

Japan Civil Aviation Bureau

Ministry of Land, Infrastructure, Transport and Tourism

Type Certificate Data Sheet

No. 47

No. 47
Rev.6
ROBINSON
R44
R44 II
October 25, 2024

This data sheet which is part of Type Certificate No. 47 prescribes the conditions and limitations under which the product(s) for which the Type Certificate was granted meet(s) the standards of airworthiness required by the Civil Aeronautics Law and Regulations of Japan.

Type Certificate Holder: Robinson Helicopter Company
2901 Airport Drive
Torrance, California 90505
U.S.A.

1. Model R44 Helicopter (Normal Category), Approved November 15, 2002

Model R44 helicopters with serial numbers below 10000 are configured with four seats. Model R44 helicopters with serial number 30001 and subsequent are configured with two seats. Some limitations are configuration specific as indicated below. The Rotorcraft Flight Manual is also configuration-specific and has manufacturer's document number RTR 461 for the four seat configuration and RTR 463 for the two seat configuration.

Engines One Lycoming O-540-F1B5

Fuel See Rotorcraft Flight Manual (RFM)

Engine Limits S/Ns below 10000:

Maximum continuous: 205 hp at 2,718 rpm (102%)
Takeoff (5 minute): 225 hp at 2,718 rpm (102%)

S/N 30001 and subsequent:

Maximum continuous: 185 hp at 2718 rpm (102%)
Takeoff (5 minute): 210 hp at 2718 rpm (102%)

For all S/Ns:

See appropriate Rotorcraft Flight Manual for manifold pressure settings corresponding to horsepower limits.

Rotor Speed Limits
(all S/Ns)

Power Off (Rotor Tach.)	Power On (Rotor Tach.)
Maximum: 432 rpm (108%)	Maximum: 408 rpm (102%)
Minimum: 360 rpm (90%)	Minimum: 404 rpm (101%) *

* Earlier R44s with tachometers showing an engine green arc range of 99% to 102% have a minimum power-on rotor speed of 396 rpm.

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Airspeed LimitsS/Ns below 10000:

VNE (never exceed speed) at sea level is 130 KIAS (120 KIAS with fixed floats) for takeoff gross weights of 2200 lbs. or less. VNE at sea level is 120 KIAS (110 KIAS with fixed floats) for takeoff gross weights over 2200 lbs.

S/N 30001 and subsequent:

VNE (never exceed speed) at sea level is 120 KIAS for all takeoff weights with or without fixed floats.

For all S/Ns:

Power Off (Autorotation) VNE at sea level is 100 KIAS.

For reduction of VNE with altitude and temperature, see appropriate Rotorcraft Flight Manual.

Airspeed limit at power settings above Maximum Continuous Power is 100 KIAS.

Airspeed limit with inflated pop-out floats is 80 KIAS.

Airspeed limit for any combination of Doors Off is 100 KIAS.

C.G. RangeS/Ns below 10000:

Longitudinal C.G. Range			Lateral C.G. Range		
Gross Weight (lbs.)	Forward (in.)	Aft (in.)	Long. CG (in.)	Left (in.)	Right (in.)
1,550	92.0	102.5	92.0	-3.0	+3.0
2,000	92.0	102.5	100.0	-3.0	+3.0
2,200	92.0	100.25	102.5	-1.5	+1.5
2,400	93.0	98.0			

Note: Straight line variation between points shown.

S/Ns 30001 and subsequent:

Longitudinal C.G. Range			Lateral C.G. Range		
Gross Weight (lbs.)	Forward (in.)	Aft (in.)	Long. CG (in.)	Left (in.)	Right (in.)
1,550	92.0	102.5	92.0	-3.0	+3.0
2,000	92.0	102.5	100.0	-3.0	+3.0
2,200	92.0	100.25	102.5	-1.5	+1.5

Note: Straight line variation between points shown

Empty Weight C.G. Limit

For all S/Ns, Empty weight C.G. must be such that calculated C.G. with 150 lb. pilot and full fuel is at STA 102.5 or forward.

Maximum WeightS/Ns below 10000:

2400 lb.

S/N 30001 and subsequent:

2200 lb.

14 CFR § 27.427 at Amendment 27-27

14 CFR § 27.613, § 27.629 and § 27.663 at Amendment 27-26

Noise Requirements

Japanese Civil Aeronautics Regulations Annex 2, Chapter 7 (equivalent to ICAO Annex16, Vol. 1, Chapter 11)

Equivalent Safety Finding

Number TD10352LA-R/S-1

14 CFR Part 27.1401(d), Anticollision Light System

Number AT16516LA-R-S-1

14 CFR part 27.695(a)(1), Power boost and power-operated control system.
(see Note 10)

(Reserved)

Special Condition

No.27-033-SC Robinson Model R44 and R44 II Helicopters, Installation of HeliSAS Autopilot and Stabilization Augmentation System (AP/SAS).

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (See Certification Basis) must be installed in the aircraft for certification. In addition, the following JCAB-approved Rotorcraft Flight Manual is required:

S/Ns below 10000:

R44 Rotorcraft Flight Manual (RTR 461) dated December 10, 1992, or later revision (See NOTES 4, 5, & 6).

S/N 30001 and above:

R44 Cadet Rotorcraft Flight Manual (RTR 463) dated April 29, 2016, or later revision.

2. Model R44II Helicopter (Normal Category), Approved February 10, 2003

The R44II helicopter changes to a fuel injected engine with a 245 hp takeoff rating and a maximum weight of 2500lb. The Rotorcraft Flight Manual has manufacturer's document number RTR 462.

Engines

One Lycoming O-540-AE1A5

Fuel

See Rotorcraft Flight Manual (RFM)

Engine Limits

Maximum continuous: 205 hp at 2,718 rpm (102%)

Takeoff (5 minute): 225 hp at 2,718 rpm (102%)

See Rotorcraft Flight Manual for manifold pressure settings corresponding to horsepower limits.

Rotor Speed Limits

Power Off (Rotor Tach.)	Power On (Rotor Tach.)
Maximum: 432 rpm (108%)	Maximum: 408 rpm (102%)
Minimum: 360 rpm (90%)	Minimum: 404 rpm (101%)

Airspeed Limits

VNE (never exceed speed) at sea level is 130 KIAS (120 KIAS with fixed floats) for takeoff gross weights of 2200 lbs. or less. VNE at sea level is 120 KIAS (110 KIAS with fixed floats) for takeoff gross weights over 2200 lbs.

Power Off (Autorotation) VNE at sea level is 100 KIAS.

For reduction of VNE with altitude and temperature, see Rotorcraft Flight Manual.

Airspeed limit at power settings above Maximum Continuous Power is 100 KIAS.

Airspeed limit with inflated pop-out floats is 80 KIAS.

Airspeed limit for any combination of Doors Off is 100 KIAS.

C.G. Range

Longitudinal C.G. Range			Lateral C.G. Range		
Gross Weight (lbs.)	Forward (in.)	Aft (in.)	Long. CG (in.)	Left (in.)	Right (in.)
1,600	92.0	102.5	92.0	-3.0	+3.0
2,100	92.0	102.5	100.0	-3.0	+3.0
2,300	92.0	100.25	102.5	-1.5	+1.5
2,500	93.0	98.0			

Note: Straight line variation between points shown.

Empty Weight C.G. Limit

Empty weight C.G. must be such that calculated C.G. with 150 lb. pilot and full fuel is at STA 102.5 or forward.

Maximum Weight

2500 lb. (1,134 kg)

2400 lb. (1,089 kg) for intentional water landings with fixed or pop-out floats.

Minimum Crew

1 pilot in forward right seat.

Number of Seats

4 (3 for Police and ENG Versions)

Seat Locations: Pilot and Forward Passenger at STA 49.5

Aft Passenger at STA 79.5

Maximum Baggage

50 pounds (23 kg) 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 300 lbs (136 kg).

Fuel Capacity

Tank	Tanks Without Bladders		Tanks With Bladders		Location (STA)
	Capacity (gal.)	Usable (gal.)	Capacity (gal.)	Usable (gal.)	
Main	31.6	30.6	30.5	29.5	106.0
Auxiliary	18.5	18.3	17.2	17.0	102.0

Oil Capacity

Component	Capacity (qt.)	Capacity (STA)
Engine	9	110.0
Main Rotor Transmission	2	100.0
Tail Rotor Transmission	0.11	327.0
Hydraulic Reservoir	0.65	117.0

Maximum Operation Altitude

Density Altitude Limit 14,000 ft.

Maximum altitude above ground level is 9000 ft. to allow landing within 5 minutes in case of fire.

Manufacturer's Serial Numbers

1140, 10001 thru 29999

Certification Basis

Japanese Civil Aeronautics Regulations Annex 1

Part IV of the TAIKUSEI-SHINSA-YORYO (JCAB Airworthiness Standards) dated April 4, 1992 (equivalent to 14 CFR Part 27, dated February 1, 1965, including Amendment 27-1 through 27-19) and 14 CFR Part 27, dated February 1, 1965, including Amendment 27-20 through 27-24.

For S/N 14364, 14385, 14387 thru 29999:

14 CFR §§ 27.952(a), 27.952(c), 27.952(f), 27.952(g), 27.963(g) (except with a

minimum puncture force of 250 pounds), and 27.975(b) as amended by Amendment 27-30.

The certification basis for areas changed or affected by F050-1 Symmetric Horizontal Stabilizer Installation includes the following regulations at later amendment:

14 CFR § 27.49(a), § 27.71 and § 27.75(a) at Amendment 27-44

14 CFR § 27.351 and § 27.391 at Amendment 27-34

14 CFR § 27.427 at Amendment 27-27

14 CFR § 27.613, § 27.629 and § 27.663 at Amendment 27-26

Noise Requirements

Japanese Civil Aeronautics Regulations Annex 2, Chapter 7 (equivalent to ICAO Annex16, Vol. 1, Chapter 11)

Equivalent Safety Finding

Number TD10352LA-R/S-1

14 CFR Part 27.1401(d), Anticollision Light System

Number AT16516LA-R-S-1

14 CFR part 27.695(a)(1), Power boost and power-operated control system. (see Note 10)

(Reserved)

Special Condition

No.27-033-SC Robinson Model R44 and R44 II Helicopters, Installation of HeliSAS Autopilot and Stabilization Augmentation System (AP/SAS).

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (See Certification Basis) must be installed in the aircraft for certification. In addition, the following JCAB-approved Rotorcraft Flight Manual is required:

R44 II Rotorcraft Flight Manual (RTR 462) dated October 3, 2002, or later revision.

DATA PERTINENT TO ALL MODELS

Datum

100 in. forward of main rotor centerline.

Leveling Means

Refer to the R44 Maintenance Manual and Instructions for Continued Airworthiness (RTR 460).

Rotor Blade and Control Movements

Main Rotor blade angles at 75% radius:

Collective Pitch: 12.5°±1.0° total travel

Note: Collective low pitch to be established in accordance with the Maintenance Manual and Instructions for Continued Airworthiness (RTR 460) procedures to obtain proper autorotation RPM.

Cyclic Pitch:	Forward	13.50° to 14.25°
	Aft	13.50° to 14.25°
	Left	7.5° to 8.5°
	Right	6.0° to 7.0°

Tail Rotor blade angles at 75% radius:

Collective Pitch:	Full right pedal	15.5°to 16.5°
	Full left pedal	18.5°to 19.0°

Production Basis

FAA Production Certificate No. 424WE dated February 11, 1993.

GENERAL NOTES

- NOTE 1. A current weight and balance report, including a list of equipment included in the certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original airworthiness certification and at all times thereafter, except in the case of operators having an approved weight control system.
- NOTE 2. The following placard must be installed in clear view of the pilot:
 “THIS ROTORCRAFT APPROVED FOR DAY AND NIGHT VFR OPERATIONS”
 For additional placards, see the Rotorcraft Flight Manual. All placards required in the Rotorcraft Flight Manual must be installed in the appropriate locations.
- NOTE 3. Information essential to the proper maintenance of the helicopter, including retirement time of critical components, is contained in the Robinson R44 Maintenance Manual and Instructions for Continued Airworthiness (RTR 460). Retirement times are listed in the "AIRWORTHINESS LIMITATIONS" section.
- NOTE 4. R44 Rotorcraft Flight Manual Supplement “Float Landing Gear” is required when fixed float landing gear is installed.
- NOTE 5. R44 Rotorcraft Flight Manual Supplement 10 dated June 10, 1999, or later revision is required when emergency (pop-out) floats are installed.
- NOTE 6. Not applicable.
- NOTE 7. (Reserved)
- NOTE 8. (Reserved)
- NOTE 9. (Reserved)
- NOTE 10. Robinson Helicopter Company was granted AT16516LA-R-S-1 Equivalent Level of Safety (ELOS) finding to CFR §27.695(a)(1), dated July 17, 2017. The FAA concluded that the control valve design provided equivalent level of safety to the requirement intended by the regulation. Exemption No. 6692, dated October 17, 1997, has been removed. This exemption allowed RHC to obtain certification of the design change without considering the jamming of a control valve in the powered flight control system as a possible single failure. There is no impact to R44 helicopters in service.
- NOTE 11. Not applicable.
- NOTE J1. Dates of application for FAA and JCAB Type Certificate are as follows.
- | Model | FAA No.H11NM | JCAB No.47 |
|--------|-----------------|-------------------|
| R44 | March 4, 1987 | November 27, 2001 |
| R44 II | October 3, 2002 | February 10, 2003 |
- NOTE J2. This Type Certificate Data Sheet (TCDS) is based on FAA TCDS No.H11NM Rev. 11.
- NOTE J3. Lycoming O-540-F1B5 engine has JCAB Type Approval No.603.
 Lycoming IO-540-AE1A5 engine has JCAB Type Approval No.628.
- NOTE J4. JCAB-approved Rotorcraft Flight Manual shall be written in Japanese.
- NOTE J5. Specified placards shall be written in Japanese.
- NOTE J6. Installation of Global Positioning System for VFR requires JCAB-approved Flight Manual Supplement.
- NOTE J7. Installation of white strobe light requires JCAB-approved Flight Manual Supplement.

NOTE J8.Service Information:

Service Bulletins and maintenance manual, which contain a statement that the document is FAA approved, are accepted by the JCAB and are considered JCAB approved. These approvals pertain to the type design only.

NOTE J9.Import Requirement:

To be considered eligible for the operation in Japan, each aircraft manufactured under this Type Certificate must be accompanied by a Certificate of Airworthiness for Export or certifying statement endorsed by the exporting foreign civil authority which states the following (in the English language)

“The aircraft covered by this certificate has been examined, tested and found to conform to the type design approved under JCAB Type Certificate No. 47-2 and to be in a condition for safe operation.”

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