TYPE CERTIFICATE
DATA SHEET

No. EASA.R.143

For
NH-300C

Type Certificate Holder
Mecaer Aviation Group S.p.A.

Via per Arona 46
28021 Borgomanero (NO)
Italy

For Model: NH-300C
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SECTION 1: NH-300C

I. General

1. Type/ Model/ Variant
   1.1 Type
   NH-300C
   1.2 Model
   NH-300C
   1.3 Variant
   - - -

2. Airworthiness Category
   Small Rotorcraft

3. Manufacturer
   Mecaer Aviation Group S.p.A.
   Via per Arona 46
   28021 Borgomanero (NO), Italy
   Vertex Aero S.r.l.,
   Via dell’Artigianato 1, V Traversa, 1
   63076 Monteprandone (AP), Italy

4. Type Certification Application Date to ENAC
   18 June 1975

5. State of Design Authority
   EASA
   (pre EASA: Ente Nazionale per l’Aviazione Civile (ENAC), Italy)

6. Type Certificate Date by ENAC
   31 March 1978

7. Type Certificate n° by ENAC
   A 176

8. Type Certificate Data Sheet n° by ENAC
   SO/A 176

9. EASA Type Certification Date
   28 September 2003,
   in accordance with CR (EU) 1702/2003, Article 2, 3., (a),
   (i), 2nd bullet, 1st indented bullet.

II. Certification Basis

1. Reference Date for determining the applicable requirements
   18 June 1975

2. Airworthiness Requirements
   for s/n BH01 to BH04:
   CAR Part 6, dated 15 January 1951, including Amdts. 6-1 through 6-8, except CAR 6.604(c).
   In addition, compliance with CAR 6.401 (b) effective
   17 May 1958, CAR 6.637 effective 1 April 1957 and FAR
   27.1323 (b) (Amtd. 27-2 effective 25 February 1968) in lieu of CAR 6.612(a).
   for s/n 001 and subsequent:
   CAR Part, 6 dated 15 January 1951 including Amdts. 6-1 through 6-8.
   In addition, compliance with CAR 6.637, effective
   1 April 1957.
   Compliance with FAR 27.1323(b) (Amdt. 27-2 effective
   Compliance with FAR 27.903 (b), 27.923, 27.993, 27.997,
   27.1183, 27.1305, 27.1322 (Amdt. 27-9 effective
   31 October 1974).
   Manufacturer has chosen to comply with FAR 27.607
   (Amdt. 27-9, effective 31 October 1974) according to
   report No. NH300-01-23 Rev. A.
   Note: (applicable to s/n BH01 to BH04, s/n 001 and up):
   Certification Basis as for FAA TC 4H12, dated
   15 May 1970 for Hughes Helicopter Model 269C.

3. Special Conditions
   none
4. Exemptions
   none
5. Deviations
   none
6. Equivalent Safety Findings
   none
7. Requirements elected to comply
   none
8. Environmental Protection Requirements
   8.1 Noise Requirements
      See TCDSN EASA.R.143
   8.2 Emission Requirements
      n/a
9. Operational Suitability Data (OSD)
   Not required for rotorcraft that are no longer in production.
   CR (EU) 748/2012, as amended by CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III. Technical Characteristics and Operational Limitations
1. Type Design Definition
   Document n° 269A0050-1003 / -3003.
2. Description
   Light helicopter with seating provisions for one (1) pilot and one (1) passenger, or one (1) pilot and two (2) passengers (refer to approved PFM).
   Main rotor: three-bladed, articulated type
   Tail rotor: twin bladed, teetering type
   Fuselage: all-metal
   Landing gear: skid type
   Powerplant: single reciprocating engine
3. Equipment
   Basic equipment required by the airworthiness rules (see II. Certification Basis) shall be installed on the helicopter for the Airworthiness Certificate release.
   Refer also to the Equipment List in PFM, Section VI.
4. Dimensions
   4.1 Fuselage
      Length: 6.77 m
      Width: 1.99 m (gear compressed)
      Height (fin): 2.66 m (gear compressed)
   4.2 Main Rotor
      Diameter: 8.18 m
   4.3 Tail Rotor
      Diameter: 1.30 m
5. Engine
   5.1 Model
      Lycoming Engines
      1 x Model HIO-360-D1A
   5.2 Type Certificate
      FAA TC/TCDs n°: 1E10
      EASA TC/TCDs n°: EASA.IM.E.032
   5.3 Limitations
      5.3.1 Installed Engine Limitations and Transmission Torque Limits

<table>
<thead>
<tr>
<th>PWR (kW (hp))</th>
<th>RPM [min⁻¹]</th>
<th>MP [in Hg]</th>
<th>Altitude [ft (m)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>141.7 (190)</td>
<td>3 200</td>
<td>26.0</td>
<td>MSL</td>
</tr>
<tr>
<td>141.7 (190)</td>
<td>3 200</td>
<td>24.7</td>
<td>4 200 (1 280)</td>
</tr>
</tbody>
</table>

5.3.2 Other Engine and Transmission Torque Limits
   Refer to approved PFM
6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel

ASTM D910A, Grade 100/130 (green)

6.2 Oil

Engine:

MIL-L-22851 or SAE J1899 (ashless dispersant type)*

MIL-L-6082, or SAE J1966 (straight mineral type)*

MR and TR transmission:

MIL-L-2105E or SAE J2360**

* For detailed information see Lycoming Service Instruction No. 1014.

** For detailed information see NH-300C Basic HMI.

6.3 Additives

n/a

7. Fluid capacities

7.1 Fuel

113.6 litres (30 US gal) at STA 107 (2 718 mm)

185.5 litres (49 US gal) with optional tank at STA 107

Unusable fuel: 0.5 kg (1.2 lb) at STA 107

7.2 Oil

Engine: 7.6 litres (2 US gal)

MR transmission: 2.84 litres (0.75 US gal)

TR transmission: 0.24 litre (0.5 pint (US liquid))

7.3 Coolant System Capacity

n/a

8. Air Speed Limitations

V_{NE} 95 KIAS (109 mph IAS) at MSL

V_{DOORS OFF} 89 KIAS (102 mph IAS) at MSL

For reduction on V_{NE} with altitude see approved Pilot’s Flight Manual and related Supplements.

9. Rotor Speed Limitations

Power on (engine tach):

Maximum 3 200 rpm

Minimum 3 000 rpm

Power off (rotor tach):

Maximum 504 rpm

Minimum 390 rpm

10. Maximum Operating Altitude and Temperature

10.1 Altitude

- 14 600 ft (4 450 m) DA
  for gross mass ≤ 771 kg (1 700 lb)

- 12 000 ft (3 657 m) DA
  for gross mass > 771 kg (1 700 lb)

10.2 Temperature

Refer to approved PFM

11. Operating Limitations

VFR day and night*

* With appropriate instruments and equipment, required by the airworthiness and/or operating rules, are approved, installed and are in operable condition.

For further limitations refer to approved PFM.

12. Maximum Mass

930 kg (2 050 lb), see Note 2

975 kg (2 150 lb) for take-off, with agricultural kit (P/N 269A4153-1001) installed, in accordance with specific limitations as per Supplement G of the approved PFM

975 kg (2 150 lb) with Cargo Hook kit (P/N 269A4971-3) installed, in accordance with specific limitations as per Supplement J of the approved PFM
13. Centre of Gravity Range

<table>
<thead>
<tr>
<th></th>
<th>Forward, at STA [mm (in)]</th>
<th>Aft, at STA [mm (in)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longitudinal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>at STA [mm (in)]</td>
<td>Left [mm (in)]</td>
<td>Right [mm (in)]</td>
</tr>
<tr>
<td>2 413 (95)</td>
<td>-25 (-1.0)</td>
<td>+76 (+3.0)</td>
</tr>
<tr>
<td>2 527 (99.5)</td>
<td>-54 (-2.12)</td>
<td>+102 (+4.0)</td>
</tr>
<tr>
<td>2 565 (101)</td>
<td>-63 (-2.5)</td>
<td>+51 (+2.0)</td>
</tr>
</tbody>
</table>

Note: Looking forward ‘+’ indicates right of helicopter centre line, and ‘−’ left of helicopter centre line. For limits with accessories installed see approved PFM and related Supplements.

14. Datum

Longitudinal:
The datum line (STA 0) is located at 2 540 mm (100 in) forward of the main rotor hub centre line.

Lateral:
The datum line (BL 0) is at helicopter centre line.

15. Levelling Means

Top of main rotor hub

16. Minimum Flight Crew

One (1) pilot, operating the helicopter from the left seat at STA 83.2 in (2 113 mm), BL -13.8 in (-351 mm)

17. Maximum Passenger Seating Capacity

- Two (2), for helicopter configuration
  P/N 269A0050-1003 (one at STA 80 (2 032 mm), BL 0.75 (19 mm); one at STA 83.2 (2 113 mm), BL 13.8 (351 mm);
- One (1), for helicopter configuration
  P/N 269A0050-3003 (at STA 83.2 (2 032 mm), BL 13.8 (351 mm).

18. Passenger Emergency Exit

Two (2), one on each side of the cockpit

19. Maximum Baggage/ Cargo Loads

n/a

20. Rotor Blade Control Movement

Main rotor (relative to rigging position):
- Collective pitch (up, down): 12° ±1°
- Cyclic pitch (longitudinal): Forward 8.5° to 9.75°
  Aft 6.5° to 7.5°
- Cyclic pitch (lateral): Left 6.5° to 7.5°
  Right 4.5° to 6.5°

Tail rotor (relative to rigging position):
  Full-left pedal (thrust to right) +25.0° to +27.0°
  Full-right pedal (thrust to left) -11.0° to -13.0°

For rigging information of main rotor and tail rotor refer to NH-300C Basic HMI.

21. Auxiliary Power Unit (APU)

none

22. Life-limited Parts

Refer to latest issue of NH-300C Basic HMI Appendix B - “Periodic Inspection, Overhaul and Retirement Schedule, and Weight and Balance Procedures”.
IV. Operating and Service Instructions

1. Flight Manual
   NH-300C "Pilot's Flight Manual" applicable to:
   - s/n BH-01 to BH-04: Issue 1, dated 29 March 1978;
   - s/n 001 and up: Issue 1, dated 22 May 1979;
   - All s/n: PFM re-issue, dated 18 September 1995;
   and subsequent approved revisions.

   - NH-300C - Basic Handbook Maintenance Instructions, (Basic HMI);
   - NH-300C - Optional Equipment and Trainer Configuration of NH-300C Basic HMI Appendix 'A';
   - NH-300C Basic HMI Appendix B - “Periodic Inspection, Overhaul and Retirement Schedule, and Weight and Balance Procedures”, applicable to:
     - s/n BH-01 to BH-04: Issue 1, dated 4 April 1978;
     - s/n 001, and up: Issue 1, dated 22 February 1979;
     - All s/n: Issue 3, dated 12 September 1995; Rev. 2, dated 15 March 2001;
     and subsequent accepted revisions.

   see IV.2. (Basic HMI)

   see IV.2.

5. Illustrated Parts Catalogue
   NH-300C Illustrated Parts Catalog (IPC), re-issue dated 1 September 1986, or later published revisions.

6. Service Letters and Service Bulletins
   As published by Mecaer Aviation Group S.p.A., or Vertex Aero S.r.l.

7. Required Equipment
   Refer to latest issue of “Equipment List for NH-300C Helicopter” (Section VI of approved PFM).

V. Notes

1. Manufacturer’s eligible serial numbers:
   Assembly drawing 269A0050-1003:
   from s/n BH01 to BH04, from s/n 001 to 009, from s/n 012 to 014, from s/n 016 to 017, and from s/n 019 to 022.
   Assembly drawing 269A0050-3003:
   s/n 010, 011, 015, 018, 023, 024 and 025.

2. Each aircraft must be provided with a current "Weighing and Balance Report", containing the list of equipment that must be included in the certification empty weight calculation and, where necessary, the loading instruction. The empty mass and related CG position calculation must include the unusable fuel of 0.5 kg (1.2 lb) at STA 107 (2 718 mm).

3. The following placard must be installed in clear view of the pilot:
   “This helicopter must be operated in compliance with the operating limitations specified in the approved "Pilot’s Flight Manual".
   For additional placards, see approved PFM.

   * * *
SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Amdt.</th>
<th>Amendment</th>
<th>HMI</th>
<th>Handbook of Maintenance Instructions</th>
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<tbody>
<tr>
<td>BL</td>
<td>Butt line</td>
<td>OSD</td>
<td>Operational Suitability Data</td>
</tr>
<tr>
<td>CAR</td>
<td>Civil Aviation Regulation</td>
<td>P/N</td>
<td>Part number</td>
</tr>
<tr>
<td>C.G.</td>
<td>Centre of Gravity</td>
<td>PFM</td>
<td>Pilot's Flight Manual</td>
</tr>
<tr>
<td>DA</td>
<td>Density altitude</td>
<td>PWR</td>
<td>Power</td>
</tr>
<tr>
<td>ENAC</td>
<td>Ente Nazionale per l'Aviazione Civile</td>
<td>s/n</td>
<td>Serial number</td>
</tr>
<tr>
<td>fwd</td>
<td>forward (vis-à-vis aft)</td>
<td>STA</td>
<td>Station</td>
</tr>
<tr>
<td>Hg</td>
<td>Mercury (hydrargyrum)</td>
<td>TCDSN</td>
<td>Type Certificate Data Sheet Noise</td>
</tr>
<tr>
<td>max.</td>
<td>maximum</td>
<td>VFR</td>
<td>Visual Flight Rules</td>
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<tr>
<td>MP</td>
<td>Manifold pressure</td>
<td>VNE</td>
<td>Velocity Never Exceed</td>
</tr>
<tr>
<td>MSL</td>
<td>Mean Sea Level</td>
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II. Type Certificate Holder Record.

<table>
<thead>
<tr>
<th>Type Certificate Holder</th>
<th>Period</th>
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<tr>
<td>Mecaer Aviation Group S.p.A.</td>
<td>Since 31 March 1978</td>
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<tr>
<td>Via dell’Artigianato, V Traversa, 1</td>
<td></td>
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<tr>
<td>63033 Centobuchi di Monteprandone (AP) - Italy</td>
<td></td>
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<tr>
<td>Vertex Aero S.r.l.</td>
<td>Since 5 December 2019</td>
</tr>
<tr>
<td>Via dell’Artigianato 1</td>
<td></td>
</tr>
<tr>
<td>63076 Monteprandone (AP) - Italy</td>
<td></td>
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<tr>
<td>Mecaer Aviation Group S.p.A.</td>
<td>Since 27 February 2020</td>
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<tr>
<td>Via per Arona 46</td>
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<tr>
<td>280021 Borgomanero (NO) - Italy</td>
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III. Change Record

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<th>Issue</th>
<th>Date</th>
<th>Changes</th>
<th>TC issue</th>
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<tr>
<td>Issue 1</td>
<td>18 Oct 2012</td>
<td>Initial EASA Issue; transfer of RAI/ENAC TCDS SO/A 143 to EASA format</td>
<td>Initial EASA Issue 18 October 2012 (initial ENAC Issue 31 March 1978)</td>
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<tr>
<td>Issue 2</td>
<td>5 Dec 2019</td>
<td>Transfer of Type Certificate to Vertex Aero S.r.l.; III.5.2.: EASA engine TCDS reference added; IV.1., 2.: clarification of PFM and HMI applicability; V.1.: correction of s/n.</td>
<td>re-issued 5 December 2019</td>
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<td>Issue 3</td>
<td>27 Feb 2020</td>
<td>Re-transfer of Type Certificate to Mecaer Aviation Group S.p.A.</td>
<td>re-issued 27 February 2020</td>
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