July 95)

.F2 " Low altitude automatic pilot engagement after T ake Off " (refer to OOAC letter No. 953202 dated 27 July 95)

.F3 " Effect of external radiations upon aircraft systems " (refer to DGAC letter No. 953202 dated 27 July 95)

### **-PLUS, the following requirements related to general aircraft experience and applied by the DGAC as an improvement of safety levels :**

.NPA 25F -219 " Flight characteristics in icing conditions " is. 2 (superseding ATR 72 S.C. B6)

.NPA 25DF -179 " Operation without normal electrical power " (as published in O.P. 90/1 )

.NPA 25DF -191 " Miscellaneous requirements " (as published in O.P. 90/1)

.NPA 25D -181 " Resistance to fire terminology " (as published in O.P. 91/1)

.NPA 25D -206 " Emergency exit marking " (as published in O.P.91/1)

.NPA 25D -227 " Compartment interior " (as published in O.P. 93/1)

**-PLUS, for CAT II operation :**  
-JAR AWO Subpart 2, Change 1

**-PLUS, for environmental standard :**

The applicable regulation is French " arrete " dated February 19th, 1987 related to noise limitation certificates relative to propeller power aircraft whose maximum take-off weight is greater than 5700 kg.

The requirements of this " arrete " are identical to those of ICAO, Annex 16, Chapter 3.

## **9.2. On an elect to comply basis :**

**-JAR 25 change 13** for :  
.25.301 to 25 x 1587 except for 25.561, .562, .735, .785, .787.

**-JAR 25 change 12** for :  
.25.561, .562, .785 and .787.

**-NPA 25 BDF 244 dated March 1992** for :  
.25.101, .105, .109, .113, .115, .735 and 25 x 1591.

## **10 -AUTHORIZED OPERATIONS**

10.1- The aircraft is certificated in the Transport Category, for day and night operations in the following conditions when the appropriate equipments and instruments required by the airworthiness and operational regulations are approved, installed and operative :

- instrument and visual flight
- flight in icing conditions

10.2- ATR 42-500 model is certificated for ditching after embodiment of modification 4626. When requested by the operational rules, the life raft must be installed in accordance with the locations defined in document ref 421.0178/96 rev. 2.

10.3 -The aircraft is certificated for Cat. II approaches

- for ATR 42-500 model when modification 1112 is fitted.

10.4 -ATR 42-500 model is certified for 120 mn ETOPS operations (modif 4711) in compliance with the technical requirements of JAA Information Leaflet No. 20 regulation.

10.5- Use of GPS BENDIX/KING KLN 90A as additional navigation system, for instrument and visual flight is defined in modification 3952 (ATR 42-500 model).

Honeywell/Trimble GNSS 1000 (modifications 4654 and 4885) and GPS Bendix/King KLN 90B (4890 and 5022 for ATR 42500) are certified for BRNAV operation in compliance with JAA TGL2 Rev 1 requirements.

## **11 -COMPLIANCE WITH THE CERTIFICATION BASES**

11.1 -Exemptions from compliance: NONE

11.2- Points for which an equivalent level has been justified :

-JAR 25.103, 107, 119, 125, 143 and 207 : stall and stall warning speeds and manreuver capability (l g stall speeds) : see Special Condition B7 and associated CRI B01.

-JAR 25.853 (f) : lavatory - "NO SMOKING" placard (ref. DGAC letter No. 953117 dated July 21, 1995).

-JAR 25.811(e)(3) : "Type III exits handle" (ref. DGAC letter No. 953117 dated July 21, 1995).

## **12 -AIRWORTHINESS LIMITATIONS ASSOCIATED WITH MAINTENANCE**

See the "Time Limits" last issue approved by the DGAC, included in the "Maintenance Planning Document ".

## **13 -OTHER LIMITATIONS**

See the Flight Manual last issue approved by the DGAC.

## **14 -EQUIPMENT**

The pieces of equipment required by the Applicable Technical Requirements must be installed. The pieces of equipment whose installation is approved are listed in the definition of the reference models and of the modifications which are applicable to these models.

Cabin furnishing equipment must comply with the following specifications (latest applicable issue) :

### **ATR 42-500**

-Gallys 419.098/90

-Passenger seats 419.282/82



## 15 -PRODUCTION CONDITIONS

- Production agreement for aeronautical products manufacturer No P06, granted by DGAC to AEROSPATIALE DIVISION AVIONS on September 21, 1992.
- On January 1st, 1995, AEROSPATIALE DIVISION AVIONS has been renamed AEROSPATIALE BRANCHE AERONAUTIQUE.
- Production Organisation Approval N° FG.004, granted by DGAC to AEROSPATIALE BRANCHE AERONAUTIQUE on December 21, 1997.
- Since July 1st, 1998, AEROSPATIALE BRANCHE AERONAUTIQUE has been renamed AEROSPATIALE SECTEUR AERONAUTIQUE.
- Birth of AEROSPATIALE ATR after separation of AEROSPATIALE SECTEUR AERONAUTIQUE activities on April 1st, 1999.
- Production Organisation Approval N° FG054 granted to AEROSPATIALE ATR on April 1st, 1999. On June 12, 1999, AEROSPATIALE ATR has been renamed AEROSPATIALE MATRA ATR.
- On September 28, 2000, AEROSP ATIALE MATRA ATR has been renamed EADS ATR.
- On June 1st, 2001, the Production Organisation approval N° F.G.054 has been transferred from EADS ATR to ATR - GIE Avions de Transport Regional

**Note:** The address of ATR (ATR - GIE Avions de Transport Regional - 1, Allee Pierre Nadot -31712 Blagnac Cedex - France) appears on the aircraft identification plate.

## 16 – INFORMATION ON T.C. FOR ATR 42-500 A/C. – UPDATING.

This Type Certificate and corresponding Data Sheet supersede what was established for ATR 42-500 on Type Certificate No. 2-99 and corresponding Data Sheet.