R44 helicopter models covered by the Type Certificate No. TB 0011

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Holder of the Type Certificate No. TB 0011

Robinson Helicopter Company
2901 Airport Drive, Torrance, California 90505, USA

This Data Sheet is integral part of Type Certificate No. TB 0011 and prescribes the conditions and limitations under which the product(s) for which the type Certificate was granted meet(s) the airworthiness requirements and environmental protection requirements, stated in Certification basis mentioned in this Data Sheet clause 1.2. section IV.
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I. General information

1. Category of aircraft: Normal Category Helicopter, category B

2. Type Certificate Holder: Robinson Helicopter Company (RHC), 2901 Airport Drive, Torrance, California 90505, USA

3. Manufacturer:
   3.1. Determination of manufacturer: Robinson Helicopter Company, 2901 Airport Drive, Torrance, California 90505, USA
   3.2. Approval of manufacturer: Certificate of manufacturer No. 424WE, issued by FAA February 11, 1993

II. Model R44

1. General information:
   1.1. Date of Application on Ukrainian Type Certificate issue: 04.10.2004
   1.2. Date of State Aviation Administration of Ukraine approval: 01.03.2006
   1.3. Date of reissue: 28.10.2013

2. Type Design:
   2.1. Type Design Definition: Type Design is defined by:
       - Main specification (Master Drawing List) No.0044 with approved by FAA revisions, and
       - List of Optional Equipment No. C025 with approved revisions.
   2.2. Equipment: On helicopter must be installed equipment in the applicable airworthiness the basis requirement and it is represented in main specification No. 0044 Robinson Helicopter Company

3. Certification Basis: See section IV.

4. Technical Characteristics and Operational Limitations:
   4.1. Engine:
   4.1.1. Type and quantity: One piston engine Lycoming O540- F1B5
   4.1.2. Type Design Approval by State Aviation Administration of Ukraine: See Type Certificate No. TD0031
4.1.3. Engine Limits:

(a) Takeoff (5 minutes): 225 hp at 2718 rpm (102% on Engine tachometer)
(b) Maximum continuous: 205 hp at 2718 rpm (102% on Engine tachometer)

Note: There is the maximum manifold pressure corresponding to horsepower rating in section 2 Rotorcraft Flight Manual (see c.5.1. section II of this Data Sheet)

4.2. Rotor Speed Limits:

(a) Power off:
   - maximum: 432 rpm (108% on Main Rotor tachometer)
   - minimum: 360 rpm (90% on Main Rotor tachometer)
(b) Power on:
   - maximum: 408 rpm (102% on Main Rotor tachometer)
   - minimum: 396 rpm (99% on Main Rotor tachometer)

4.3. Fuels:

(a) Fuel grades:
   - 91 (High octane number gasoline for carburetor engines) TU38.5901481-96 (Ukraine);
   - B91/115 grade aviation fuel (Russia);
   - grades not less than 100LL and 100/130 in accordance with Textron Lycoming Instruction 1070 and specification ASTM-D910.

(b) Fuel capacities:
   - main tank: 120 l (31.6 gal.), usable 116 l (30.6 gal.);
   - auxiliary tank: 70 l (18.5 gal.), usable 69 l (18.3 gal.).

4.4. Oils:

(a) Oil grades:
   - for engine: in accordance with Textron Lycoming Service Instruction 1014

(b) Oil capacities:
   - Engine: 8.5 l (9 qt.);
   - Main Rotor Transmission: 1.9 l (2 qt.);
   - Tail Rotor Transmission: 0.1 l (0.11 qt.);
   - Hydraulic Reservoir (if installed): 0.62 l (0.65 qt.).

4.5. Indicated Airspeed Limits at sea level:
4.5.1. V_{NE} - never exceed airspeed:
(a) for takeoff gross weights 1000 kg
   (2200 lbs.) or less:
   130 KIAS (240 km/h IAS);
   120 KIAS (220 km/h IAS) – with fixed floats
(b) for takeoff gross weights over
   1000 kg (2200 lbs.):
   120 KIAS (220 km/h IAS)
   110 KIAS (205 km/h IAS) – with fixed floats
(c) for power off (autorotation):
   100 KIAS (185 km/h IAS)
Note: Reduction V_{NE} depending on altitude and temperature of external air – in accordance with the section 2 of Rotorcraft Flight Manual (see c.5.1. section II this of Data Sheet).

4.5.2. V_{min} - minimum speed:
50 KIAS (95 km/h IAS) with the exception for takeoff and landing

4.5.3. Airspeed limit at power settings above Maximum Continuous Power:
100 KIAS (185 km/h IAS)

4.5.4. Airspeed limit for any combination of Doors Off:
100 KIAS (185 km/h IAS)

4.5.5. Airspeed limit with inflated pop-out floats:
80 KIAS (150 km/h IAS)

4.6. Weight Limitations:
4.6.1. Maximum weight:
1089 kg (2400 lbs.)

4.6.2. Minimum weight:
703 kg (1550 lbs.)

4.6.3. Maximum Baggage:
22.5 kg (50 lbs.) of baggage and installed equipment in any baggage compartment.
For any seat location, the maximum combined weight of the seat load, baggage and installed equipment is 135 kg (300 lbs.)

4.7. Center of Gravity Range:
4.7.1. Center of Gravity Datum:
Datum line is 254 cm (100 in.) forward of main rotor shaft centerline.

4.7.2. Center of Gravity Limitation:
In accordance with section 2 of Rotorcraft Flight Manual (see c.5.1. section II this of Data Sheet).

4.8. Operational Altitude:
4.8.1. Maximum pressure altitude:
4270 m (14000 ft.).
Maximum altitude above ground level is 2700 m (9000 ft.) to allow landing within 5 minutes in case of fire.

4.8.2. Maximum pressure altitude of flight without oxygen equipment:
- without passengers: 3000 m (9850 ft.)
- with passengers: 2400 m (7900 ft.)

Note: In the case of oxygen equipment, utilization it's installation on helicopter must be approved by State Aviation Administration of Ukraine.

4.9. Ambient air Temperature: from +40° C to -30° C.

4.10. Minimum Flight Crew: 1 pilot in forward right seat.

4.11. Maximum Occupants: 4 (including the members of crew).

4.12. Placards and marking: Stencils, inscriptions and tablets must be set in definite places, as that are marked in approved RFM and Supplements.

5. Operational documentation:

5.1. For flight operation:
- R44 Pilot's Operating Handbook and FAA approved Rotorcraft Flight Manual (RTR 461) dated December 10, 1992, or later approved revision;
- Ukrainian Supplement to POH RTR 461 (see section 9 POH) dated March 28, 2006;
- see also Note 1, section V.

5.2. Airworthiness Instructions:
- Maintenance manual and Instructions for Continued Airworthiness (RTR 460);
- see also Note 2, section V.

5.3. For technical service:

6. Notes:

1) Eligible serial numbers: 0002 and from 0004 to 9999 inclusive, with the exception of the number 1140.

2) Descriptions of noise: the sound exposure level is 81.3 dB(A).

III. Model R44II

1. General information

1.1. Date of Application on Ukrainian Type Certificate issue: 04.10.2004

1.2. Date of State Aviation Administration of Ukraine approval: 01.03.2006

1.3. Date of reissue: 28.10.2013
2. Type Design:

2.1. Type Design Definition: Type Design is defined by:
- Main specification (Master Drawing List) No. 0044 with approved by FAA revisions, and
- List of Optional Equipment No. C025 with approved revisions.

2.2. Equipment: On a helicopter must be the equipment is set, that answers the base requirements of norms of flying fitness and it is represented at main specification No. 0044 Robinson Helicopter Company.

3. Certification Basis: See section IV.

4. Technical Characteristics and Operational Limitations:

4.1. Engine:

4.1.1. Type and quantity: One piston engine Lycoming IO – 540 - AE1A5

4.1.2. Type Design Approval by State Aviation Administration of Ukraine: See Type Certificate No. TD0032

4.1.3. Engine Limits:

(a) Takeoff (5 minute):
- maximum: 245 hp at 2718 rpm (102% on Engine tachometer)

(b) Maximum continuous:
- maximum: 205 hp at 2718 rpm (102% on Engine tachometer)

Note: There is the maximum manifold pressure corresponding to horsepower rating in section 2 Rotorcraft Flight Manual (see c.5.1. section III of this Data Sheet)

4.2. Rotor Speed Limitation:

(a) Power off:
- maximum: 432 rpm (108% on Main Rotor tachometer)
- minimum: 360 rpm (90% on Main Rotor tachometer)

(b) Power on:
- maximum: 408 rpm (102% on Main Rotor tachometer)
- minimum: 404 rpm (99% on Main Rotor tachometer)

4.3. Fuels:

(a) Fuel grades:
- Aviation gasoline:
  - Б 95/130 (Russia);
  - grades not less than 100LL and 100/130 in accordance with Textron Lycoming Instruction 1070 and specification ASTM-D910.
(b) Fuel capacities:
- main tank: 120 l (31.6 gal.), usable 116 l (30.6 gal.);
- auxiliary tank: 70 l (18.5 gal.), usable 69 l (18.3 gal.).

4.4. Oils:
(a) Oil grades:
- for engine: in accordance with Textron Lycoming Service Instruction 1014
- for Main and tail Rotor Transmission: Robinson A257-2 Lubricant.
(b) Oil capacities:
- Engine: 8.5 l (9 qt.);
- Main Rotor Transmission: 1.9 l (2 qt.);
- Tail Rotor Transmission: 0.1 l (0.11 qt.);
- Hydraulic Reservoir (if installed): 0.62 l (0.65 qt.).

4.5. Indicated Airspeed Limits at sea level:
4.5.1. V_{ne} - never exceed airspeed:
(a) for takeoff gross weights 1000 kg (2200 lbs.) or less:
   130 KIAS (240 km/h IAS);
   120 KIAS (220 km/h IAS) – with fixed floats
(b) for takeoff gross weights over 1000 kg (2200 lbs.):
   120 KIAS (220 km/h IAS)
   110 KIAS (205 km/h IAS)) – with fixed floats
(c) Power Off (Autorotation): 100 KIAS (185 km/h IAS)

Note: Reduction V_{ne} depending on altitude and temperature of external air – in accordance with the section 2 of Rotorcraft Flight Manual (see c.5.1. section III this of Data Sheet).

4.5.2. V_{min} - minimum speed: 50 KIAS (95 km/h IAS) with the exception for takeoff and landing

4.5.3. Airspeed limit at power settings above Maximum Continuous Power: 100 KIAS (185 km/h IAS)
4.5.4. Airspeed limit for any combination of Doors Off: 100 KIAS (185 km/h IAS)

4.5.5. Airspeed limit with inflated pop-out floats: 80 KIAS (150 km/h IAS)

4.6. Weight Characteristics:
4.6.1. Maximum weight: - 1135 kg (2500 lbs.);
- 1089 kg (2400 lbs.) for intentional water landings with fixed or pop-out floats.

4.6.2. Minimum weight: 730 kg (1600 lbs.)

4.6.3. Maximum Baggage: 22.5 kg (50 lbs.) of baggage and installed equipment in any baggage compartment.
For any seat location, the maximum combined weight of the seat load, baggage and installed equipment is 135 kg (300 lbs.)

4.7. Center of Gravity Range:
4.7.1. Center of Gravity Datum: Datum line is 254 cm (100 in.) forward of main rotor shaft centerline.

4.7.2. Center of Gravity Limitation: In accordance with section 2 of Rotorcraft Flight Manual (see c.5.1. section III this of Data Sheet).

4.8. Operational Altitude:
4.8.1. Maximum pressure altitude: 4270 m (14,000 ft.).
Maximum altitude above ground level is 2700 m (9000 ft.) to allow landing within 5 minutes in case of fire.

4.8.2. Maximum pressure altitude of flight without oxygen equipment:
- without passengers: 3000 m (9850 ft.)
- with passengers: 2400 m (7900 ft.).

Note: In the case of oxygen equipment, utilization it's installation on helicopter must be approved by State Aviation Administration of Ukraine.

4.9. Ambient air Temperature: from +40°C to -30°C.
4.10. Minimum Flight Crew: 1 pilot in forward right seat.

4.11. Maximum Occupants: 4 (including the members of crew).

4.12. Placards and marking: Stencils, inscriptions and tablets must be set in definite places, as that are marked in approved RFM and Supplements.

5. Operational documentation:

5.1. For flight operation: - R44 Pilot's Operating Handbook and FAA approved Rotorcraft Flight Manual (RTR 462) dated October 03, 2002, or later approved revision;
- Ukrainian Supplement to POH RTR 461 (see Section 9 POH) dated March 28, 2006;
- see also Note 1, Section V.

5.2. Airworthiness Instructions: - Maintenance manual and Instructions for Continued Airworthiness (RTR 460);
- see also Note 2, Section V.

5.3. For technical service: See Note 2, Section V.

6. Notes:

1) Eligible serial numbers: 1140, 10001 and subsequent

2) Descriptions of noise: The sound exposure level is 81.0 dB(A).

IV General data for models R44 and R44 II

1. Certification basis:

1.1. Certification basis of primary certification: As definite in FAA Type Certificate Data Sheet No. N11NM.
1.2. Certification basis of Ukraine:

Compliance with Certification basis of primary certification and additional technical conditions of Ukraine guarantee compliance by acting in Ukraine:
- Aviation Regulation, part 27, except for §27.562 and

V. Notes

1) Maintenance Works and Instruction for Continued Airworthiness:

(a) Necessary information is contained in Maintenance Manual and Instructions for Continued Airworthiness – MM (RTR 460) for satisfactory technical maintenance of helicopters, including retirement time of critical components.

(c) Retirement time of critical parts and periodicity of aggregates and component maintenance indicated in Section 4 "Airworthiness Limitations" (RTR 460). Volume of Retirement or time of service and periodicity of service can not be changed without the concordance with State Aviation Administration.

2) Conditions operation:

(a) Flights execution on geographical breadths over 60° is allowed under condition of establishment of system GPS (it is foreseen drawing C025).

(b) Flights in conditions of possible icing is prohibited.

3) Flights over water:

(a) Flights over-water to execute in jackets by aboard all persons.

(b) Over-water operation beyond 30 minutes flying time from land is prohibited.
4) Obligatory equipment: Helicopters which are registered in State Civil Aircraft Register of Ukraine should be equipped by:
(a) emergency locator beacon, which work on 406 MHz frequency (RHC drawing No.C025) or P-855A1 emergency radio transceiver, that should be placed in the baggage compartment under pilot’s seat;
(b) Clock which indicate hours, minutes and seconds (RHC drawing No.C025);
(c) VHF radio station (RHC drawing No.C025);
(d) Air traffic control transponder (RHC drawing No.C025);
(e) indicator of angles of a roll and pitch (RHC drawing No.C025);
(f) accessory box for first-aid kit stowage at accessible for pilot place (RHC drawing No. D417-1).

5) Additional Conditions: On helicopter must be executed all obligatory bulletins, that are given by firm Robinson Helicopter Company before issue of aircraft Type Certificate by State Aviation Administration of Ukraine.

Head of Aeronautical Products Type Certification Department

Sergiy Haidenko