



TYPE CERTIFICATE DATA SHEET No. ER-2011T17

Type Certificate Holder:

KAMOV COMPANY
 8a, The 8th March Str.
 Lubertsy, Moscow region, 140007
RUSSIA

ER-2011T17
 Sheet 01

KAMOV COMPANY
 Ka-32A11BC

01 December 2011

This data sheet, which is part of Type Certificate No. 2011T17, prescribes conditions and limitations under which the product, for which the Type Certificate was issued, meets the airworthiness requirements of the Brazilian Aeronautical Regulations.

I - Model Ka-32A11BC (Restricted Category), approved 01 December 2011.

ENGINE Two engines Klimov Scientific and Industrial enterprise TV3-117VMA or TV3-117VMA series 02 (equivalent to TB3-11BMA or TB3-117BMA Series 02) Turboshaft engines, ANAC Engine Type Certificate Data Sheet EM-2005T01.

FUEL Kerosene Jet A, A-1 (ASTM D1655)
 High Flash JP4, JP5 (MIL-T-5624)

ENGINE LIMITS	Output Shaft Power (SHP)	Free Turbine Speed (Nf) %	Gas Producer Speed (Ng) %	Gas Temperature °C
Normal Operation				
Take Off (15 Min)	2200	89 (max) 87 (min)	101 (Max)	990
Maximum Continuous	1700	92 (Max) 88 (Min)	99 (Max)	955
One Engine Inoperative				
2 ½ Minute Limit	2400	89 (Max) 87 (Min)	101 (Max)	990
30 Minute Limit	2200	89 (Max) 87 (Min)	101	990
Continuous	1700	92 (Max)* 88 (Min)	99 (Max)** T* 84 (Max)** T*	955

*90.02% main rotor tachometer reading corresponds to 100% or 15000 rpm of Free Turbine

**100% gas generator tachometer reading corresponds to 19537.48 rpm of Gas Generator

T* - outside air temperature (99% for T* higher than +35°C and 84,4% for T* -60°C)

Other engine limitations see TCDS EM-2005T01.

ROTOR LIMITS	Power Off	Power On	Power On, OEI
	Maximum 98%	98%	98%
	Minimum 70%	83%	73%
	Refer to Rotorcraft Flight Manual for RPM Limitations		
AIR SPEED LIMITS	Never exceed (V_{ne}) at sea level:		
	- Power on	140 KIAS (260 Km/h)	
	- Power off	95 KIAS (180 Km/h)	
	V_{min} VFR Power on	27 KIAS at altitudes above hover ceiling	
	Min. Continuous during autorotation	54 KIAS (100 Km/h)	
CG RANGE	(a) Longitudinal C.G. limits (VRF)		
	VRF	Flight With external load	
	(+5000) to (+5310) mm	(±5000) to (5280) mm	
	(b) Lateral C.G. limits (VFR)		
	110 mm left of centerline,	110 mm right of centerline	
	Refer to KA-32A11BC Weight and Balance Manual for loading instructions.		
DATUM	Station 0 (datum) is located 5280 mm forward of rotor axis.		
EMPTY WEIGHT C.O. RANGE	Refer to Weight and Balance Report and logbook of each individual helicopter for Empty Weight C.G. position.		
ALTITUDE LIMITS	5000 m (16400 ft) pressure altitude. Refer to approved Rotorcraft Flight Manual for altitude limitations.		
MAXIMUM WEIGHTS	Maximum Takeoff Weight:		
	With internal load	11000 Kg (24200lb)	
	With external load	12700 Kg (27998 lb)	
MINIMUM CREW	Two (Pilot) for VFR, Category B operations		
PASSENGERS	No passengers allowed Nine – Persons essential to the aerial work being performed.		
FUEL CAPACITY	2450 liters total 2424 liters usable 26 liters unusable See Note 1 for requirements to include unusable fuel weight in certificated empty weight.		
	Left	Right	
	Tank No. 1	Tank No. 1	285 liters
	Tank No. 2	Tank No. 2	280 liters
	Tank No. 3+4	Tank No. 3+4	410 liters
	Tank No. 5	Tank No. 5	250 liters
	1212 liters total usable	1212 liters total usable	
	13 liters unusable	13 liters unusable	
	Auxiliary Front Tank (Tank No. 6)	Auxiliary Aft Tank (Tank No. 6)	
	500 liters total usable	500 liters total usable	
	With both Front and Aft Auxiliary Tanks:		
	When filler refueling total fuel quantity is 3450 liters, unusable fuel is 26 liters.		
	When pressure refueling (one point refueling) total fuel quantity is either 3080 liters or 1000 liters.		
	For both pressure refueling conditions, unusable fuel is 26 liters.		

OIL CAPACITY	90 liters. See Note 1 for requirements to include oil weight in certificated empty weight.
MAXIMUM CARGO LOAD	3700 Kg internal (see Note 5) 5000 Kg external
SERIAL NUMBERS ELIGIBLE	98-28 and after. A Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" must be submitted for each individual aircraft for which application for a Brazilian Certificate of Airworthiness is made.
IMPORT REQUIREMENTS	A Brazilian Airworthiness Certificate may be issued on the basis of a Export Certificate of Airworthiness signed by a representative of a local export Civil Aviation Authority containing the following statement: "The rotorcraft covered by this certificate has been examined, tested and found to conform to the type design approved under ANAC Type Certificate No. 2011T17, and to be in condition for safe operation".
CERTIFICATION BASIS	Brazilian Type Certificate No. 2011T17 issued on 01 December 2011 is based on: RBHA 29, which endorses the 14 CFR Part 29, effective on 06 December 1984, as amended by 29-1 thru 29-24; RBHA/14CFR Section 29.1459 at Amendment 29-25, effective on 11 October 1988; RBHA/14CFR Sections 29.954, 29.963, 29.991, 29.1011, 29.1027, at Amendment 29-26, effective on 3 October 1988; Noise requirements: RBHA 36, corresponding to ICAO Annex 16 Volume I, Chapter 8, Third edition, Amendment 4, 1993; IAC-AR Equivalent Levels of Safety adopted by ANAC as following: RBHA/14CFR 29.173(b) - Static longitudinal stability; and RBHA/14CFR Part 29 Appendix B VII (a)(2) - Stability augmentation system; RBHA/14CFR 29.177 - Static directional stability; and RBHA/14CFR Part 29 Appendix B V (a) - Static lateral-directional stability; and RBHA/14CFR 29.923(c) and 29.923(i) - Rotor drive system and control mechanism tests; RBHA/14CFR 29.1027(b)(1) - Transmission and gearboxes; RBHA/14CFR 29.1351(d)(3) - Electrical systems and equipment- general; RBHA/14CFR 29.1459(a)(5) - Flight data recorders; RBHA/14CFR Part 29 Appendix B VIII (b)(1) - Plate type static pressure sensors heating; The compliance not demonstrated with the following paragraphs of the RBHA/14 CFR and considered not necessary for issue of a Type Certificate – Restricted Category: RBHA/14 CFR 29.613(d) - Material Strength Properties and Design Values; and RBHA/14 CFR 29.1305(a)(14) - Powerplant Instrumentations.
PRODUCTION CERTIFICATION	IAC-AR Production Certificate No. OII27-IIBC for Kumertau Aircraft Production Enterprise – JSC "KumAPP", Kumertau, Russia (See NOTE 9).
REQUIRED EQUIPMENT	The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the helicopters. A Brazilian Ka-32A11BC Rotorcraft Flight Manual, issue 4, approved by the IAC-AR and accepted by ANAC should be carried on each aircraft.
LEVELING MEANS	Rotor axis to be vertical. See Maintenance manual for details.
ROTOR BLADE AND CONTROL MOVEMENTS	For rigging information refer to the Model Ka-32A11BC Maintenance Manual.

DATA PERTINENT TO ALL MODELS**NOTES:**

- NOTE 1** Weight and balance. Current weight and balance report including list of equipment and undrainable oil and unusable fuel included in the certificated empty weight, and loading instructions, when necessary, must be provided for each helicopter at the time of original certification. The certificated empty weight must include the total oil system capacity of 90 liters/90 kg (489 mm rearward to rotor axis) and the total unusable fuel of 26 liters/20 kg (rotor axis). Weight of deicing fluid is not included in empty weight.
- NOTE 2** Markings and placards. The following placard must be installed in front of and in clear view of the pilot: “This helicopter is approved for operation in compliance with the operating limitation specified in the approved Rotorcraft Flight Manual.” All required placards listed in the limitations Section of the Rotorcraft Flight Manual must be installed in the appropriate locations. All markings and placards for passenger information, external markings for emergency, and load limits in cargo/baggage compartments must be presented in Portuguese or bilingual. For the approved markings and placards translations contact the TC holder and/or ANAC at the following address: normas.aeronaves@anac.gov.br.
- NOTE 3** Continuing Airworthiness. See KA32A11BC-MSM-000 Master Service Manual, Original Issue (or later IAC AR approved revision), for inspections, mandatory retirement life information, and other requirements for continued airworthiness.
- NOTE 4** The differences of the Brazilian helicopter in relation to the basic IAC-AR type design are summarized below:
Supplement to Rotorcraft Flight Manual – Helicopters Operation in Brazil; and Markings and Placards (see Note 2).
- NOTE 5** Maximum internal cargo weight is limited to 3700 kg.
Maximum allowable floor loading for transport (cargo) compartment is limited to: 3000 kg/sq.m between frames No.4 to No.7; and 1500 kg/sq.m between frames No.7 to No.13.
- NOTE 6** The Supplements to the Brazilian Ka-32A11BC RFM approved by IAC-AR and accepted by the ANAC are the following:
Ka-32A11BC-Д-1.1 – External Cargo Operation;
Ka-32A11BC-Д-2.1 – Skis;
Ka-32A11BC-Д-3.1 – Emergency Floats;
Ka-32A11BC-Д-71.1 – Digital Pressure Altimeter БЕЭ-СВС-ИМ; and
Ka-32A11BC-Д-72.1 – Improved Indication System (2009).

The following Supplement to Brazilian Ka-32A11BC RFM has been approved by IAC-AR on behalf of the ANAC:
Ka-32A11BC-Д-73.1 – Helicopters Operation in Brazil.
- NOTE 7** The following major changes are incorporated in the Brazilian Ka-32A11BC Type Design:
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	Major Change Description	Type Design Change
36-32A/Д1	Replacement of PC-60 single chamber actuator on PC-60F dual chamber one	List No. 324.0000.0000.000D3
36-32A/Д2	Change of airworthiness limitation of the helicopter and its components	MM Change No. 1
36-32A/Д3	Change of airworthiness limitation of the PC-60F actuator	MM Change No. 2
36-32A/Д4	Change of airworthiness limitation of the rotor must bearings	MM Change No. 4
36-32A/Д5	Introduction of the carbon band into upper rotor blade design	Drawing 500.2906.8000.000BC MM Change No. 6
36-32A/Д6	Change of airworthiness limitation of the BP-252 gearbox	MM Change No. 8

NOTE 8 Auxiliary power unit: APU АИ-9.

NOTE 9 This Type Certificate issued to the Kamov Ka-32A11BC model is limited to new rotorcraft manufactured by the Kumertau Aircraft Production Enterprise - JSC "KumAPP" Plant only.



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