

EXPERIENCE AIMED AT THE FUTURE



# ANTONOV-158

## REGIONAL AIRCRAFT



*"We 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-158 programme and the vast experience of ANTONOV in the creation of regional aircraft".*

**Dmytro Kiva,  
President - General Designer**



## 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.

# The AN-148/-158/-168 family

**ANTONOV®** in cooperation with enterprises of Ukraine, Russia and other countries develops a family of the AN-148/-158/-168 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 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-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-168 is a project of business jet (12-14 pax x 7000 km)**

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.



# The AN-158 and AN-148: commonality and differences

## AN-158

passenger capacity  
up to 99 passengers



## AN-148-100

passenger capacity  
up to 85 passengers



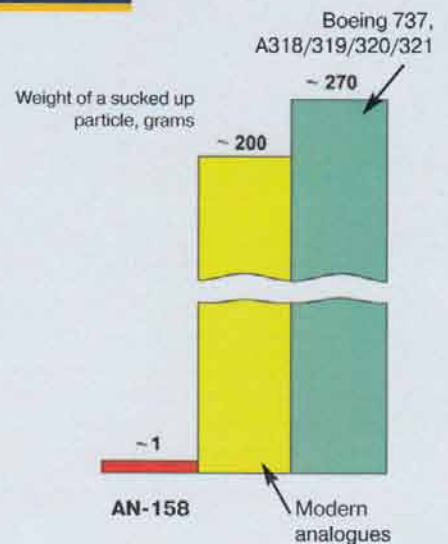
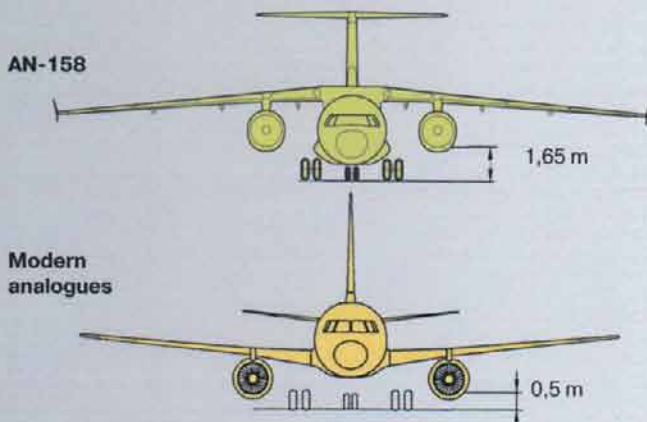
### High commonality:

- airframe commonality - 82%;
- common landing gear and main aircraft systems;
- common powerplant;
- common avionics with upgrade capability to meet new regulations up to Free Flight provision;
- common cockpit and flight control system;
- common MRO;
- common system of technical publications;
- common flight crew training system;
- common modular passenger compartment.

### Core differences:

- maximal passenger capacity increased by 14 seats ;
- passenger compartment stretched by 2.5 m ;
- increased volume of over-head baggage racks in the passenger compartment;
- the wing equipped with a tip aerodynamic surface;
- fuel efficiency improved by 8.5%;
- DOC to carry 1 passenger decreased by 12%.

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



The AN-158 was created on the basis of the certified AN-148 aircraft and meets all the basic certificated issued to this aircraft by Aviation Register of Interstate Aviation Committee and state Aviation Register of Ukraine by the AP-25 norms.



*Tests at maximal angles of attack*



*Tests at minimum unstuck speed*

The aircraft can be operated under various climatic conditions and from/to airfields with various runways surfaces including:

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

#### 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 -55C to +45C;
- with crosswind up to 15 m/s;
- at visual and instrument flight rules (VFR and IFR);
- at airfields with elevation up to 1500 m above sea level;

To extend conditions of operation it is planned to perform tests on at the elevated airfields up to 4000 m above the sea level.



*Tests at a snow-covered runway*

On February 28, 2011, the **AN-158 received certification** including noise level certificates, issued by Interstate Aviation Committee of CIS countries and State Aviation Administration of Ukraine. These documents confirm the aircraft compliance with the AP-25 Aviation rules harmonized with American FAR-25 rules and European CS-25.



*Tests at an elevated airfield*

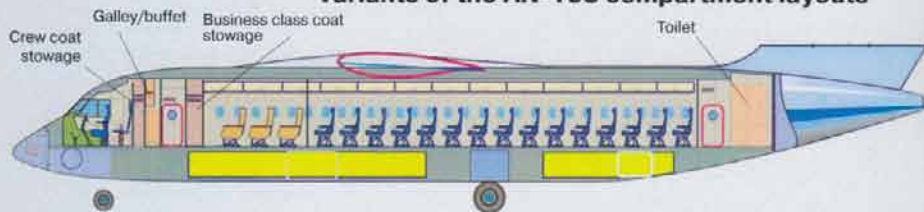


*Emergency escape*

# Wide range of passenger transportations abilities



## Variants of the AN-158 compartment layouts



### 86-seat two-class layout

12 seats of the business class, seat pitch is 863.6 mm (34")  
74 seats of the economy class, seat pitch is 787.4 mm (31")



### 89-seat two-class layout

10 seats of the business class, seat pitch is 863.6 mm (34")  
79 seats of the economy class, seat pitch is 787.4 mm (31")



### 99-seat single-class layout

Economy class, seat pitch is 762 mm (30")



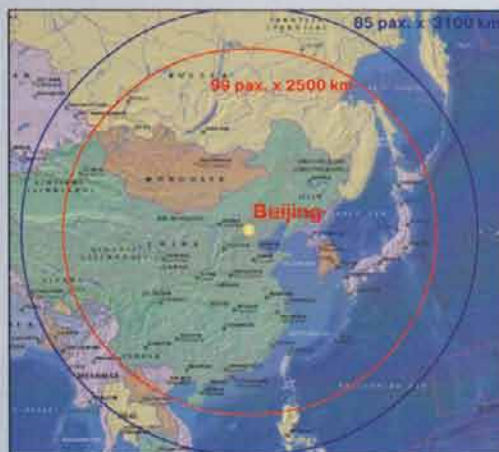
### 97-seat single-class layout

Economy class, seat pitch is 762 mm (30")



### 92-seat single-class layout

Economy class, seat pitch is 812,8 mm (32")

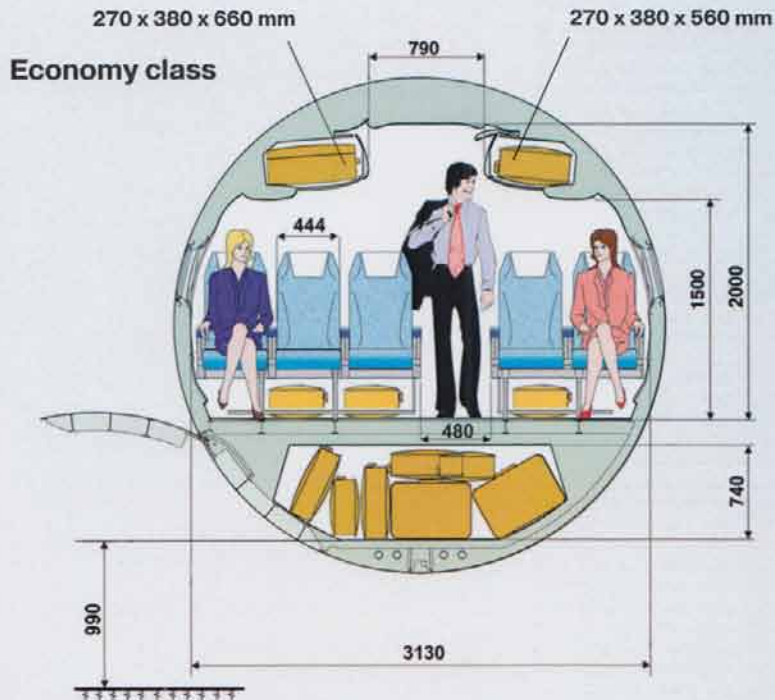


## Baggage and cargo sections:

I - front underfloor section - 10.12 m<sup>3</sup>

II - rear underfloor section - 4.55 m<sup>3</sup>





## 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



Rear toilet





**The two-seat cockpit of the AN-158** 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-158 passenger and service compartments is convenient and pleasant**

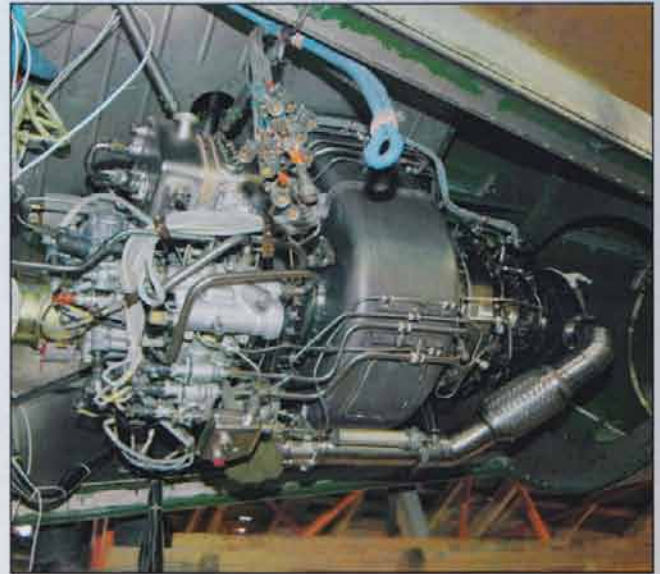






AN-158 is equipped with **D-436-148** engine (thrust 6830 kgf) designed by SE «Ivchenko-Progress» and produced by «Motor Sich» motor-building plant.

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

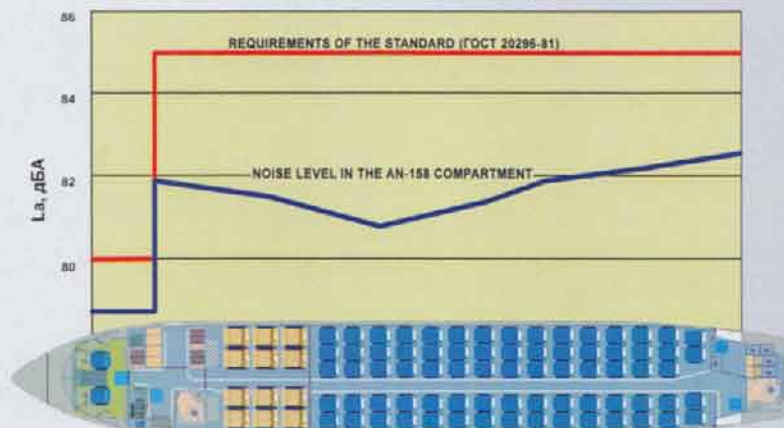


AN-158 is equipped with APU **AI-450-MS** designed by SE «Ivchenko-Progress» and produced by «Motor Sich» motor-building plant.

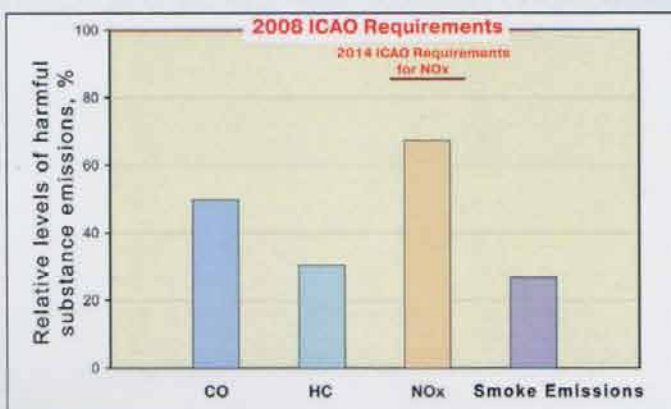
The APU life period is 16000 flight hours and 32000 cycles.

## Ecological compatibility and Security

### Noise level in the aircraft compartments



### D-436-148 engines emissions



### The AN-158 meets the requirements of:

- ICAO Annex 16 (Volume I. Chapter 4 "Preservation of the environment. Aircraft noise");
- 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.

## After-sale support

**ANTONOV Company renders** a full package of after-sale support for the AN-158 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-158 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-158 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-158 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-158 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-158 aircraft. *Contacts:*

*E-mail: [support@antonov.com](mailto:support@antonov.com)*

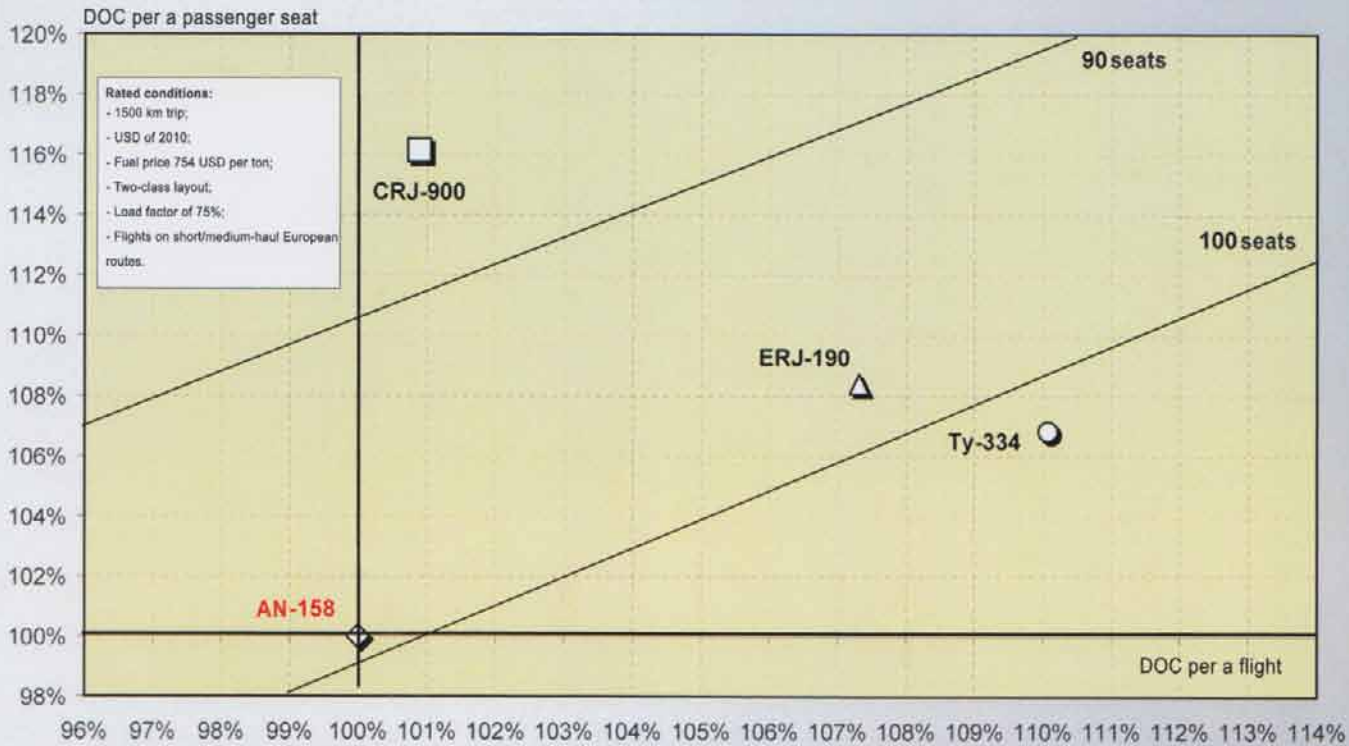
*Phone/fax: +38 (044) 400 97 76*

**An informational web-portal has been established for Customers and MROs :**  
**[www.support.antonov.com](http://www.support.antonov.com)**



Special regional MRO centres for the AN-158 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



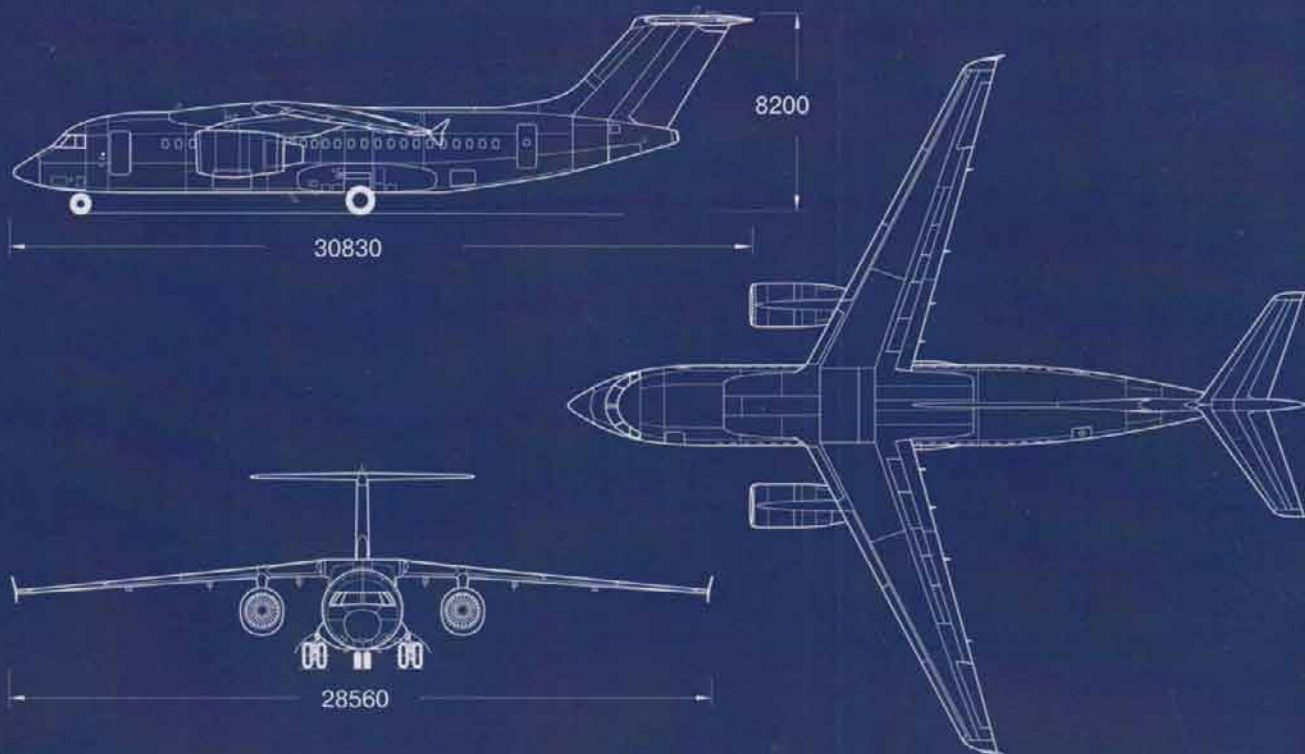
## Partnership for mutual success

214 enterprises of 15 countries of the world are involved into the AN-158 programme

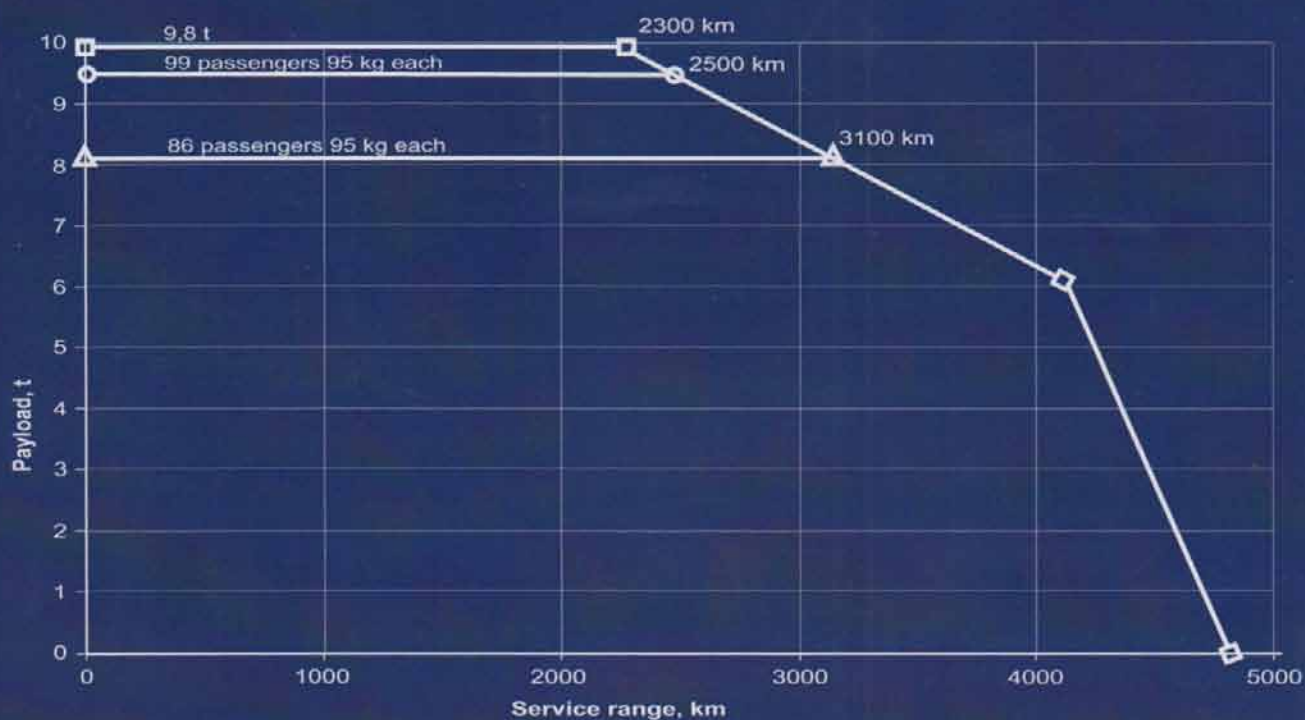


Final assembly of the AN-158 is carried out at ANTONOV Serial Plant. At the same time some components of the airframe are being manufactured at enterprises of Russia.





Maximum passenger capacity, pax	99
Maximum payload, t	9,8
Maximum flight speed, km/h	870
Maximum cruising flight altitude, m	up to 11600
Fuel consumption per hour, (flight cycle), kg/h	1750-1800
Aerodrome elevation, (ISA), m	1500
Operational temperatures range (on the ground)	-55 °C ... +45 °C
Required runway length, (ISA, SL, concrete), m	2000
ICAO Landing Category	III A
Required pavement strength of a concrete runway (MTOW)	PCN R/B=26,3
Service life, thousands hours/thousands flights	80/30





Uwe W. Jack

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