

European Aviation Safety Agency

EASA SPECIFIC AIRWORTHINESS SPECIFICATION

for

Antonov An-28

as specified in Section I

This Specific Airworthiness Specification is issued in accordance with Regulation (EC) 216/2008 Article 20(1)(b). There is no valid Type Certificate for this aircraft type. The Ukrainian type certificate holder is **Antonov Aeronautical Scientific and Technical Complex, Tupolev Str, Kiev, 03062, Ukraine.**

CONTENT

SECTION 1: Aircraft Design Definition

The An-28 airplane has:

- Airworthiness Certificate No. 11-28 issued 07.02.1986 by State Aviation Register of the USSR with Supplements No. 1 dated 21.08.1987; No. 2 dated 01.04.1988.; No. 3 dated 18.04.1988; CT 11-28/Д4 dated 28.04.1998; CT 11-28/Д5 dated 13.10.2003; CT 11-28/Д06 dated 29.05.2007.
- Type Certificate No. ТЛ 0023 issued 22.03.2002 by SAA of Ukraine.

- 1. Type Certificate holder:** Antonov Aeronautical Scientific and Technical Complex,
1, Tupolev str., Kiev, 03062, Ukraine
- 2. Airplane description:** The airplane features a high-wing monoplane configuration powered with two turboprop engines, with wing bracing strut, non-retractable landing gear, two fins are arranged at stabilizer ends.
The airplane may be readily converted into various versions.
- 3. Airplane category:** The transport category airplane is designed for transportation of passengers, baggage, mail and cargo along air routes, regional airlines by day and at night under VFR and IFR weather conditions, over land and water, over high and plain ground terrain, and in high latitudes.
- 4. Certification Basis:** Based on the *Decision on applicability of changes and Supplements to NLGS-2 to the An-28 airplane and application to the An-28 airplane of a portion of NLGS-3 requirements instead of the corresponding NLGS-2 requirements* dated 18.02.1985 approved by the Chairman of the Interdepartmental Commission for Airworthiness Requirements of the USSR, and Supplement No. 1 to it dated 29.10.1985, the following requirements apply to the airplane:
 - NLGS-2 with changes and supplements put into effect over a period of time from 1976 to 01.07.1984. (1И1 – 20И2);
 - *Temporary Supplements to NLGS-2 concerning light airplanes ($G \leq 10\,000$ kg)* approved by the Decision of the Interdepartmental Commission for Airworthiness Requirements of the USSR dated 30.07.1979;
 - 5.4.6. of NLGS-3 instead of 5.4.6. of NLGS-2;
 - 5.5.1. of NLGS-3 instead of 5.5.1. of NLGS-2;
 - 5.5.5. of NLGS-3 instead of 5.5.5. of NLGS-2;
 - 5.6. of NLGS-3 instead of 5.6. of NLGS-2;
 - 5.7. of NLGS-3 instead of 5.7. of NLGS-2;

- 5.8. of NLGS-3 instead of 5.8. of NLGS-2;
- 5.12. of NLGS-3 instead of 5.12. of NLGS-2;
- 7.5.3.1.3. of NLGS-3 instead of 7.5.3.1.4. of NLGS-2;
- 8.3.3.1. of NLGS-3 instead of 8.3.2.1. of NLGS-2.

The following requirements shall not be applied to the An-28 airplane:

- requirements of the Supplement to NLGS-2 para. 7.5.2.1.6. put into effect by Revision 6N1-7 about the availability of access doors on engine cowlings to supply extinguishant to the engine nacelle on the ground;
- requirements of NLGS-2 para. 5.11.12.4., as well as the Note to it, about the availability aboard the airplane of megaphones and means of two-way communication between the flight compartment and passenger compartment.

- 5. Manufacturer:** WSK Mielec, Poland
- 6. External noise characteristics:** Specified in the Certificate No. 23 for external noise of Aviation Register of the USSR dated 25.11.1988 (ICAO Annex 16, volume 1, edition 2, 1988, Chapter 10)
- 7. Engines:**
- Type: ТВД-10Б two-rotor turboprop engine with a gas generator and a free turbine.
The engine was certificated as a part of the airplane.
- Number: 2 (two)
- Designer: Omsk Engine Manufacturing Design Bureau JSC, Omsk, Russia.
- Manufacturers: WSK Rzeszów, Poland and WSK Kalisz, Poland
- Main data:**
- | | |
|--|------------------|
| Engine weight, kg | 230 +2% |
| Takeoff power (H=0, V=0, ISA), kW (hp) | 705 (960) |
| Engine operating time in percents from the established service life: | |
| - at takeoff power | no more than 6% |
| - at rated power | no more than 40% |
| - with the air bleed to wing and tail unit anti-icing system activated | no more than 25% |
| Continuous operation time limit, min.: | |
| - takeoff power | no more than 6 |
| - rated power | no more than 60 |
- Engine operation and limitations: Specified in the An-28 Airplane Flight Manual

(section 8.1) and the ТВД-10 Engine Operation and Maintenance Manual.

8. Propeller:

Type: AB-24AH, three-blade, tractor, variable-pitch, feathering, reversible-pitch.
The propeller was certificated as a part of the airplane.

Number: 2 (two)

Designer: AEROSILA Research and Production Company JSC, Stupino, Russia

Manufacturer: WSK Warszawa-Okecie, Poland

Main data:

Diameter, m: 2.8

Blade angles in the reference section (R=1000 mm):

- starting angle (φ_0), deg. - 1.5 ... - 3.5
- flight low-pitch stop angle, deg. 8
- feathered position angle, deg. 83
- maximum reverse angle, deg. - 16

Time to feather the propeller blades, s:

- in flight, maximum 7
- on the ground:
 - a) on the running engine max 10
 - b) on the inoperative engine max 20

Time to unfeather the propeller blades, s:

- in flight, maximum 15
- on the ground, maximum 25

Propeller operation and limitations:

Specified in the An-28 Airplane Flight Manual (AFM) (section 8.1)

9. Fuels used:

Domestic fuel grades:
- main: TC-1 (ГОСТ 10227-86);
- duplicate: T-1 and PT (ГОСТ 10227-86)

Foreign fuel grades:
Jet A-1 (DERD 2494) type and other fuels indicated in section 012 of the Airplane Flight Manual.

At an outside air temperature of 5°C and below, de-icing fluid "И" (ГОСТ 8313-88) shall be added to the fuel in the amount of $(0.1^{+0.05})$ % from the fuel volume.

It is permitted to use the above fuels with foreign counterparts of S-748 de-icing fluid in the amount of $(0.1^{+0.05})$ % from the fuel volume.

10. Oils used:

Main oil mixture: 75% of MK-8, MK-8П oil, ГОСТ 6457-66
+ 25% of MC-20, MK-22, ГОСТ 21743-76

Foreign oil mixture: 75% of Turbonycoil 321
+ 25% of Turbonycoil 308

Total oil quantity, l: 27.5

11. Airplane weight characteristics, kg:

- maximum taxi weight: 6530
- maximum takeoff weight: 6500
- maximum landing weight: 6500
- maximum fuel weight
($\rho=0.775 \text{ g/cm}^3$): 1520
- maximum payload weight: 1750

12. Indicated airspeed limitations, IAS, km/h:

Maximum operating limit speed
(V_{MO}): 350

Design diving speed 405

Maximum operating limit speed:
- in takeoff configuration ($\delta_f=15^\circ$) 200

- in landing configuration ($\delta_f=40^\circ$) 185

- in landing configuration with one
engine failed ($\delta_f=25^\circ$) 195

- with spoilers deflected 190

Minimum flying speed for airplane weight and flap settings is given in Table 2.4 of the An-28 Airplane Flight Manual.

13. Center of gravity range, % MAC:

- extreme forward CG limit 22

- extreme aft CG limit 33

Extreme center of gravity limits for airplane weight are shown in Fig. 2.2. of subsection 2.5 of the An-28 Airplane Flight Manual.

14. Maximum flight altitude, m:

- without oxygen equipment 3000

- with oxygen equipment 4200

15. Minimum flight crew:

2 persons
(pilot in command, co-pilot)

16. Maximum number of passengers:

- passenger version:	17 passengers
- at a duration of overwater flight of more than 30 minutes from the shore:	
- in case if four ПСП-6AK life rafts are aboard the airplane	14
- in case if two СП-12 life rafts are aboard the airplane	10
Maximum number of occupants shall not exceed the number of seats provided with seatbelts.	
17. Limit maneuver load factors, g:	
- in en-route configuration:	2.9
- in takeoff and landing configurations:	2
18. Aerodrome elevation, m:	Up to 1610
19. Outside air temperature at ground level, °C:	From minus 50 to plus 40
20. Maximum allowable wind speed, m/s:	
- at takeoff and landing with the runway free from precipitation:	
- headwind:	20
- tailwind:	4
- crosswind (at 90° to runway center line):	10
- at other wind angles to runway:	Indicated in Table 2.2 of AFM section 2
- during taxiing:	20
- at takeoff and landing from/to paved and unpaved runways, paved runways covered with a layer of water (up to 10 mm), slush or sleet (up to 12 mm), as well as unpaved runways with the sodden upper layer (slush layer of no more than 5 cm):	6
- on damp, wet and dry snow-covered paved runways (layer of snow up to 50 mm thick):	Indicated in Fig. 2.1 of AFM section 2
21. Runway condition:	
- paved runway:	- dry, precipitation-covered (wet, covered with water, covered with slush up to 12 mm thick, covered with new-fallen dry snow up to 50 mm thick) and snow-covered runways prepared according to ГА-80 Civil Aviation Aerodrome Service
- unpaved runway:	- dry, precipitation- and snow-covered runways prepared according to ГА-80 Civil Aviation Aerodrome Service. Sub-soil strength: a) no less than 3.5 kgf/cm ² for weights up to

- 6000 kg;
- b) no less than 5 kgf/cm² for weights up to 6500 kg;
- c) no less than 8 kgf/cm² in sub-layer on the unpaved runway with the sodden upper layer (slush layer of no more than 5 cm).

- 22. Flights under icing conditions:** The airplane is permitted to operate under icing conditions at outside air temperatures not lower than minus 20°C.
- 23. Time limits:** Specified in section 5.00.00 of the Airplane Maintenance Manual approved by the IAC Aviation Register (see item 25 below).
- 24. Other information on operating limitations, operating procedures and maintenance practices:** Can be found in the An-28 airplane operation and maintenance documentation approved by the IAC Aviation Register and put into effect by the State Aviation Administration of Ukraine (see item 25 below).
- 25. Operation and maintenance documentation:** The airplane shall be operated in accordance with the following documents approved by the IAC Aviation Register and put into effect by the State Aviation Administration of Ukraine:
- An-28 Airplane Flight Manual:
 - No. 28.00.0000.000.000 PЛ with Revisions No. 1 - 18;
 - An-28 Airplane Maintenance Manual:
 - No. 28.00.0000.000.000 PЭ with Supplement No. 087 PЭ;
 - An-28 Airplane Maintenance Schedule:
 - No. 28.00.0000.000.000 PO with Supplement No. 033 PO;
 - An-28 Airplane Weight and Balance Manual No. 28.00.0000.000.000 P3Л

26. Serial numbers of aircraft for which the Specific Airworthiness Specification is effective:

1АЙ001-01 ... 1АЙ001-05,
1АЙ002-01 ... 1АЙ002-10,
1АЙ003-01 ... 1АЙ003-15,
1АЙ004-01 ... 1АЙ004-20,
1АЙ005-01 ... 1АЙ005-25,
1АЙ006-01 ... 1АЙ006-25,
1АЙ007-01 ... 1АЙ007-25,
1АЙ008-01 ... 1АЙ008-25,
1АЙ009-01 ... 1АЙ009-20,
1АЙ010-01 ... 1АЙ010-04.

SECTION 2: Airworthiness Directives

The following Airworthiness Directive from SAA Ukraine shall be complied with:

ДЛП-0558-07	Лист АНТК № 6/4649 від 07.08.07	Тріщини стінки та профілів шп.29 в р-оні кріплення вузла керування РН	Ан-28, Ан-38	14.11.2007
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SECTION 3: Occurrence Reporting

The Specific Airworthiness Specification may be used as a basis for the issue of a Restricted Certificate of Airworthiness in accordance with 21A.173(b)(2) under the following conditions:

- a) The holder of a Restricted Certificate of Airworthiness based on this Specific Airworthiness Specification shall report to the State of Registry all information related to occurrences associated with the operation of the aircraft which affects or could affect the safety of operation¹.
- b) Such reports shall be despatched within 72 hours of the time when the occurrence was identified unless exceptional circumstances prevent this.
- c) The State of Registry shall forward the information received under (a) to the Agency when it relates to failures, malfunctions, defects or other occurrences which cause or might cause adverse effects on the continuing airworthiness of the aircraft.

¹ AMC 20-8 contains guidance describing the occurrences which are to be reported

SECTION 4: Other Limitations

This SAS is applicable only to aircraft registered in EU member states on Accession to the EU and cannot be extended to further imported aircraft.

This aircraft is limited to non-commercial operation.

SECTION 5: Change Record

Issue 1 Initial issue 30 April 2008

Issue 2 8 February 2010

Correction to reference number of Airplane Maintenance Schedule:

From: No. 28.00.0000.000.000 PO with Supplement No. 030 PO;

To: No. 28.00.0000.000.000 PO with Supplement No. 033 PO;