

The Regional Way to Profitability



Program, overview

ATR (Avions de Transport Regional) combines the strengths of two leading European aerospace industry companies, EADS and Alenia Aeronautica, with each bringing their respective design, development and production expertise into the company.

Continuous adaptation to the changing needs coming from evolving markets is ATR products philosophy.

In addition to the continuous design changes policy to comply with regulatory requirement evolutions,

ATR is offering to regional airlines original and advanced solutions, keeping in mind essential drivers:

- ► Further enhance ATR competitiveness
- ► Reinforce and optimise operational flexibility
- ► Contribute to cost reduction initiatives
- ► Maintain the general ATR design philosophy,

in terms of easy retrofit, high maintainability and reliability, family concept and low operating cost.

The ATR 42 and ATR 72 have a high degree of commonality sharing the same fuselage cross-section, using the same basic systems, and outfitted with a common cockpit that allows cross-crew qualification.

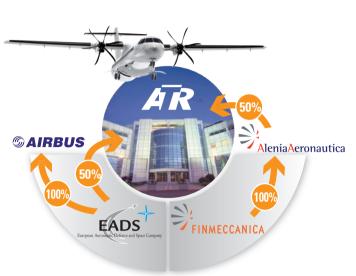
The ATR family is built around the design of a high-wing, twin turboprop aircraft that was optimized from the start for efficiency, operational flexibility and passenger comfort.

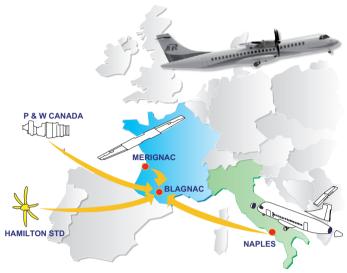




Experience from Two Industry Leaders







EADS France manufactures the ATR wings, while Alenia produces the fuselage, tail section and relevant systems.

ATR has full responsibility for final assembly line and delivery to customers.

Prestigious Partnership

ATR aircraft benefit from the know-how of its partners EADS and Alenia Aeronautica, coming from their experience and involvement in other leading-edge programs including the Airbus aircraft family, military transport aircraft, helicopters and space systems. Major airframe assemblies are produced in EADS and Alenia Aeronautica factories in France and Italy, with final assembly carried out near the ATR headquarters Toulouse-Blagnac airport in the southwest of France.



AIRBUS

TRANSPORT A/C **AERONAUTICS**

MILITARY

SPACE SYSTEMS

SECURITY SYST.

EUROCOPTER SOGERMA SOCATA

EFW

50% 47

DEFENCE &

FINMECCANICA

SPACE

HELICOPTERS

Alenia Aeronautica

DEFENCE **SYSTEMS**

INFORMATION **TECHNOLOGY**

DEFENCE ELECTRONICS

MICRO ELECTRONICS

TRANSPORT

ENERGY

50% Officin Lockeed-Marti Alenia-T Aermacchi

Versatility to suit Regional Operation

Low weights, together with an advanced aerodynamic design and the choice of state-of-the-art, highly efficient Pratt & Whitney Canada PW100 series engines keep fuel burn to a minimum. Associated with high tank capacity, this allows excellent range characteristics and the capability to fly multiple sectors without refueling. Requiring remarkably little runway for take-off and landing. the ATR 42 and the ATR 72 can operate from a wide range of the world airports, featuring also a steep approach capability with performance credit for operations on very short runways (800 to 1000 m).

'Hot and High' Airports

ATR are operated today under all types of climates. Some very hot conditions are encountered by ATR aircraft operated in the Caribbean area, Mexico, Texas and India, where temperature exceeds 38°C (100°F) in summer.

Other ATR operators are based in regions with similar environments like Iran Aseman, Royal Air Maroc, Arkia, Air Botswana, Air Algerie, China Southern XinJiang, Air Deccan, Kingfisher

Airlines, Pakistan International Airlines. ATR family, particularly well adapted for such difficult conditions, are the aircraft of choice for operators in these areas.

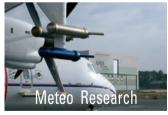


Unmatched Versatility Corporate













Steep slope approach

Steep slope approach capability with landing performance credit

Operations in Icing Conditions

Temperature or altitude extremes from the Equator to the Arctic Circle are the daily environment for ATR aircraft. ATR offers the most compre-

hensive icing certification

In October 1998, the ATR 42-300/-320 carried a successfully cold weather campaign in support of Russian Federation certification process (extreme

cold weather certification -54°C).

standard leading the way to

weather conditions are performed with ATR aircraft by North European, US, Canada

future requirements.

Daily operation in cold

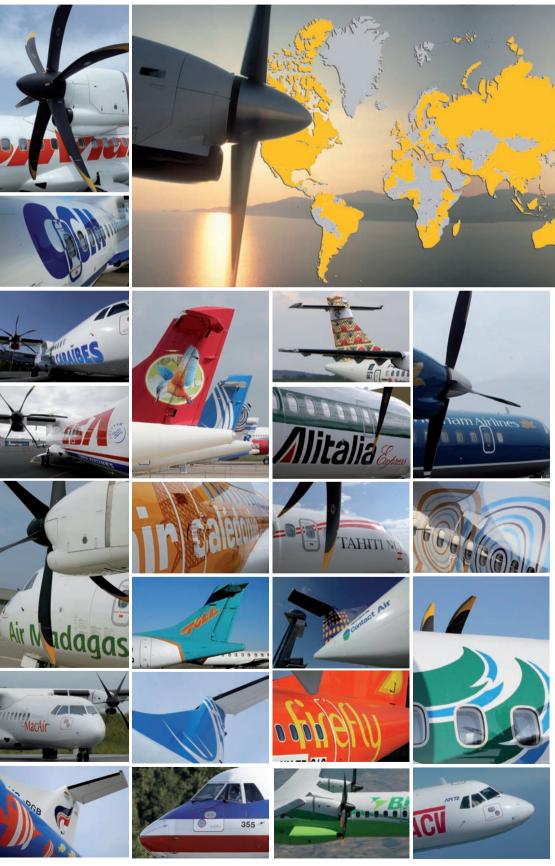
and Russian airlines.



Worldwide success

Since the launch of the program in 1985, the sales record of the ATR 42 and ATR 72 is the best demonstration of the excellent value of the products.

The Latest Generation ATR-500 family is following the same track, perpetuating quality of ATR products with exceptional standards of comfort and reliability. With its proven knowhow and superior performance, ATR is leader in its sector, holding a nearly 63% market share for current production regional turboprop aircraft in the 40-70 seat category.



ATR 42-300/-320

The Reference

in the Regional Market Transport



Since its introduction into service in December 1985, the ATR 42 has become a reference in the regional air transport industry for reliability and profitability and is now a best seller in its market segment.

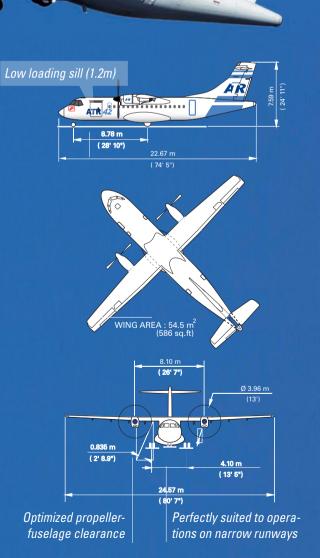
The ATR 42 is remarkably simple to operate and to maintain and is equipped with efficient,

Its operating costs are 15%-20% lower than those of its competitors.

low-fuel-burn engines.

The basic ATR 42-300 is fitted with two PW120 engines rated at 2,000 shp each.

The ATR 42-320, fitted with two PW121 engines rated at 2,100 shp each, has been developed to offer increased performance for hot and high conditions and short runway operations.













Customer Needs









The ATR 72 is derived from the ATR 42 with a 4.5 m stretched fuselage. The two aircraft feature a high degree of commonality: the same cross section, the same simple systems, the same cockpit for cross-crew qualification.

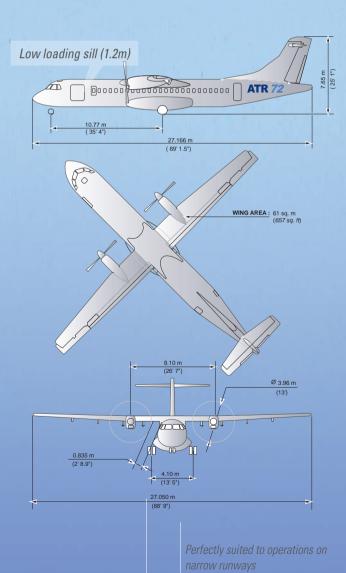
Offering a standard capacity of 66 seats, the ATR72-200 is equipped with two PW124B engines, rated at 2,400 SHP each.

The derivative version of the basic ATR72, the ATR72-210 is equipped with two higher power 2,750 SHP PW127 engines.

Main characteristics of the -210 version are excellent "hot & high" and short field capabilities.

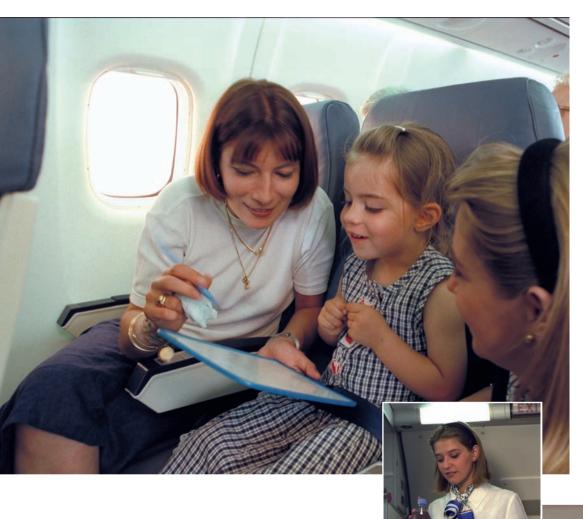
It also features enhancements to cabin comfort particularly in terms of advanced internal noise treatment and superior cabin air conditioning.

A leader in its market segment, the ATR72 has won hundred orders worldwide and achieves an in-service dispatch reliability greater than 99%



Optimized propeller-fuselage

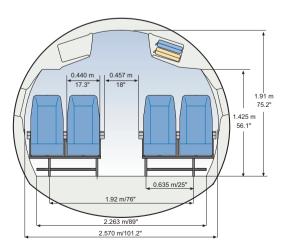
Space and Efficiency



With its bi-lobed fuselage, the ATR has the largest cross-section among latest generation aircraft with four-abreast passenger seating
The cross-section is constant throughout the passenger cabin area.

The wide aisle (18" - 0.457 m) and stand-up headroom of 1.91 m provides continued comfort for passengers on a regional service connecting with wide body jets.

Large overhead luggage bins are provided allowing more carry-on bags in response to passengers increasing desire to avoid luggage check-in.



Wide floor, wide aisle, wide elbow room



Making the best use of available space

ATR 42 Cabin Lavout Flexibility

with 4.8 m³ (169.5 cu.ft) standard rear cargo compartment & A type galley

46 pax at 30" pitch

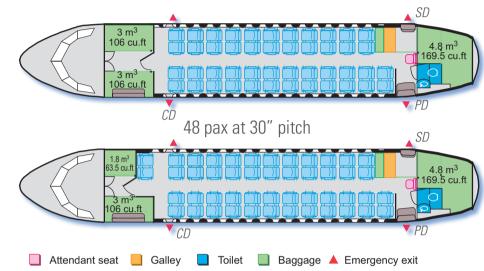
The flexible ATR interior offers a wide range of options in terms of seating capacity, galley configurations and cargo compartments.

The different layouts enable the fleets to be adapted to the traffic, in-flight service quality and freight transport requirements.

ATR 42

The standard cabin layout is 48 seats at 30 inch pitch. The dimensions of the front cargo compartment can be adapted to accommodate 50-seat and 46-seat configurations at 30 inch pitch.

- ► A rear left door including an integrated stair for passenger embarkment/disembarkment
- A rear right service door used for galley servicing and loading of the 4.8 m³ (169.5 cu. ft) rear cargo compartment
- ► A front cargo compartment which can be easily loaded through a dedicated cargo door. Depending on the cabin configuration, its volume can vary from 3.6 m³ (127 cu.ft) to 6 m3 (212 cu.ft).



PD: Pax door - CD: Cargo door - SD: Service door

A type galley (Standard ATR)

- ▶ 2 hot jugs
- ▶ 1 half size trolley equipped with 6 standard drawers
- 3 standard units each equipped with 2 standard drawers.

Other optional arrangements are available on request.



Rear Cargo Compartment





The ATR 42s with MSN below 116 (except MSN 109 & 113) are fitted with a rear cargo compartment volume of 2.4 m3 (85 cu.ft).

ATR 42 Vo	lumes	46 pax	48 pax	50 pax
Baggage	MSN ≥ 116	10.8 m³ • 381.5 cu.ft	9.6 m³ • 339 cu.ft	8.4 m³ • 296.5 cu.ft
		7.2 m³ • 254.5 cu.ft	6 m³ • 212 cu.ft	
Baggage per	MSN ≥ 116	0.235 m³ • 8.29 cu.ft	0.200 m³ • 7.06 cu.ft	0.168 m³ • 5.96 cu.ft
pax	MSN ≤ 116	0.183 m³ • 6.45 cu.ft	0.150 m³ • 5.30 cu.ft	0.120 m ³ • 4.24 cu.ft
Total baggage	MSN ≥ 116	12.7 m³ • 448.5 cu.ft	11.5 m³ • 408 cu.ft	10.4 m³ • 367.5 cu.ft
incl. overhead bins & stowage	MSN ≤ 116	10.3 m³ • 363.5 cu.ft	9.15 m³ • 323 cu.ft	8 m³ • 282.5 cu.ft
Total baggage	MSN ≥ 116	0.276 m³ • 9.75 cu.ft	0.241 m ³ • 8.50 cu.ft	0.208 m³ • 7.35 cu.ft
per pax	MSN ≤ 116	0.224 m³ • 7.941 cu.ft	0.191 m³ • 6.73 cu.ft	0.160 m³ • 5.65 cu.ft

ATR 72

The ATR 72-200/-210 standard cabin layout is 66 seats at 31 inch pitch. The dimensions of the front cargo compartment can be adapted to accommodate 64 to 72 seats, assuring that every operator can find the solution to its needs.



Main features are:

- A rear left door including an integrated stair for passenger embarkment/disembarkment
- ► A rear right service door used for galley servicing and loading of the 4.8 m³ (169.5 cu. ft) rear cargo compartment.

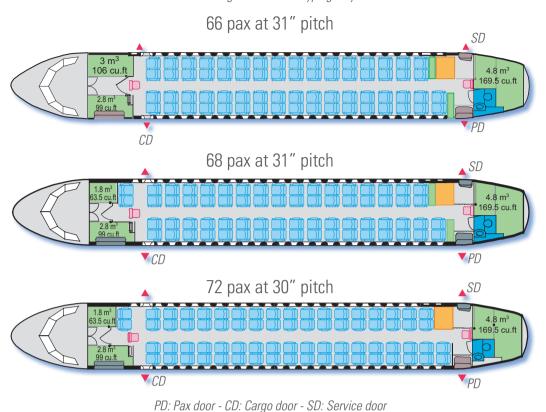


► A front cargo compartment which can be easily loaded through a dedicated cargo door.

Depending on the cabin configuration, its volume can vary from 4.6 m³ (165.5 cu.ft) to 5.8 m³ (205 cu.ft).

ATR 72 Cabin Layout Flexibility

Front cargo door - A + D type galley



	Attendant seat	Galley	Toilet	Baggage	▲ Emergency exit

ATR 72 Volumes	66 pax	68 pax	72 pax
Baggage	10.6 m³ • 374.5 cu.ft	9.4 m³ • 332 cu.ft	9.4 m³ • 332 cu.ft
Baggage per pax	0.161 m ³ • 5.67 cu.ft	0.138 m³ • 4.88 cu.ft	0.131 m³ • 4.61 cu.ft
Total baggage*	14.6 m³ • 515.5 cu.ft	13.5 m³ • 476.5 cu.ft	12.65 m³ • 446.5 cu.ft
Total baggage per pax	0.221 m ³ • 7.81 cu.ft	0.199 m³ • 7.01 cu.ft	0.176 m³ • 6.20 cu.ft

^{*} Including overhead bins & stowage

▶ Only 22 ATR 72-200 are fitted with a front LH passenger entrance door, equipped with an independent stairs. Some of them feature also a rear LH door equipped with an integrated stairs; the two entrance doors help reducing turnaround times.

Basic A + D type galley

- ► 2 hot jugs
- ➤ 3 half size trolleys each equipped with 6 standard drawers
- ➤ 5 standard units each equipped with 2 standard drawers

Other optional arrangements are available on request.







Reliable, Durable, Low-Cost Powerplant

PW100 Family Engines

- ► Two centrifugal compressors
- Free turbine, three concentric shafts
- ► Electronic and hydro-mechanical controls

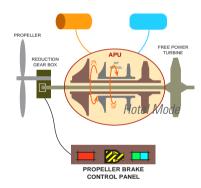
	ATR 42-300/-320 PW120/121	ATR 42-200 PW124B	ATR 72-210 PW127
Take-off power	2,000/2,100 SHP	2,160 SHP	2,475 SHP
Take-off power (one engine out)		2,400 SHP	2,750 SHP
Propeller (Hamilton Standard)	14SF-5	14SF-11	247F

Advantages

- ► Simple, economic, easy to maintain
- Low specific fuel consumption
- Compliance with today's and future noise levels regulations

Pratt & Whitney Canada Services provides Customer tailored, dependable service solutions that offer the highest levels of reliability and lower cost of ownership.

Hotel Mode/Propeller Brake



Annual Propeller Brake vs APU

Savings with a propeller brake: About 24,400 US\$ annually/ aircraft

Propeller brake	Ground idle utilization	APU (rear mounted)
Weight	22 lb (basic on ATR)	330 to 400 lb
C.G.	No effect	Loading constraints
Acquisition cost	Basic on ATR	275,000 US \$
Fuel consumption	240 lb/hr	210 lb/hr
Maintenance cost	2.29 \$/cycle	5.31\$/cycle
Yearly cost	77,900 US\$	102,300 US\$

A present value saving for a fleet of 2 ATR 72 with a propeller brake will be:

- US\$ 327,000 or
- US\$ 163,600/aircraft.

The Hotel Mode provides all the facilities and all the benefits of an APU at a fraction of the cost and with less weight, offering to the operators a greater operational flexibility.

The right hand engine is equipped with a propeller brake installed on the reduction gear box.

Used only on the ground, this brake locks the propeller while, thanks to the three-concentric shaft design of the engine, the LP/HP spools continue to run providing the aircraft with electrical DC power and bleed air for the air conditioning system. The propeller brake represents the best compromise for the operators because:

- It is lighter than the APU.
- It is economic
- It can be maintained at low cost.
- It has no effect on the engine life at ground idle.
- It is installed as basic fit on the ATR 42 and ATR 72.

Assumptions

- 2,000 cycles per year, average cycle 20 min
- Fuel price 3\$ / US gal.
- · APU amortization: 10 years, no residual value
- No allowance for APU weight induced extra fuel consumption or payload reduction
- 10-year period
- Interest rate: 8%
- · 2 aircraft fleet



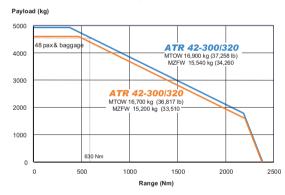
ATR 42-300 & ATR 42-320 Weights and

Performance	ATR 42-300 (PW120)		ATR 42-320 (PW12	
Balanced take-off FL • ISA, sea level, MTOW* • ISA +10°C, 3,000ft, MTOW*	1,090 m 1,300 m	3,575 ft 4,265 ft	1,040 m 1,235 m	3,410 ft 4,050 ft
Landing FL • SL,MLW	1,030 m	3,380 ft	1,030 m	3,380 ft
Gross single engine ceiling • 97% MTOW*, ISA +10°C	4,280m	14,040ft	4,880 m	16,015 ft
Max Cruise Speed • 97% MTOW*, ISA, 17,000 ft	265 kt		269	9 kt

^{*} MTOW =16,700 kg (36,817 lb)

Block Fuel & Block Time on typical sectors				
100 Nm	295 kg (650 lb)			
100 14111	32 min			
n 200 Nm	497 kg (1,095 lb)			
11 200 14111	56 min			

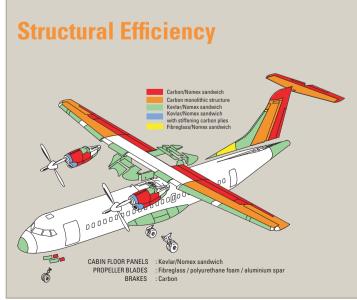
Payload/Range



ISA conditions - Reserves: Alternate: 87 Nm - Holding: 45' continued cruise - Pass. & baggage 95 kg (209 lb)

Weights & loadings	Basic		Option*	
	kg	lb	kg	lb
Maximum ramp weight	16,720	36,681	17,070	37,632
Maximum take-off weight	16,700	36,817	16,900	37,258
Maximum landing weight	16,400	36,155	16,400	36,155
Maximum zero fuel weight	15,200	33,510	15,540	34,260
OEW (at spec.def)	10,285	22,674	10,285	22,674
OEW (with typical options)	10,600	23,369	10,600	23,369
Maximum payload	4,600	10,141	4,940	10,891
Maximum fuel load	4,500	9,921	4,500	9,921

^{*} In retrofit through application of Service Bulletin ATR 42-08-0003: a/c with MSN<70 will be subject to a VMO reduction down to 230 kt; for other a/c the VMO remains at 250 kt.



ATR 42 and ATR 72 secondary structure are extensively made of composite material, which are not subject to corrosion.

In addition, the ATR72 innovates by the use of carbon fiber for its outer wings, thus reducing weight further.

The in-service advantages of composites are numerous:

Immunity to corrosion and fatigue

- ► Reduction of inspection
- Payload gain and fuel savings.

Not including the commercial furnishing weight, the corresponding result can be summarized as follows:

- Composite/total structure: 14% to 19%
- ► Weight saving: 200 to 400 kg, equivalent to up to 4

ATR 72-200 & ATR 72-210

Performance

Performance	Basic		Option	
	kg	lb	kg	lb
Maximum Ramp Weight	21,530	47,465	22,030	48,567
Maximum Take-Off Weight	21,500	47,400	22,000	48,501
Maximum Landing Weight	21,350	47,068	21,350	47,068
Maximum Zero Fuel Weight	19,700	43,430	20,000	44,092
72-200 OEW (at spec. def) 72-210 OEW (at spec. def)	12,400 12,450	27,337 27,447	12,400 12,450	27,337 27,447
72-200 OEW (with typ. opt.) 72-210 OEW (with typ. opt.)	12,700 12,750	27,998 28,108	12,700 12,750	27,998 28,108
Maximum Payload	7,000	15,432	7,300	16,094
Maximum Fuel Load	5,000	11,023	5,000	11,023



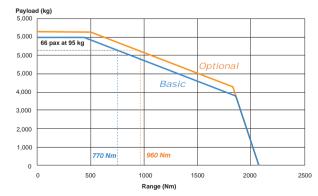
Block Fuel & Block Time on typical sectors ATR 72-210 ATR 72-200 355 kg (783 lb) 368 kg (811 lb) 100 Nm 32 min 32 min 578 kg (1,274 lb) 607 kg (1,338 lb) 200 Nm 55 min 55 min

The most efficient compromise between low fuel consumption and speed



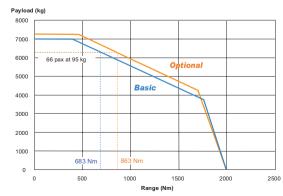
Performance	ATR 72-200 (PW124B)				ATR 72-210 (PW127)			
	Basic v	veights	Optional weights		Basic v	weights	Optional	weights
Balanced Take-Off Field Length ISA, sea level, MTOW ISA, sea level, TOW for 300 Nm (66 pax@95 kg) ISA +10°C, 3,000 ft, TOW for 300 Nm (66 pax@95kg)	1,410 m 1,225 m 1,490 m	4,625 ft 4,019 ft 4,888 ft	1,510 m 1,225 m 1,490 m	4,954 ft 4,019 ft 4,888 ft	1,210 m 1,095 m 1,315 m	3,970 ft 3,592 ft 4,314 ft	1,290 m 1,095 m 1,315 m	4,232 ft 3,592 ft 4,314 ft
• SL, MLW	1,210 m	3,970 ft	1,210 m	3,970 ft	1,050 m	3,440 ft	1,050 m	3,440 ft
Max Cruise Speed 97% MTOW, ISA, 17,000ft	277 kt		276 kt		279 kt		278 kt	

ATR 72-200 Payload/Range



OEW: 12,700 kg - ISA conditions - High cruise speed - Reserves: 87 Nm alternate - 45 min extended cruise - Passenger and baggage 95 kg (209 lb)

ATR 72-210 Payload/Range



OEW: 12,750 kg - ISA conditions - High cruise speed - Reserves: 87 Nm alternate - 45 min extended cruise - Passenger and baggage 95 kg (209 lb)

Cargo Capability Quick Change

The ATR is well suited to perform freight transport missions through its basic flexibility as illustrated by:

- ► Standard cargo door: 1.275 x 1.53 m (50.2" x 60.2"), openable either from inside or outside
- ► Low loading sill (1.12 m)
- Quick change option available:
- Class E compartment capability
- Total reinforced floor (400 kg/m²)
- Passenger seats easily removable
- Forward partition easily removable
- Smoke detection extension in cabin

The ATR platform is suitable for containerized or bulk freight.



Total containerized volume

ATR 42: 25.2 m³ (891 cu.ft) + bulk freight in the aft cargo zone (4.8 m³)

ATR 72: $36.4 \, m^3$ (1,287 cu.ft) + bulk freight in the aft cargo zone (4.8 m^3)



ATR Container Definition

 Volume
 2.8 m³ (99 cu.ft)

 Max gross weight500 kg (1,102 lb)

 Tare weight
 76 kg (168 lb)

Complies with Class I of NAS 3610 ("9g" type)



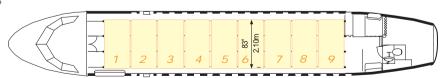
Quick change capability = Additional profit opportunities

Notes

- The basic attendant seat is not usable during container transport operations
- This type of operations requires the option 03-0011 (Container Transport Capability)
- The Container Transport option requires that the cabin be, as far as the fire protection system is concerned, class E. Class E mainly leads to extension of the existing smoke detection system and installation of isolating valves in the air-conditioning system. This classification does not allow the use of the attendant seat during cargo operations.

Container Installation

ATR 42

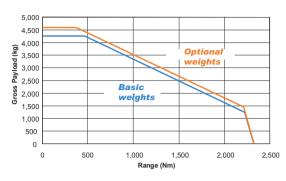


ATR 72





ATR 42-300/320 QC Freighter Payload/Range



Conditions: ISA, no wind

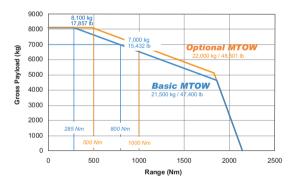
Reserves: 45 min continued cruise, 87 Nm alternate

Taxi: 4 min - OEW: 10,950 kg

OEW includes the Container Transport System and the

container weights.

ATR 72-200 QC Freighter Payload/Range



OEW: 11,900 kg / 26,235 lb

Optional MZFW: 20,000 kg / 44,092 lb

Holding: 45' at cruise power

Alternate 87 Nm - ISA - Max cruise speed



ATR QC Freighter Max Payload	ATR 42-300/320 PW 120/121		ATR 72- PW 12	200/210 4B/127
MZFW limited gross payload	5,440 kg	11,993 lb	7,950 kg	17,527 lb
Bulk - Limit of cabin nets	4,800 kg	10,582 lb	7,200 kg	15,873 lb
Bulk - Limit of aft cargo hold	768 kg1	1,693 lb	768 kg	1,693 lb
Maximum net bulk payload2	5,395 kg	11,894 lb	7,882 kg	17,377 lb
Containers (net payload)	3,816 kg	8,413 lb	5,512 kg	12,152 lb
Bulk - Limit of aft cargo hold	+768 kg1	+1,693lb	+768 kg	+ 1,693 lb

1: 384 kg por MSN<116 (small rear hold)

2: Assumes SIREN kit

ATR QC Freighter	ATR 42-300/320		ATR 72-200/210		
Reference Weights	PW 12	20/121	PW 124B/127		
MTOW Standard	16,700 kg	36,817 lb	21,500 kg	47,400 lb	
MTOW Optional	16,900 kg1	37,258 lb1	22,000 kg2	48,501 lb2	
MLW	16,400 kg	36,155 lb	21,350 kg	47,068 lb	
MZFW Standard			19,700 kg	43,430 lb	
MZFW Optional	10,540 kg1	23,236 lb	20,000 kg	44,092 lb	
OEW (typical)3	10,100 kg	22,266 lb	11,900 kg	26,235 lb	
Max Fuel	4,500 kg	9,921 lb	5,000 kg	11,023 lb	

- 1: For MSN < 70, VMO limited at 240 kt
- 2: Not applicable on the 17 first ATR 72 (up to MSN 195)
- 3: Typical weights according to ATR second hand aircraft weight statistics, with overhead bins and galley and without galley equipment.





ATR Full Freighter

Full Cargo Version The New Standard in Regional and **Feeder Cargo Transport**

In order to address the growing requirements of cargo operators for new generation, efficient regional freighters, ATR has launched optimized derivatives of the standard passenger models.

▶ Bulk Freighter derivative ("Tube" version): This version is an optimized solution for small parcels transportation (best volume and payload, quick and efficient loading).



Large Cargo Door (116") conversion In order to provide operators with standard ULD compatibility (notably LD3 containers and 88" width containers or pallets), a large 116" x 71" front cargo door is now availa-

ble, replacing the standard front door.

Combined as required with equipment from the "Tube" concept, this version is a multi-purpose freighter capable of:

- Bulk Freight transportation with improved loading efficiency
- Standard or specific pallets or containers transportation,
- Carriage of oversize loads.



Capabilities -Light Tube

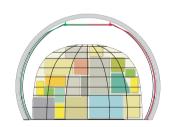
Payload optimization for dense bulk transportation

- Spider nets
- ► Bulk freight with BFE spider nets
- Maximize the payload for dense bulk transportation
- ► Maximum payload:

ATR 42: 5,753 kg (12,683 lb) ATR 72: 8,604 kg (18,968 lb)

Gross usable volume:

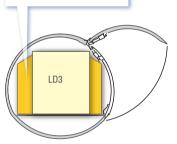
ATR 42: 56 m3 (1,978 cu.ft) ATR 72: 75.5 m3 (2.666 cu.ft))



The lightest and lowest cost solution

Cabin cross-section with 116" door **ULD Compatibility**

88" x 108" ULD 88" x 62" ULD





Loading Capability	ATR 42	ATR 72
LD3 Containers	5	7
88" x 108" pallets	3	5
88" x 62" pallets	6	9

+ aft bulk load

ATR Full Freighters (Tube + LCD) Weights and loadings	ATR 42-300/320 PW 120/121		ATR 72-200/210 PW 124B/127	
MTOW	16,900 kg	37,257 lb	22,000 kg	48,501 lb
OEW (typical, no CLS)	10,037 kg	22,127 lb	11,646 kg	25,675 lb
Max net payload	5,503 kg	12,132 lb	8,354 kg	18,417 lb
Max linear load	510 ÷ 610 kg/m	28 ÷ 34 lb/inch	510 ÷ 610 kg/m	28 ÷ 34 lb/inch

