

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

H11NM Revision 10 Robinson R44 R44 II October 6, 2020
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TYPE CERTIFICATE DATA SHEET NO. H11NM

This data sheet, which is a part of Type Certificate No. H11NM, prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder: Robinson Helicopter Company
2901 Airport Drive
Torrance, California 90505

I. Model R44 (Normal Category Rotorcraft), Approved December 10, 1992

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.

Engine One Lycoming O-540-F1B5, Type Certificate number E-295

Fuel See Rotorcraft Flight Manual (RFM)

Engine Limits S/Ns below 10000:

Maximum continuous: 205 hp at 2718 rpm (102%)
Takeoff (5 minute): 225 hp at 2718 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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I. Model R44 (Normal Category Rotorcraft), Approved December 10, 1992, (cont'd)

Airspeed LimitsS/Ns below 10000:

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

S/N 30001 and subsequent:

V_{NE} (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) V_{NE} at sea level is 100 KIAS.

For reduction of V_{NE} 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.

Center of Gravity (C.G.) RangeS/Ns below 10000:

Longitudinal C.G. Range			Lateral C.G. Range		
Gross Weight (lbs.)	Forward (in.)	Aft (in.)	Long. C. G. (in.)	Left (in.)	Right (in.)
1550	92.0	102.5	92.0	-3.0	+3.0
2000	92.0	102.5	100.0	-3.0	+3.0
2200	92.0	100.25	102.5	-1.5	+1.5
2400	93.0	98.0			

Note: Straight line variation between points shown

S/N 30001 and subsequent:

Longitudinal C.G. Range			Lateral C.G. Range		
Gross Weight (lbs.)	Forward (in.)	Aft (in.)	Long. C. G. (in.)	Left (in.)	Right (in.)
1550	92.0	102.5	92.0	-3.0	+3.0
2000	92.0	102.5	100.0	-3.0	+3.0
2200	93.0	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.

I. Model R44 (Normal Category Rotorcraft), Approved December 10, 1992, (cont'd)

Minimum Crew 1 pilot at right side control station

Number of Seats S/Ns below 10000:
4 (3 for Police and ENG Version)

Seat Locations: Pilot and Forward Passenger at STA 49.5
Aft Passengers at STA 79.5

S/N 30001 and subsequent:
2

Seat Locations: STA 49.5

Maximum Baggage 50 pounds 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.

For S/N 30001 and subsequent, maximum load on aft deck is 50 lbs each side, and maximum load in each compartment under aft deck is 50 lb.

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.)	Location (STA)
Engine	9	110.0
Main Rotor Transmission	2	100.0
Tail Rotor Transmission	0.11	327.0
Hydraulic Reservoir (if installed)	0.65	117.0

Maximum Operating 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 0002, 0004 thru 9999 except 1140, 30001 and subsequent.

Certification Basis 14 CFR Part 27, dated February 1, 1965, including Amendments 27-1 through 27-24, Exemption No. 5473 dated July 2, 1992, to §27.955(a)(7) and 27.1305(q).

For S/N 2611 thru 9999, 30061, 30066 and subsequent:

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 (see Note 11).

14 CFR Part 36 Amendment 36-20.

Equivalent Safety Findings:

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)

I. Model R44 (Normal Category Rotorcraft), Approved December 10, 1992, (cont'd)

For S/N 2611 thru 9999, 30061, 30066 and subsequent:
 Number AT17187LA-R/P-1
 14 CFR part 27.952(c)(1)(i) Breakaway coupling separation load (see Note 11)

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 FAA-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.

II. Model R44 II (Normal Category Rotorcraft), Approved October 3, 2002

The R44 II helicopter includes a fuel injected engine with a 245 hp takeoff rating and a maximum weight of 2500 lb. The Rotorcraft Flight Manual has manufacturer's document number RTR 462.

Engine

One Lycoming IO-540-AE1A5, Type Certificate number 1E4

Fuel

See Rotorcraft Flight Manual (RFM)

Engine Limits

Maximum continuous: 205 hp at 2718 rpm (102%)
 Takeoff (5 minute): 245 hp at 2718 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

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

Power Off (Autorotation) V_{NE} at sea level is 100 KIAS.

For reduction of V_{NE} 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.

II. Model R44 II (Normal Category Rotorcraft), Approved October 3, 2002, (cont'd)

Center of Gravity (C.G.) Range

Longitudinal C.G. Range			Lateral C.G. Range		
Gross Weight (lbs.)	Forward (in.)	Aft (in.)	Long. C. G. (in.)	Left (in.)	Right (in.)
1600	92.0	102.5	92.0	-3.0	+3.0
2100	92.0	102.5	100.0	-3.0	+3.0
2300	92.0	100.25	102.5	-1.5	+1.5
2500	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.
2400 lb. 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 Passengers at STA 79.5

Maximum Baggage

50 pounds 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.

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.)	Location (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 Operating 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

14 CFR Part 27, dated February 1, 1965, including Amendments 27-1 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 (see Note 11).

14 CFR Part 36 Amendment 36-24.

Equivalent Safety Findings:

Number TD10352LA-R/S-1

14 CFR Part 27.1401(d), Anticollision Light System

II. Model R44 II (Normal Category Rotorcraft), Approved October 3, 2002, (cont'd)

Number AT16516LA-R-S-1
 14 CFR Part 27.695(a)(1), Power boost and power-operated control system (see Note 10)

For S/N 14364, 14385, 14387 thru 29999:
 Number AT17187LA-R/P-1
 14 CFR Part 27.952(c)(1)(i) Breakaway coupling separation load (see Note 11)

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 FAA-approved Rotorcraft Flight Manual is required:

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

DATA PERTINENT TO BOTH 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: $12.5^{\circ} \pm 1.0^{\circ}$ 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

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 5 dated July 17, 1996, or later revision is required when 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. R44 Rotorcraft Flight Manual with revisions through November 5, 1999, or later revision is required when hydraulically-booster main rotor flight controls are installed.
- NOTE 7. Deleted as of April 29 2016.
- NOTE 8. Deleted as of April 29, 2016.
- NOTE 9. Deleted as of February 13, 2015.
- 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. To operate in U.S. airspace, the following helicopter serial numbers meet the crash resistant fuel system certification basis requirements per section 44737 of Title 49 U.S.C.: Model R44, S/N 2611 thru 9999, 30061, 30066 and subsequent; Model R44 II, S/N 14364, 14385, 14387 thru 29999.

END