State Aviation Administration of Ukraine

SAAU

TYPE CERTIFICATE DATA SHEET № TB 0021

Helicopter Enstrom 480

Model:
model 480
model 480B

Date of approval:
24 March 2011
24 March 2011

Issue 2, 24 July 2013

This Data Sheet which is integral part of Type Certificate № TB 0021 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.

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I. General:

1. **Airworthiness Category:** Small Rotorcraft, category B

2. **Type Certificate Holder:** Enstrom Helicopter Corporation, 2209 22nd Street, Menominee, Michigan 49858, USA

3. **Manufacturer:** Enstrom Helicopter Corporation, 2209 22nd Street, Menominee, Michigan 49858, USA

II. Model Enstrom 480

1. **General information:**

1.1. **Application Date for State Aviation Administration (SAAU) validation:** 26.05.2006

1.2. **SAAU Validation Date:** 24.03.2011

1.3. **Certification Basis:** See Section IV, paragraph 1.2.

2. **Type Design:**

2.a) **Base model 480**

2.1.a) **Date of FAA approval:** 10.11.1993

2.2.a) **Type Design Definition:**

- by the List of Drawings (Report 28-DO-336), revision A or later approved revisions; and
- by the List of the certified options of helicopter, that contained in Appendix to Certification Review Item (CRI) G-2.

2.3.a) **Equipment:**

The basic equipment required by the applicable airworthiness requirements (see Certification basis, Section IV of this Data Sheet) and the additional equipment specified in the RFM Supplement for Ukraine Registered Helicopters, Report No.28-AC-041 (see Section II, paragraph 4, of this Data Sheet), must be installed in the helicopter.

3.a) **Technical Characteristics and Operational Limitations:**

3.1.a) **Engine:** One Rolls-Royce 250- C20W (Allison 250- C20W) turbo shaft engine

3.1.1.a) **Type Design Approval by SAAU:** See Type Certificate No.TD0034 issue 3
3.1.2.a) Engine limits

<table>
<thead>
<tr>
<th></th>
<th>Torque Pressure psi (HP)</th>
<th>Output Shaft Speed % (RPM)</th>
<th>Turbine Outlet Temperature °C</th>
<th>Gas Gen Speed % (RPM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Takeoff (5 min.):</td>
<td>67 (285)</td>
<td>103 (6196)</td>
<td>810</td>
<td>105 (53519)</td>
</tr>
<tr>
<td>Max. Continuous:</td>
<td>60 (256)</td>
<td>103 (6196)</td>
<td>737</td>
<td>105 (53519)</td>
</tr>
</tbody>
</table>

3.2.a) Main Rotor Speed Limitation:

(a) Power Off:
- maximum: 385 RPM
- minimum: 334 RPM

(b) Power On:
- maximum: 365 RPM
- minimum: 357 RPM

3.3.a) Fuels:

(a) Fuel grades:
- Foreign: Mil-DTL-5624, Grade JP-4 or JP-5;
- Aviation Turbine Fuels ASTM D1655 Jet A or A-1 (or Allison Spec. EMS-64) or ASTM D6615 Jet B;
- Mil-DTL-83133, Grade JP8
- CIS: RT and TS-1 (GOST 10227-86)
- Ukrainian: RT (GSTU 320.00149943.007-97) and TS-1 (GSTU 320.00149943.011-99)

3.3.2.a) Fuel capacity:
90.0 gal (340 l), respectively 607 lbs (275 kg)

3.4.a) Oil capacity:
12 pints (5.6 l) respectively 12.6 lbs (5.7 kg)

For detailed information refer to RFM.

3.5.a) Never exceed Airspeed Limits at sea level, indicated ($V_{NE}$):

122 knots (225 km/h)

Note: Decrease $V_{NE}$ for different ambient conditions and limitation in accordance with the RFM Section IV, Chapter 1 (see Section II, paragraph 4, of this Data Sheet).
3.6.a) Maximum Weight: 1292.7 kg (2850 lbs.)

3.7.a) Maximum baggage weight: 68 kg (150 lbs.) in baggage compartment

3.8.a) Center of Gravity: For the detailed information refer to RFM Chapter 1, Section IV.

3.9.a) Operating pressure altitude:

3.9.1.a) Maximum: 3962 m (13000 ft.).
For reduction in take-off and landing altitude with gross weight refer to RFM (see Section II, paragraph 4, of this Data Sheet).

3.9.2.a) Maximum without oxygen equipment:
- without passengers: 3000 m (9850 ft)
- with passengers: 2400 m (7900 ft)

Note: If oxygen equipment is used, its installation on the helicopter must be approved by SAAU.

3.10.a) Ambient air temperature: from +45.5°C to -32°C.

3.11.a) Minimum Flight Crew: 1 pilot (left seat).

3.12.a) Maximum Occupants: 5 (including crew, refer to RFM).

3.13.a) Eligible serial numbers: 5002 to 5016 except 5005 (see Notes of FAA Type Certificate Data Sheet No. H1CE).
2.b) Model 480 operation with increased main rotor rpm and torque limits (drawing 4230002)

2.1.b) Date of FAA approval: 12.08.1996

2.2.b) Type Design Definition: - by the List of Drawings (Report 28-DO-336), revision A or later approved revisions and
- by the List of the certificated options of helicopter, that contained in Appendix to Certification Review Item (CRI) G-2.

2.3.b) Equipment: The basic equipment required by the applicable airworthiness requirements (see Certification basis, Section IV of this Data Sheet), items listed in the Drawing 4230002, and the additional equipment specified in the RFM Supplement for Ukraine Registered Helicopters, Report No.28-AC-041 (see Section II, paragraph 4, of this Data Sheet), must be installed in the helicopter.

3.b) Technical Characteristics and Operational Limitations:

3.1.b) Engine: One Rolls-Royce 250- C20W (Allison 250- C20W) turbo shaft engine

3.1.1.b) Type Design Approval by SAAU: See Type Certificate No.TD0034 issue 3

3.1.2.b) Engine limits

<table>
<thead>
<tr>
<th>Torque Pressure Speed</th>
<th>Output Shaft Speed</th>
<th>Turbine Outlet Temperature</th>
<th>Gas Gen Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>psi (HP)</td>
<td>% (RPM)</td>
<td>°C</td>
<td>% (RPM)</td>
</tr>
<tr>
<td>Takeoff (5 min.):</td>
<td>68 (289)</td>
<td>103 (6196)</td>
<td>810</td>
</tr>
<tr>
<td>Max. Continuous:</td>
<td>63 (268)</td>
<td>103 (6196)</td>
<td>737</td>
</tr>
</tbody>
</table>

3.2.b) Main Rotor Speed Limitation:

(a) Power Off:
- maximum: 385 RPM
- minimum: 334 RPM

(b) Power On:
- maximum: 372 RPM
- minimum: 365 RPM
3.3.b) Fuels:

3.3.1.b) Fuel grades:
Foreign:
- Mil-DTL-5624, Grade JP-4 or JP-5;
- Aviation Turbine Fuels ASTM D1655 Jet A or A-1 (or Allison Spec. EMS-64) or ASTM D6615 Jet B;
- Mil-DTL-83133, Grade JP8
CIS:
- RT and TS-1 (GOST 10227-86);
Ukrainian:
- RT (GSTU 320.00149943.007-97) and

3.3.2.b) Fuel capacity:
90.0 gal (340 l) respectively 607 lbs (275kg)

3.4.b) Oil capacity:
12 pints (5.6 l) respectively 12.6 lbs (5.7kg)

3.5.b) Never exceed Airspeed Limits at sea level, indicated ($V_{NE}$):
125 knots (231 km/h)

Note: Decrease $V_{NE}$ for different ambient conditions and limitation in accordance with the RFM Section IV, Chapter 1 (see Section II, paragraph 4, of this Data Sheet).

3.6.b) Maximum Weight:
1292.7 kg (2850 lbs.)

3.7.b) Maximum baggage weight:
68 kg (150 lbs.) in baggage compartment

3.8.b) Center of Gravity:
For the detailed information refer to RFM Chapter 1, Section IV.

3.9.b) Operating pressure altitude:

3.9.1.b) Maximum:
3962 m (13000 ft.).
For reduction in take-off and landing altitude with gross weight refer to RFM.

3.9.2.b) Maximum without oxygen equipment:
- without passengers: 3000 m (9850ft.)
- with passengers: 2400 m (7900 ft.)

Note: If oxygen equipment is used, its installation on the helicopter must be approved by SAAAU.
3.10.b) **Ambient air temperature:** from +45.5°C to -32°C.

3.11.b) **Minimum Flight Crew:** 1 pilot (left seat).

3.12.b) **Maximum Occupants:** 5 (including crew, refer to RFM).

3.13.b) **Eligible serial numbers:** 5002 to 5042 and 5044 except 5005; 5021; 5023; 5028; 5035 (see Notes of FAA Type Certificate Data Sheet No. H1CE).

4. **Operational documentation:**
   - FAA approved Rotorcraft Flight Manual dated June 7, 1993 or later approved revisions;
   - FAA approved Rotorcraft Flight Manual Supplement for Ukraine registered helicopters dated January 24, 2011 or later approved revisions (Report No.28-AC-041);

5. **Noise Level:** The noise level of the helicopter 82.4 dBA.

III. **Model Enstrom 480B**

1. **General information:**

1.1. **Application Date for State Aviation Administration (SAAU) validation:** 26.05.2006

1.2. **SAAU Validation Date:** 24.03.2011

1.3. **Certification Basis:** See Section IV, paragraph 1.2.

2. **Type Design:**

2.1. **Date of FAA approval:** 08.02.2001

2.2. **Type Design Definition:**
   - by the List of Drawings (Report 28-DO-336), revision A or later approved revisions; and
   -- by the List of the certified options of helicopter that contained in Appendix to Certification Review Item (CRI) G-2.
2.3. Equipment: The basic equipment required by the applicable airworthiness requirements (see Certification basis, Section IV of this Data Sheet) and the additional equipment specified in the RFM Supplement for Ukraine Registered Helicopters, Report No.28-AC-041 (see Section III, paragraph 4, of this Data Sheet), must be installed in the helicopter.

3. Technical Characteristics and Operational Limitations:

3.1. Engine: One Rolls-Royce 250- C20W (Allison 250- C20W) turbo shaft engine

3.1.1. Type Design Approval by SAAU: See Type Certificate No.TD0034 issue 3

3.1.2. Engine limits

<table>
<thead>
<tr>
<th></th>
<th>Torque Pressure</th>
<th>Output Shaft Speed</th>
<th>Turbine Outlet Temperature</th>
<th>Gas Gen Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>psi (HP)</td>
<td>% (RPM)</td>
<td>°C</td>
<td>% (RPM)</td>
</tr>
<tr>
<td>Takeoff (5 min.):</td>
<td>72(305)</td>
<td>103(6196)</td>
<td>810</td>
<td>105(53519)</td>
</tr>
<tr>
<td>Max. Continuous:</td>
<td>65(276)</td>
<td>103(6196)</td>
<td>737</td>
<td>105(53519)</td>
</tr>
</tbody>
</table>

3.2. Main Rotor Speed Limitation:

(a) Power Off:
- maximum: 385 RPM
- minimum: 334 RPM

(b) Power On:
- maximum: 372 RPM
- minimum: 365 RPM

3.3. Fuels:

3.3.1. Fuel grades:
Foreign:
Mil-DTL-5624, Grade JP-4 or JP-5;
Aviation Turbine Fuels ASTM D1655 Jet A or A-1 (or Allison Spec. EMS-64) or ASTM D6615 Jet B;
Mil-DTL-83133, Grade JP8
CIS:
RT and TS-1 (GOST 10227-86);
Ukrainian:
RT (GSTU 320.00149943.007-97) and
TS-1 (GSTU 320.00149943.011-99).
3.3.2. Fuel capacity: 90.0 gal (340 l), respectively 607 lbs (275kg)

3.4. Oil capacity: 12 pints (5.6 l), respectively 12.6 lbs (5.7kg)
For detailed information refer to RFM.

3.5. Never exceed Airspeed Limits at sea level, indicated($V_{NE}$): 124 knots (229 km/h)

Note: Decrease $V_{NE}$ for different ambient conditions and limitation in accordance with the RFM Section IV, Chapter 1 (see Section III, paragraph 4, of this Data Sheet).

3.6. Maximum Weight: 1360.8 kg (3000 lbs.)

3.7. Maximum baggage weight: 68 kg (150 lbs.) in baggage compartment

3.8. Center of Gravity: For the detailed information refer to Chapter 1, Section IV.

3.9. Operating pressure altitude:

3.9.1. Maximum: 3048 m (10000ft) with weight 1360.8 kg (3000 lbs.)
3962 m (13000 ft) with weight 1292.7 kg (2850 lbs.).
For reduction in take-off and landing altitude with gross weight refer to RFM.

3.9.2. Maximum without oxygen equipment:
   - without passengers: 3000 m (9850ft.)
   - with passengers: 2400 m (7900 ft.)

Note: If oxygen equipment is used, its installation on the helicopter must be approved by SAAU.

3.10. Ambient air temperature: from +41 C to -32 C.

3.12. Maximum Occupants: 5 (including crew, refer to RFM).

3.13. Eligible serial numbers:  5043, 5045 and subsequent except 5102; 5122 (See Note 4 of Section V).
Also see Notes of FAA Type Certificate Data Sheet No. H1CE.

4. Operational documentation:
   - FAA approved Rotorcraft Flight Manual dated February, 9 2001 or later approved revisions;
   - FAA approved Rotorcraft Flight Manual Supplement for Ukraine registered helicopters dated January 24, 2011 or later approved revisions (Report No.28-AC-041);

5. Noise Level: The noise level of the helicopter 84.3 dBA.

IV. General data for models 480 and 480B

1. Certification Basis:


1.2. SAAU Certification Basis: Additional Technical Conditions based on:
   - Airworthiness requirements: “Airworthiness requirements for normal category rotorcraft. Part 27.” (AR-27);

V. Notes

1. Rotorcraft Flight Manual (RFM) with appropriate FAA approved Supplements and Supplement for Ukraine registered helicopters, Report No.28-AC-041 must be on board of every helicopter.

2. Operation conditions:
   (a) Flights in forecasted or possible icing conditions is prohibited.
   (b) Enstrom 480 and 480B helicopters is not certified for ditching and is approved for land operation only. Emergency Flotation System kit 4220091 installation is the only aiding means to give reasonable chance for occupants to evacuate helicopter in a case of emergency landing on water deliberately executed with the intent of abandoning the rotorcraft as soon as practical.
3. Mandatory equipment:
The equipment listed in the RFM Supplement for Ukraine registered helicopters, Report No. 28-AC-041, Chapter 1, paragraph 1-7, must be installed in the helicopters intended to be entered in the State Civil Aircraft Register of Ukraine.

4. Enstrom Model 480 with serial numbers 5039 thru 5042 and 5044 are eligible for conversion to Model 480B when equipped in accordance with Enstrom 480B Conversion kit No. 4230026.

5. Additional Conditions.
All Airworthiness Directive issued by FAA before the date of the SAAU Type Certificate issue must be accomplished on each helicopter intended to be registered in State Civil Aircraft Register of Ukraine.

Head of Aeronautical Products
Type Certification Department

Sergii Gaidenko