TYPE CERTIFICATE
DATA SHEET

No. EASA.IM.R.507

for
R66

Type Certificate Holder
Robinson Helicopter Company

2901 Airport Drive
Torrance, CA 90505
U.S.A.

For Model: R66
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SECTION 1: R66

I. General

1. Type/ Model/ Variant
   1.1 Type
   R66
   1.2 Model
   R66

2. Airworthiness Category
   Small Rotorcraft

3. Manufacturer
   Robinson Helicopter Company
   2901 Airport Drive
   Torrance, California 90505, USA

4. Type Certification Application Date
   to FAA: 6 September 2006
   to EASA: 19 May 2010

5. State of Design Authority
   FAA

6. Type Certificate Date by TCCA
   by FAA: 25 October 2010

7. Type Certificate n° by TCCA
   by FAA: R00015LA-R

8. Type Certificate Data Sheet n°
   by FAA: R00015LA-R

9. EASA Type Certification Date
   30 April 2014

II. Certification Basis

1. Reference Date for determining the applicable requirements
   8 May 2009

2. Airworthiness Requirements
   CS 27, Amdt. 2, dated 17 November 2008

3. Special Conditions
   CS 27.1309 Installation of HeliSAS AP - EASA Type Certification Basis requirements applicable to Equipment, systems, and installations. (F-01)

4. Exemptions
   none

5. Deviations
   none

6. Equivalent Safety Findings
   CS 27.695(a)(1) Power boost and power-operated control system (D-01)

7. Requirements elected to comply
   none

8. Environmental Protection Requirements
   8.1 Noise Requirements
   see TCDSN EASA.IM.R.507

9. Operational Suitability Data (OSD)
   see SECTION 2 below

III. Technical Characteristics and Operational Limitations

1. Type Design Definition
   RHC Drawing F001

2. Description
   Main rotor: 2-blade, free to teeter and cone, rigid in-plane
   Tail rotor: 2-blade, free to teeter, rigid in-plane
   Fuselage: Riveted aluminium sheet and welded steel tube for primary structure, fiberglass & thermoplastic for secondary structure. Seats integral to cabin structure.
   Landing gear: Aluminium skids
   Powerplant: Single turbine
   Avionics: Analogue or EFIS
3. Equipment

Basic equipment must be installed and operational prior to registration of the helicopter.
Optional equipment per RHC drawing F025.

4. Dimensions

4.1 Fuselage
Length: 11.66 m
Width hull: 1.47 m
Height: 3.48 m

4.2 Main Rotor
Diameter: 10.06 m

4.3 Tail Rotor
Diameter: 1.52 m

5. Engine

5.1 Model
Rolls-Royce
1 x 250-C300/A1

5.2 Type Certificate
FAA TC/TCDS n°: E4CE
EASA TC/TCDS n°: EASA.IM.E.052

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

<table>
<thead>
<tr>
<th>TQ limits [% (hp)]</th>
<th>Gas generator N₁ [rpm (%)]</th>
<th>PWR turbine N₂ [rpm (%)]</th>
<th>Temperature MGT [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP (5 min)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 (270)</td>
<td>53 519 (105)</td>
<td>6 076 (101)</td>
<td>782</td>
</tr>
<tr>
<td>MCP</td>
<td>83 (224)</td>
<td>53 519 (105)</td>
<td>706</td>
</tr>
<tr>
<td>Max. starting</td>
<td>- -</td>
<td>- -</td>
<td>927*</td>
</tr>
</tbody>
</table>

Note: *10 second limit above 782°C

5.3.2 Transmission Torque Limits

<table>
<thead>
<tr>
<th>Max. TQ [Nm]</th>
<th>PWR turbine N₂ [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP (5 min)</td>
<td>320</td>
</tr>
<tr>
<td>MCP</td>
<td>266</td>
</tr>
</tbody>
</table>

Note: *100% = 6 016 rpm

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel
Jet A or Jet A-1 conforming to ASTM D 1655,
Jet B conforming to ASTM D 6615,
JP-4 or JP-5 conforming to MIL-DTL-5624,
JP-8 conforming to MIL-DTL-83133

6.2 Oil
Engine: AS 5780 HPC
MRGB/TRGB: Robinson P/N A257-22

6.3 Additives
Anti-icing additive conforming to MIL-DTL-85470 must be added to Jet A, Jet A1, or Jet B when ambient temperature is below 4°C. Check with fuel supplier to determine if supply includes additive. If not, add per manufacturer’s instructions.

7. Fluid capacities

7.1 Fuel
Fuel tank capacity: 282 litres (74.6 US gal)
Usable fuel: 279 litres (73.6 US gal)

7.2 Oil
Engine: 5.7 litres (1.5 US gal)
MRGB: 1.9 litres (2 qt)
TRGB: 0.10 litres (0.11 qt)
Hydraulic reservoir: 0.62 litres (0.65 qt)
7.3 Coolant System Capacity
n/a

8. Air Speed Limitations

<table>
<thead>
<tr>
<th>Take-off Gross Weight</th>
<th>PWR on V_{NE} [KIAS]</th>
<th>PWR off V_{NE} [KIAS]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 998 kg</td>
<td>140</td>
<td>100</td>
</tr>
<tr>
<td>998 to 1 225 kg,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or Airborne Observation Helicopter version (any gross weight), or Pop-out Floats version (floats stowed, any gross weight)</td>
<td>130</td>
<td>100</td>
</tr>
</tbody>
</table>

Notes:
- MSL V_{NE} values shown above.
- For reduction of V_{NE} with altitude and temperature, see R66 Pilot’s Operating Handbook and EASA-approved RFM (RTR 661).
- Airspeed limit is 65 KIAS for power settings above 83% torque.
- Airspeed limit is 100 KIAS for any combination of doors off.
- See R66 Pilot’s Operating Handbook and FAA-approved Rotorcraft Flight Manual (RTR 661) for additional airspeed limitations associated with optional equipment installations.

9. Rotor Speed Limitations

<table>
<thead>
<tr>
<th>Condition</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[rpm*]</td>
<td>[%]</td>
</tr>
<tr>
<td>Power on</td>
<td>404</td>
<td>99</td>
</tr>
<tr>
<td>Power off</td>
<td>359</td>
<td>88</td>
</tr>
</tbody>
</table>

Note: *Main Rotor

10. Maximum Operating Altitude and Temperature

10.1 Altitude
14 000 ft (4 270 m) DA

10.2 Temperature
From −40°C to ISA+35°C, limited to +50°C

11. Operating Limitations
VFR day and night
Non-icing conditions

12. Maximum Mass
1 225 kg (2 700 lb) internal loading
1 315 kg (2 900 lb) external loading (see Note V.6)

13. Centre of Gravity Range

<table>
<thead>
<tr>
<th>Gross mass [kg]</th>
<th>Longitudinal C.G.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FWD limit [mm]</td>
</tr>
<tr>
<td>635</td>
<td>2 311</td>
</tr>
<tr>
<td>1 043</td>
<td>---</td>
</tr>
<tr>
<td>1 134</td>
<td>2 311</td>
</tr>
<tr>
<td>1 225</td>
<td>2 337</td>
</tr>
</tbody>
</table>
14. Datum

Longitudinal:
The datum plane (STA 0) is located at 2 540 mm (100 in) forward of main rotor centreline.

Lateral:
Fuselage median plane

15. Levelling Means

Refer to R66 Maintenance Manual, and, Instructions for Continued Airworthiness (RTR 660), Chapter 8

16. Minimum Flight Crew

1 pilot in forward right seat.

17. Maximum Passenger Seating Capacity

4

18. Passenger Emergency Exit

4, two on each side of the passenger cabin (intended for normal use)

19. Maximum Baggage/ Cargo Loads

Maximum mass: 136 kg (300 lb)
113 kg (250 lb) for Airborne Observation Helicopter version
90 kg (200 lb) with small auxiliary fuel tank installed
45 kg (100 lb) with large auxiliary fuel tank installed

Maximum loading: 244 kg/m² (50 lb/ft²)

Underseat baggage compartments:
Maximum mass: 23 kg (50 lb)
For any seat location, the maximum combined weight of the load on the seat (e.g. occupant) plus the weight of stowed items and any installed equipment in the underseat baggage compartment is 136 kg (300 lb).

20. Rotor Blade Control Movement

Main Rotor:

<table>
<thead>
<tr>
<th>Collective pitch</th>
<th>13.0° ±0.5° total travel</th>
</tr>
</thead>
<tbody>
<tr>
<td>forward</td>
<td>13.50° to 14.25°</td>
</tr>
<tr>
<td>aft</td>
<td>13.50° to 14.25°</td>
</tr>
<tr>
<td>left</td>
<td>7.5° to 8.5°</td>
</tr>
<tr>
<td>right</td>
<td>6.0° to 7.0°</td>
</tr>
</tbody>
</table>

Tail Rotor:

<table>
<thead>
<tr>
<th>Collective pitch</th>
<th>15.5° to 16.5°</th>
</tr>
</thead>
<tbody>
<tr>
<td>left pedal</td>
<td></td>
</tr>
<tr>
<td>right Pedal</td>
<td>18.5° to 19.0°</td>
</tr>
</tbody>
</table>

21. Auxiliary Power Unit (APU)

None

See R66 Pilot’s Operating Handbook and FAA Approved Rotorcraft Flight Manual (RTR 661) for expanded limits with external load.
22. Life-limited Parts
See Robinson Maintenance Manual and Instructions for Continued Airworthiness (RTR 660). Retirement times are listed in the EASA-approved "Airworthiness Limitations" section of Chapter 4, dated 25 October 2010, or later revisions.

IV. Operating and Service Instructions
1. Flight Manual


   none

   none

5. Illustrated Parts Catalogue
   R66 Illustrated Parts Catalog (RTR 660 Volume II)

6. Service Letters and Service Bulletins
   R66 Service Letters and Service Bulletins as published by Robinson Helicopter Company.

7. Required Equipment
   The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification, or as required by the Master Minimum Equipment List. In addition, the EASA-approved Rotorcraft Flight Manual is required (see Flight Manual).

V. Notes
1. Manufacturer's eligible serial numbers:
   s/n 0560 and subsequent, or s/n 0004 thru 0559 with R66 Service Letter SL-08 completed.

2. Instrument markings:
   Any cockpit instruments installed by a third party must be marked with limit markings and range markings in accordance with Robinson's marking scheme.

3. deleted

4. Noise configuration:
   The "Clean" and "Dirty" configurations for noise characteristics are defined in the EASA-approved Rotorcraft Flight Manual, Section 5.

5. Designation:
   R66 Turbine is used as marketing designation for the basic R66 helicopter. R66 Turbine Marine is used as a marketing designation for the R66 with optional pop-out floats.

6. R66 helicopters equipped with the G132 Cargo Hook installation may be operated at up to 1 315 kg gross mass when the portion above 1 225 kg is jettisonable load on the cargo hook and the helicopter is operating at or below 7 000 feet density altitude.
SECTION 2: OPERATIONAL SUITABILITY DATA (OSD)


I. OSD Certification Basis

I.1 Reference Date for determining the applicable OSD requirements
   12 August 2014

I.2 MMEL - Certification Basis
   Special Condition SC-CS-GEN-MMEL-H, Initial Issue

I.3 Flight Crew Data - Certification Basis
   CS-FCD, Initial Issue

II. OSD Elements

II.1 MMEL
   EASA MMEL for R22, R44, and R66, Appendix 1 to RTR 666, dated 17 November 2015, or subsequent approved revisions

II.2 Flight Crew Data
   RTR 665, EASA Operation Suitability Data, Flight Crew Data, Initial OSD Issue, or subsequent approved revisions
SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AFT</td>
<td>Aft</td>
</tr>
<tr>
<td>CG</td>
<td>Centre of Gravity</td>
</tr>
<tr>
<td>CRI</td>
<td>Certification Review Item</td>
</tr>
<tr>
<td>CS</td>
<td>Certification Specification</td>
</tr>
<tr>
<td>DA</td>
<td>Density Altitude</td>
</tr>
<tr>
<td>DP</td>
<td>Datum Point</td>
</tr>
<tr>
<td>EFIS</td>
<td>Electronic Flight Information System</td>
</tr>
<tr>
<td>FAA</td>
<td>Federal Aviation Administration</td>
</tr>
<tr>
<td>FCD</td>
<td>Flight Crew Data</td>
</tr>
<tr>
<td>FWD</td>
<td>Forward</td>
</tr>
<tr>
<td>ISA</td>
<td>International Standard Atmosphere</td>
</tr>
<tr>
<td>KIAS</td>
<td>Knots Indicated Air Speed</td>
</tr>
<tr>
<td>max</td>
<td>Maximum</td>
</tr>
<tr>
<td>MC</td>
<td>Maximum Continuous</td>
</tr>
<tr>
<td>MCP</td>
<td>Maximum Continuous Power</td>
</tr>
<tr>
<td>MGT</td>
<td>Measured Gas Temperature</td>
</tr>
<tr>
<td>MMEL</td>
<td>Master Minimum Equipment List</td>
</tr>
<tr>
<td>MRGB</td>
<td>Main Rotor Gearbox</td>
</tr>
<tr>
<td>MSL</td>
<td>Mean Sea Level</td>
</tr>
<tr>
<td>n/a</td>
<td>Not applicable</td>
</tr>
<tr>
<td>OSD</td>
<td>Operational Suitability Data</td>
</tr>
<tr>
<td>PA</td>
<td>Pressure Altitude</td>
</tr>
<tr>
<td>PWR</td>
<td>Power</td>
</tr>
<tr>
<td>RHC</td>
<td>Robinson Helicopter Company</td>
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<tr>
<td>RFM</td>
<td>Rotorcraft Flight Manual</td>
</tr>
<tr>
<td>RTR</td>
<td>Robinson Technical Report</td>
</tr>
<tr>
<td>s/n</td>
<td>Serial Number</td>
</tr>
<tr>
<td>SC</td>
<td>Special Condition</td>
</tr>
<tr>
<td>STA</td>
<td>Station</td>
</tr>
<tr>
<td>TOP</td>
<td>Take-Off Power</td>
</tr>
<tr>
<td>TRGB</td>
<td>Tail Rotor Gearbox</td>
</tr>
<tr>
<td>TQ</td>
<td>Torque</td>
</tr>
<tr>
<td>VFR</td>
<td>Visual Flight Rules</td>
</tr>
<tr>
<td>V\text{\textsubscript{NE}}</td>
<td>Never Exceed Speed</td>
</tr>
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II. Type Certificate Holder Record

<table>
<thead>
<tr>
<th>Type Certificate Holder</th>
<th>Period</th>
</tr>
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<tbody>
<tr>
<td>Robinson Helicopter Company</td>
<td>Since 25 October 2010</td>
</tr>
<tr>
<td>2901 Airport Drive</td>
<td></td>
</tr>
<tr>
<td>Torrance, California 90505, USA</td>
<td></td>
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III. Change Record

<table>
<thead>
<tr>
<th>Issue</th>
<th>Date</th>
<th>Changes</th>
<th>TC issue</th>
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<tbody>
<tr>
<td>Issue 1</td>
<td>30 Apr 2014</td>
<td>Initial issue of EASA TCDS</td>
<td>Initial Issue, 30 April 2014</td>
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<tr>
<td>Issue 2</td>
<td>11 Dec 2015</td>
<td>OSD section added</td>
<td>- - -</td>
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<tr>
<td>Issue 3</td>
<td>1 Jul 2021</td>
<td>II.3: Special Condition F-01 (HeliSAS AP) added</td>
<td>- - -</td>
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<tr>
<td></td>
<td></td>
<td>II.8: ESF reference amended</td>
<td>- - -</td>
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<tr>
<td></td>
<td></td>
<td>III.1: R66 Master Drawing List (MDL) 0066 corrected to RHC drawing F001</td>
<td>- - -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>III.8: Reference to Flight Manual added</td>
<td>- - -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>III.12: Maximum masses amended</td>
<td>- - -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>III.13: ‘Weight’ corrected to ‘Mass’, aft CG lateral limits amended, and note regarding external load operations added</td>
<td>- - -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>III.16: Minimum flight crew amended</td>
<td>- - -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>III.19: Baggage compartment limits for specific configurations added</td>
<td>- - -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>V.6: Note concerning cargo hook conditions and Flight Manual added</td>
<td>- - -</td>
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</tbody>
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