

EXPERIENCE AIMED AT THE FUTURE



ANTONOV-148

REGIONAL AIRCRAFT

ANTONOV present to the international aviation community a competitive advanced technology product, which meets all modern safety and ecological requirements as well as the demands of potential operators. This is guaranteed by the combination of technological achievements of leading enterprises involved in the AN-148 programme and the vast experience of ANTONOV in the creation of regional aircraft.



ANTONOV® regional aircraft:

AN-140-100 (1997, 52 passengers) - high comfort level and profitability in operation



AN-38-100 (1994, 27 passengers) is operated in Russia and countries of South East Asia



AN-28 (1973, 19 passengers) flies on local airlines of European and Latin American countries



AN-24 (1959, 48 passengers) - main regional airplane of the USSR and many other countries for 30 years



AN-10 (1957, 100 passengers) the first passenger turboprop airplane in the USSR.



ANTONOV® in cooperation with enterprises of Ukraine, Russia and other countries develops a family of the AN-148/-158/ twin jet aircraft intended for passenger transportations on regional and short-haul air routes. These airplanes can fly on any routes, including those ones with intensive air traffic, under VFR and IFR weather conditions, by day and at night. They are able to wide net of airfields with various runways surfaces including unpaved, snow- and ice-covered ones. The AN-148 and the AN-158 can land in conditions where visibility is close to zero.

AN-148-100/-200 regional passenger aircraft

Proceeding from spread of the air routes, the customers can choose the aircraft version "A", "B" or "E" with optimal characteristics.

AN-148-100 versions with cargo capacity up to 85 pax:

- **AN-148-100A** with a service range of 2000-3000 km;
- **AN-148-100B** with a service range of 3000-4000 km;
- **AN-148-100E** with a service range of 4000-4400 km.

AN-148-200 versions with cargo capacity up to 89 pax:

- **AN-148-200A** with a service range of 2000-3000 km;
- **AN-148-200B** with a service range of 3000-4000 km;
- **AN-148-200E** with a service range of 4000-4400 km.



AN-158 regional passenger aircraft

It is intended to carry up to 99 passengers on regional and short-haul air routes. The aircraft can be delivered in various versions with single- and two-class layouts.



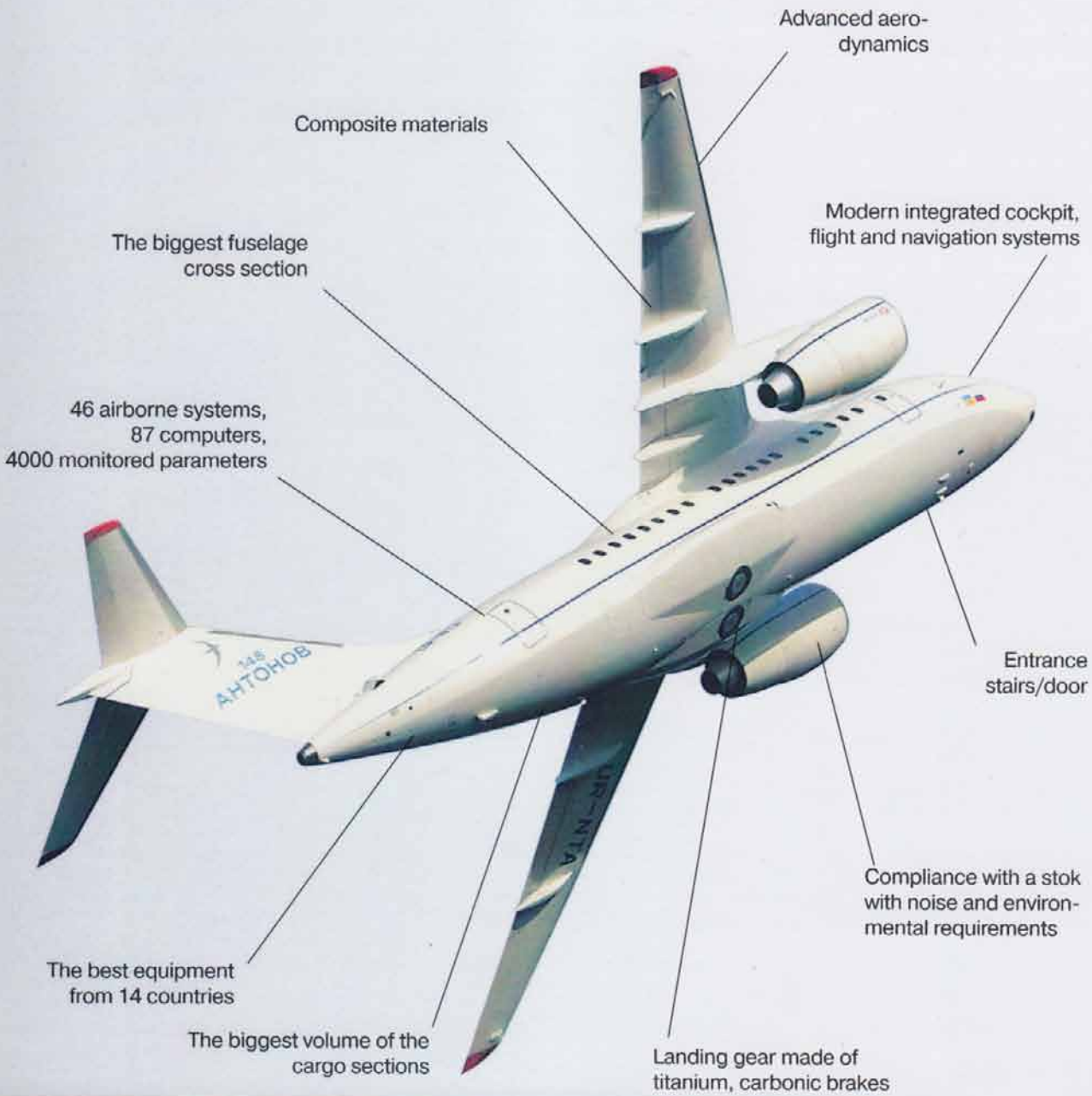
AN-148-300 business jet (12-14 pax x 7000 km)

This aircraft is under development.

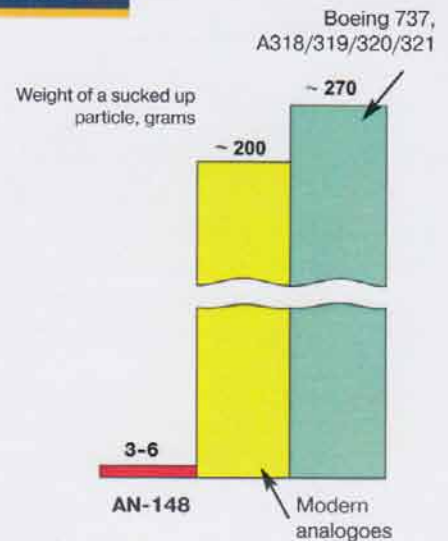
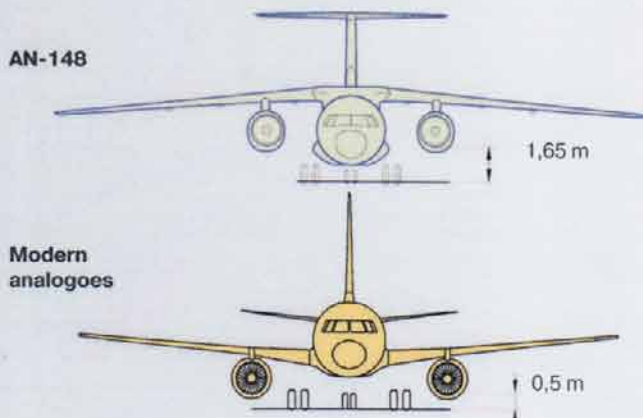
It is intended to carry passengers in high comfort over a range up to 7000 km. On the customers' demand, the aircraft can be delivered with various layouts of the passenger compartment.



Superior concept



Protection of the control system and the wing at the "bad" runways



AN-148 approved flight conditions:

- in basic navigation system (B-RNAV);
- in precise navigation system (P-RNAV);
- in zones of reduced vertical separation minimum (RVSM);
- under ambient air temperatures at ground from -55°C to +45°C;
- at airfields with elevation up to 2200 m above SL;
- with crosswind up to 15 m/s;
- at visual and instrument flight rules (VFR and IFR).



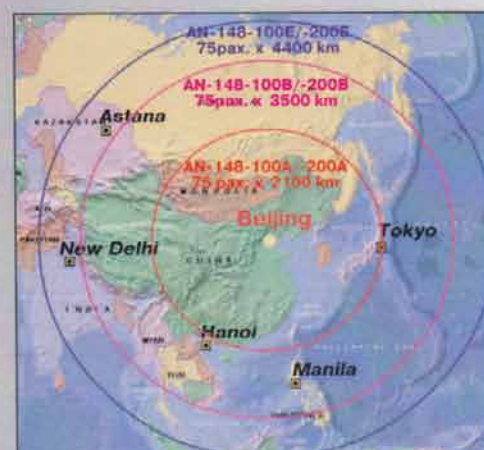
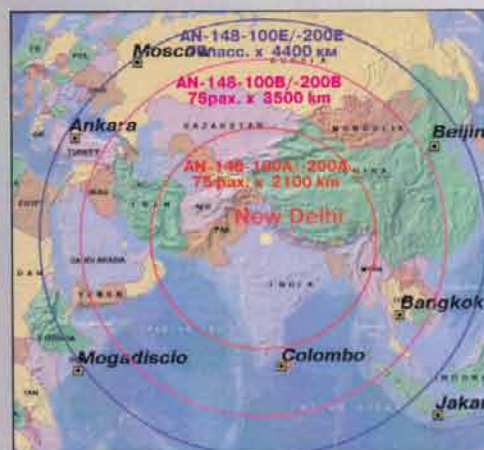
Certificates of AN-148:

- Type Certificate **No.ST 246-AN-148** issued by the Aviation Register of the Interstate Aviation Committee (AR of IAC) on 26.02.2007;
- Noise Certificate **No.SSh 169-AN-148-100** issued by the AR of IAC on 22.02.2007
- Type Certificate **No.TL 0036** issued by the State Aviation Administration of Ukraine on 26.02.2007
- Supplement as for P-RNAV **No.ST-AN-148-100/D01** issued by AR of IAC on 24.07.2009;
- Supplement as for CAS-100, RDR-4B, ALT-4000, EGPWS Mark-V **No.ST-AN-148-100/D02** issued by AR of IAC on 18.08.2009;
- Supplement as for operation from/to unpaved airfields **No.ST-AN-148-100/D03** issued by AR of IAC on 30.12.2009;
- Supplement as for IIIa landing category **No.ST-AN-148-100/D04** issued by AR of IAC on 01.04.2010.

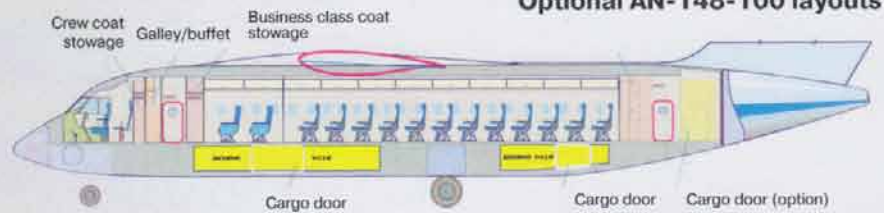
Runways:

- dry;
- wet;
- with ditch-water;
- hoar-frost-covered;
- with slush layer up to 15 mm thick;
- covered with snow up to 50 mm thick.

Wide range of abilities



Optional AN-148-100 layouts



68-seat two-class layout
890 mm (35")/813 mm (32") seat pitch



75-seat single-class layout
813 mm (32") seat pitch



85-seat single-class layout (option)
762 mm (30") seat pitch

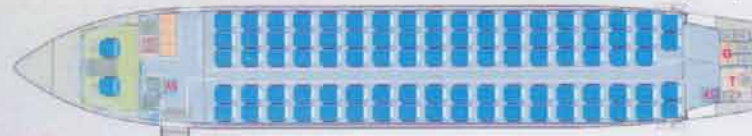


Optional AN-148-200 layouts

72-seat two-class layout
890 mm (35")/813 mm (32") seat pitch



89-seat single-class layout (option)
762 mm (30") seat pitch

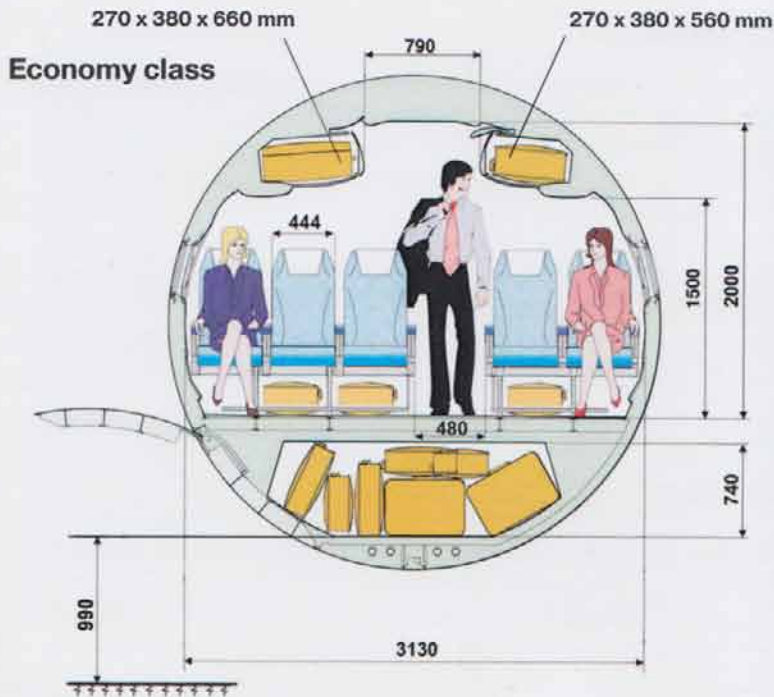


G - galley, T - toilet, W - wardrobe, AS - attendant's seat, B - baggage compartment

Baggage and cargo volumes:

- total volume - 20.76 m³
 - total volume per 1 passenger* - 0.277m³
 - baggage racks volume - 4.76 m³
 - baggage volume per 1 passenger* - 0.063 m³
- * with 75 passengers





Maximum comfort level is provided by:

- the most spacious compartment in its class;
- low noise and vibration levels;
- modern interior for blameless services;
- the most spacious over-head baggage racks in their class;
- big space over the passenger head;
- passenger seats on their dimensions correspond to those ones of airliners;
- convenient and modern passenger entertainment system.

Passenger seats of the business class



Passenger seats of the economy class



Entrance stairs/door



Passenger entertainment system



Front toilet





The two-seat cockpit of the AN-148 combines the most innovative technologies and interaction principle "crew-aircraft". Its integrated avionics and electronic display system provides the crew with necessary information throughout all phases of flight. High automation of the cockpit releases the crew from low-level operations, ensuring the aircraft is comfortable and easy to fly. As a result, the crew can concentrate on general monitoring of the current situation. The crew is alerted to unusual events by means of warning information messages generated automatically by the integrated system. To meet the requirements of ICAO Annex 6 (Part 1, Chapter 13 "Security") the aircraft is fitted with a bullet-proof door and CCTV monitoring of the passenger compartment and other sections of the airplane. There is an additional folding seat for a supervisory pilot in the cockpit.

The flight, navigation and radio communication equipment is compliant with current and future ICAO recommendations and EUROCONTROL requirements, including:

- precise navigation in accordance with RNP-5 and RNP-1;
- flying in RVSM zones;
- automated flight planning with navigation database;
- flights in automatic mode by SID, STAR, APPROCH, MISSED APPROACH standard schemes;
- early ground proximity warning system;
- air collision avoidance system;
- detection of wind shear;
- radio communication within 8.33 kHz channel spacing;
- two-way communication within HF range;
- documentation of the crew members conversation during two hours.

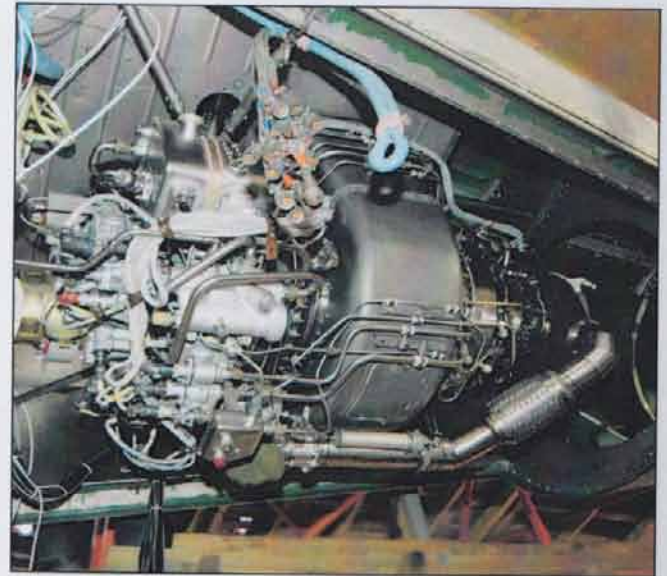
Work in the AN-148 passenger and service compartments is convenient and pleasant





AN-148 is equipped with **D-436-148** engine designed by SE «Ivchenko-Progress» and produced by «Motor Sich» motor-building plant. Depending on the aircraft version, the engine thrust varies from 6400 to 6830 kgf.

The engine is fitted with complex digital automatic control system. The engine life period is 40000 flight hours and 20000 cycles.

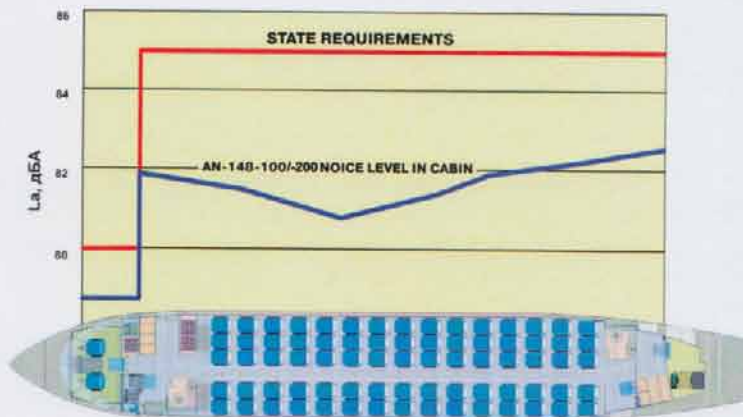


AN-148 is equipped with APU **AI-450-MS** designed by SE «Ivchenko-Progress» and produced by «Motor Sich» motor-building plant.

The APU life period is 16000 flight hours and 32000 cycles.

Ecological compatibility and Security

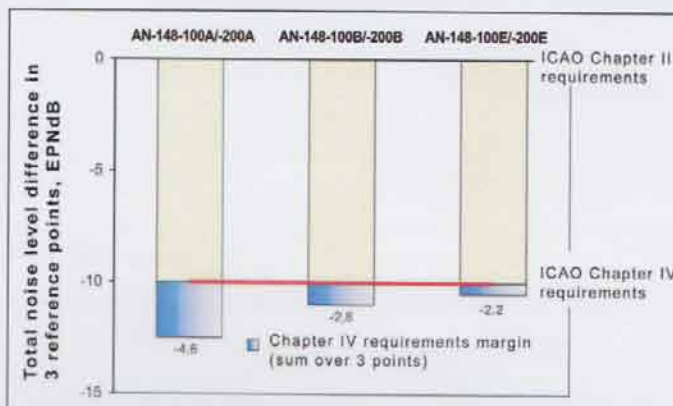
Noise level in the aircraft compartments



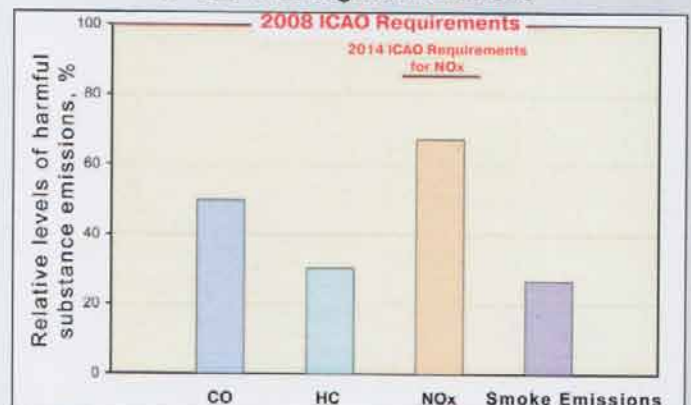
The AN-148 meets the requirements of:

- ICAO Annex 6 (Part I, Chapter 13 «Security»);
- ICAO Annex 8 (Part IIIB, section K «Aviation Security»);
- FAR-25.795, CS-25.795;
- Directive of FAS of Russia No. 36I dated 24.04.97.

AN-148 noise level



D-436-148 engines emissions



After-sale support

ANTONOV Company renders a full package of after-sale support for the AN-148 aircraft in the warranty and post-warranty period. During the operational warranty period, specified in the contract on delivery of the aircraft, work is performed at the expense of ANTONOV Company. Post-warranty maintenance is performed on the basis of an additional contract.

The Service Centre of ANTONOV Company performs maintenance work on the AN-148 airplanes and their components in accordance with operational documentation. Groups of ANTONOV service center's specialists perform the work at bases of the Customer's aircraft.

ANTONOV Centre of Engineering and Technical Support for the AN-148 aircraft fully supports the aircraft operation throughout all phases of its service life and gives advice and recommendations in accordance with the Customer's technical requirements. The support packages are tailor made; taking into account the particular operating conditions experienced by the aircraft of each individual customer, thereby guaranteeing immediate resolution of any operational problems at the aircrafts' bases.

ANTONOV Flight Crew Training Centre provides training and re-training of flight and maintenance personnel for the airlines, which operate the AN-148 aircraft, as well as training of instructors.

ANTONOV Company has inaugurated operation of a modern, complex, category D flight simulator for the AN-148 and AN-158 aircraft. In the future it is planned to put into operation a new simulator developed jointly by ANTONOV Company and Tranzas Company (Saint-Petersburg).

The Logistic Support Centre provides the Customer with necessary spare parts for the AN-148 aircraft, a full set of required aircraft and ground support equipment. Certified AN-148 and AN-158 maintenance repair and overhaul organizations are also supplied with parts by the Logistic Support Centre.

| Check | Time interval |
|-----------------------------|---|
| Line maintenance | |
| Transit | Before a flight |
| Daily | At least once every two days (48 hours) |
| Fortnightly | Every two weeks |
| Base (periodic) maintenance | |
| «A» Check | 750 hours |
| «C» Check | 36 months (about 7500 hours) |

The Customer Support Centre provides a "one stop shop" for information, engineering services, operational and technical support, and regulatory references for the AN-148 aircraft. *Contacts:*

E-mail: support@antonov.com

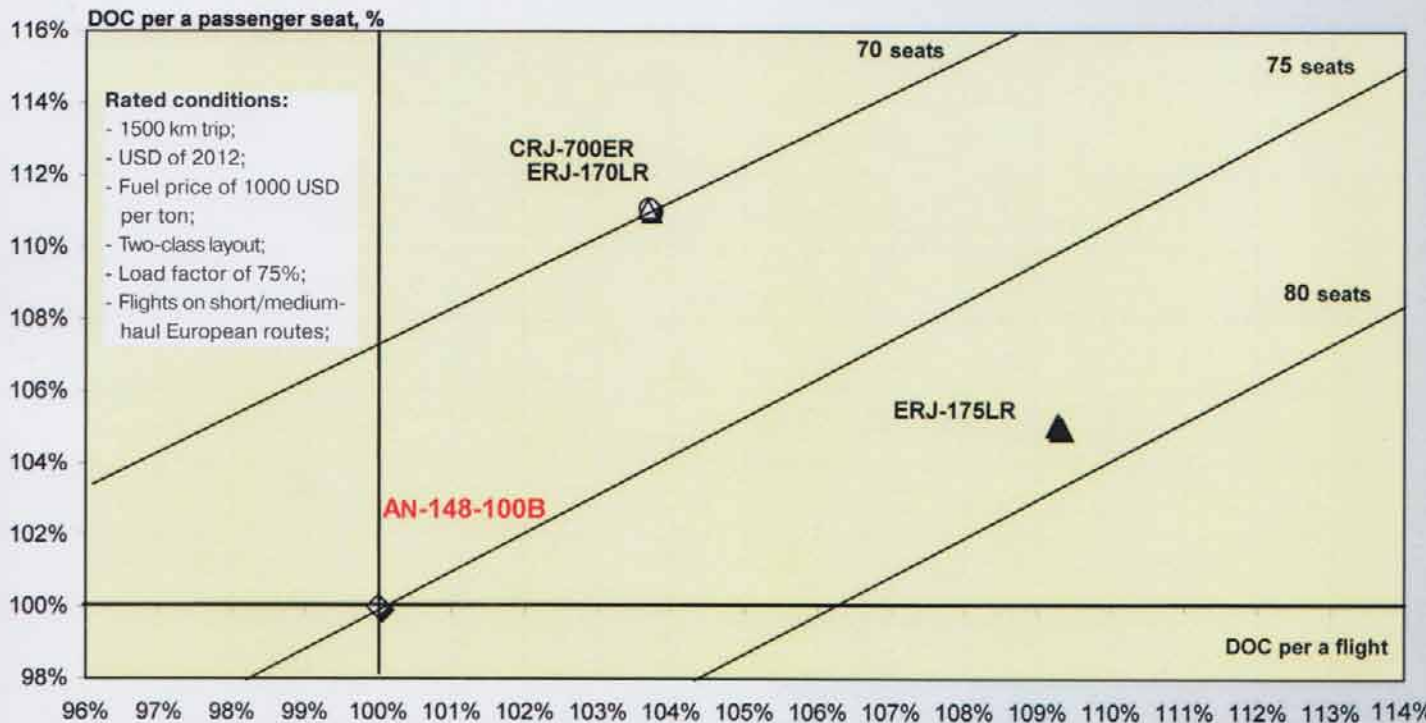
Phone/fax: +38 (044) 400 97 76

An informational web-portal has been established for Customers and MROs :
www.support.antonov.com



Special regional MRO centres for the AN-148 aircraft, centres of flight and maintenance personnel training, and logistics are established **at a local level**. On the Customer's request, all information is made available through web-based sources.

Aircraft DOC comparison



Partnership for mutual success

214 enterprises of 15 countries of the world are involved into the AN-148 programme



The AN-148 is assembled at ANTONOV Company (Ukraine) and Voronezh Aircraft Building JSC (Russia)





AN-148-100A/-200A AN-148-100B/-200B AN-148-100E/-200E

Maximum passenger capacity, pax.

- for AN-148-100

85

- for AN-148-200

89

Maximum payload, kg

9000

Service range, km

- with 75 pax (32", economy class)

2100

3500

4400

Cruising flight speed, km/h

780-870

Cruising flight altitude, m

12200

Operational temperature (at ground), °C

-55... +45

Airfield elevation above sea level, m

up to 2200

Take-off length required (concrete), m

1600

1800

1900

Aircraft service life:

- hours

80 000

80 000

80 000

- flights

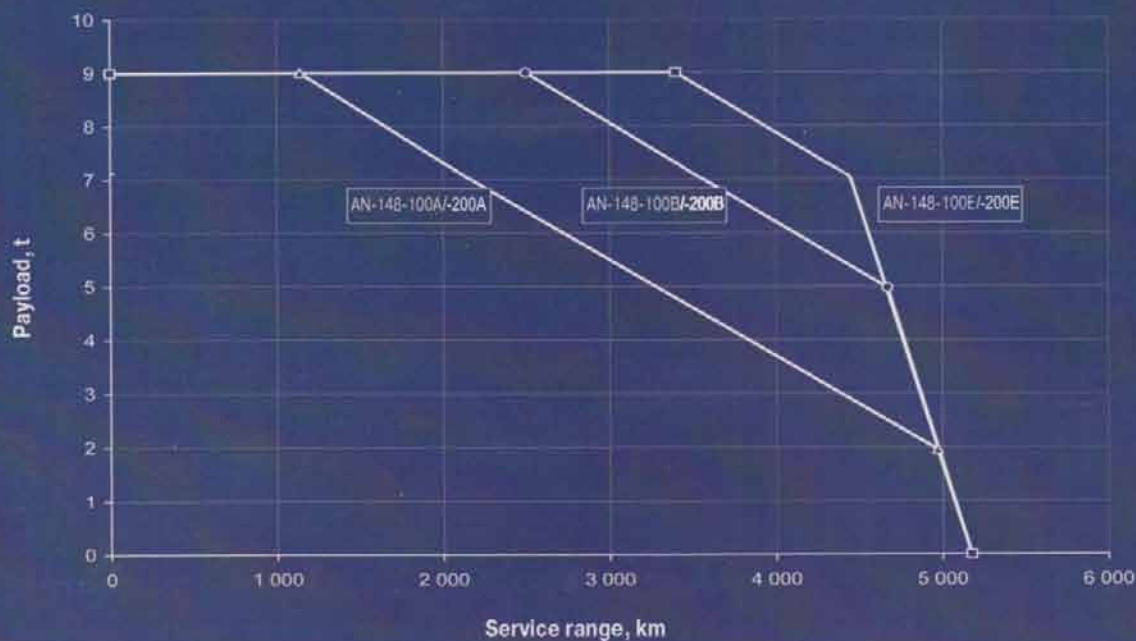
60 000

40 000

30 000

Engines

D-436-148



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