# TYPE CERTIFICATE DATA SHEET

No. EASA.IM.R.122

**for**

Enstrom F-28 and Enstrom 480

**Type Certificate Holder**

Enstrom Helicopter Corporation

2209 22nd Street
Menominee, Michigan 49858
U.S.A.

For Models: F-28A, 280, F-28C, F-28C-2, 280C, F-28F, F-28F-R, 280F, 280FX
480, 480B

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**SECTION 1: F-28A**

I. General

| | | |
|---|---|---|
| 1. | Type/ Model/ Variant | |
| | 1.1 Type | Enstrom F-28 |
| | 1.2 Model | F-28A |
| | 1.3 Variant | --- |
| 2. | Airworthiness Category | Small Rotorcraft |
| 3. | Manufacturer | Enstrom Helicopter Corporation<br>2209 22nd Street<br>Menominee, MI 49858, USA |
| 4. | Type Certification Application Date to | FAA: 10 February 1967<br>LBA DE: 25 October 1971 |
| 5. | State of Design Authority | FAA |
| 6. | Type Certificate Date by | FAA: 28 May 1968<br>LBA DE: 18 January 1973 |
| 7. | Type Certificate n° by | FAA: H1CE<br>LBA DE: 3041 |
| 8. | Type Certificate Data Sheet n° by | FAA: H1CE<br>LBA DE: 3041 |
| 9. | EASA Type Certification Date | 28 September 2003,<br>in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 2nd indented bullet. |

II. Certification Basis

| | | |
|---|---|---|
| 1. | Reference Date for determining the applicable requirements | 26 July 1962 |
| 2. | Airworthiness Requirements | As per compliance with Part 6 of the Civil Air Regulation effective 20 December 1956, as amended by 6-1 through 6-5 and included in the original Type Design Standard |
| 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 | Complies with the provisions of Article 6.1 of Regulation 216/2008 without the need to comply with the Standards of ICAO Annex 16, Volume I, by virtue of the date of type certification. See TCDS EASA.IM.R.122 |
| 9. | Operational Suitability Data (OSD) | See SECTION 11 below. |

III. Technical Characteristics and Operational Limitations

| | | |
|---|---|---|
| 1. | Type Design Definition | Enstrom Helicopter Corporation Drawing 28-00004 |
| 2. | Description | Single, normally-aspirated piston engine powered, three-seat helicopter with three-bladed, fully articulated main rotor, two-blade tail rotor, skid landing gear |
| 3. | Equipment | The basic required equipment as prescribed in the applicable Airworthiness Regulations (see Certification |

Basis) must be installed in the helicopter for certification. In addition, the approved RFM is required.

4. Dimensions

4.1 Fuselage
Length: 8.92 m (29 ft) (blade over tail)
Overall width: 1.80 m (7 ft 4 in)
Height: 2.74 m (9 ft)

4.2 Main Rotor
Diameter: 9.75 m (32 ft), three blades

4.3 Tail Rotor
Diameter: 1.42 m (4 ft 8 in), 2 blades

5. Engine

5.1 Model
Lycoming Engines
1 x Model HIO-360-C1A, or,
1 x Model HIO-360-C1B

5.2 Type Certificate
FAA TC/TCDS n°: 1E10
EASA TC/TCDS n°: EASA.IM.E.032

5.3 Limitations
For all operations:
Maximum: 2 900 rpm (205 hp)
Minimum: 2 750 rpm

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel
Minimum 100/130 or 100LL grade aviation gasoline

6.2 Oil
Refer to approved RFM

6.3 Additives
Refer to approved RFM

7. Fluid capacities

7.1 Fuel
Standard:
Fuel tank capacity: 113.6 litres (30 US gal)
at +2.49 m (+98.0 in)
Unusable fuel: 0.91 kg (2.0 lb)
at +2.49 m (+98.0 in)
Optional:
Fuel tank capacity: 159.0 litres (42 US gal)
at +2.46 m (+96.7 in)
Unusable fuel: 5.44 kg (12.0 lb)
at +2.39 m (+94.0 in)

7.2 Oil
Engine: 7.6 litres (2 US gal)
Undrainable oil: 1.81 kg (4 lb)
at +2.44 m (+96.0 in)

7.3 Coolant System Capacity
n/a

8. Air Speed Limitations

$V_{NE}$ [mph IAS]

| PA [ft] | OAT [°F] | | | | | | |
|---|---|---|---|---|---|---|---|
| | -20 | 0 | 20 | 40 | 60 | 80 | 100 |
| MSL | 112 | 112 | 112 | 112 | 112 | 104 | 98 |
| 2 000 | 112 | 112 | 112 | 105 | 98 | 92 | 87 |
| 4 000 | 112 | 106 | 99 | 92 | 87 | 83 | 80 |
| 6 000 | 100 | 93 | 88 | 83 | 79 | 75 | 72 |
| 8 000 | 89 | 84 | 79 | 75 | 71 | 68 | --- |
| 10 000 | 80 | 75 | 71 | 68 | 65 | --- | --- |
| 12 000 | 72 | 68 | 65 | 62 | --- | --- | --- |
| Note: Conversion rules: mph x 1.609 = km/h; 1 ft = 0.3048 m; °F +40 x 5/9 = °C | | | | | | | |

9. Rotor Speed Limitations
Power off: Maximum 385 rpm
Minimum 313 rpm

| | | |
|---|---|---|
| 10. | Maximum Operating Altitude and Temperature | |
| | 10.1 Altitude | Maximum: 10 000 ft DA (3 000 m)<br>TKOF/LDG: 7 000 ft DA (2 100 m)<br>Refer to approved RFM for H-V diagram |
| | 10.2 Temperature | Not specified |
| 11. | Operating Limitations | VFR day/night<br>Non-icing conditions<br>No aerobatics<br>No IFR<br>Crosswind and downwind: when hovering or landing, adequate flight control can be maintained in winds up to 20 mph (17 kt, 32 km/h) |
| 12. | Maximum Mass | 975 kg (2 150 lb) |
| 13. | Centre of Gravity Range | Longitudinal:<br>+2.34 m (+92.0 in) to +2.49 m (+98.0 in) |
| 14. | Datum | Longitudinal:<br>2.54 m (100.0 in) forward of the centre of main rotor hub<br>Lateral:<br>Rotorcraft centreline |
| 15. | Levelling Means | Lower longeron of pylon section |
| 16. | Stabiliser Setting | Fixed, 4° TE up relative to WL |
| 17. | Minimum Flight Crew | 1 pilot, at +1.57 m (+62.0 in) |
| 18. | Maximum Passenger Seating Capacity | 2, at +1.57 m (+62.0 in) |
| 19. | Passenger Emergency Exit | 2, one on each side of the fuselage |
| 20. | Maximum Baggage / Cargo Loads | Baggage box: 27.2 kg (60 lb) at +3.43 m (+135.0 in) |
| 21. | Rotor Blade Control Movement | For rigging information, refer to Maintenance Manual |
| 22. | Auxiliary Power Unit (APU) | n/a |
| 23. | Life-limited Parts | Applicable life limits are published in EASA AD N°. 2015-0235 (or later revision).<br>See EASA AD publication tool for the current life limits for this model. |

IV. Operating and Service Instructions

| | | |
|---|---|---|
| 1. | Flight Manual | (See also Section 10, General Note 1.) |

- FAA approved RFM, dated 21 May 1968; reprinted 1 June 1972, or later approved revision is required.
- RFM Supplements:
  FAA approved RFM Supplement n° 1, dated 6 June 1969, or later approved revision is required; (for External Loads) see Note 6.
  FAA approved RFM Supplement n° 2, dated 6 June 1969, or later approved revision is required; (for Float Landing Gear) see Note 5.
  FAA approved RFM Supplement n° 3, dated 27 February 1970, or later approved revision is required; (for External Litter) see Note 8.
  FAA approved RFM Supplement n° 4, dated 3 April 1974, or later approved revision is required; (for External Auxiliary Fuel Tank) see Note 9.

| | | |
|---|---|---|
| 2. | Maintenance Manual | (See also Section 10, General Note 1.)<br>F-28A/F-28C Maintenance Manual, dated 18 August 1972 (or later revision) |
| 3. | Structural Repair Manual | n/a |

4. Weight and Balance Manual

   Refer to Section 7 of the approved RFM (see Chapter IV.1.) and take into account all weight and balance data. Current weight and balance report including list of equipment included in certificated empty weight and loading instructions when necessary must be provided for each helicopter at the time of original certification. For piston-engine powered models, the certificated empty weight and corresponding centre of gravity locations must include unusable fuel and undrainable oil (see Chapter III.7).

| | | |
|---|---|---|
| 5. | Illustrated Parts Catalogue | Enstrom Illustrated Parts Catalogue for Helicopter Models: F-28A, 280, F-28C, 280C, F-28F, 280F, 280FX |
| 6. | Service Letters and Service Bulletins | As published by Enstrom Helicopter |

V. Notes

1. Manufacturer's eligible serial numbers for model F-28A:
   s/n 15 and subsequent.

   Except: s/n 016, 018, 038, 070, 098, 104, 124, 140, 145, 211, 219, 226, 232, 246, 251, 265, 284, 298, 303, 312, and 330, which are ineligible.

2. All placards required by either the approved RFM, the applicable operating rules, or the Certification Basis must be installed in the helicopter. This is in accordance with 14 CFR 27.1541 through 27.1565. The following placard must be displayed in front of and in clear view of the pilot:
   "This helicopter must be operated in compliance with operating limitations specified in the approved Rotorcraft Flight Manual."

3. Retirement items and mandatory inspection items are contained in the pertinent model Maintenance Manual. The retirement times of critical parts are listed in Section III.23 (Life-limited parts). These values of retirement times of service life cannot be increased without FAA/EASA approval.

4. The "C" Model Turbocharger conversions must be accomplished by the Enstrom Helicopter Corporation in accordance with Enstrom Service Information Letter 0049, and are eligible for F-28A Models, s/n 003 through 303 and s/n 305 through 330.

5. Model F-28A helicopters are eligible for the installation of inflatable floats, P/N 23D24409, in accordance with Enstrom drawing 28-17301, and may be operated up to 975 kg (2 150 lb) gross mass. Each helicopter so equipped is approved for amphibious operations within the limitations prescribed by approved RFM Supplement n° 2.

6. Model F-28A helicopters are eligible for installation of a cargo hook in accordance with Enstrom drawing 28-22000 for transportation of external cargo. Each helicopter so equipped must be operated within the limitations prescribed in the appropriate approved RFM Supplement. The maximum external load permitted on the cargo hook is 454 kg (1 000 lb).

7. Model F-28A helicopters are eligible for the installation of Snowshoe Kit n° 28-22400 when operated within the prescribed limitations of the approved RFM.

8. Model F-28A helicopters are eligible for the installation of an external litter in accordance with Enstrom drawing 28-22115 when operated within the prescribed limitations of the approved RFM Supplement.

9. Model F-28A helicopters are eligible for the installation of an externally mounted auxiliary fuel tank in accordance with Enstrom drawing 28-22500 when operated within the prescribed limitations of the approved RFM Supplement.

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**SECTION 2: 280**

I. General

| | | |
|---|---|---|
| 1. | Type/ Model/ Variant | |
| | 1.1 Type | Enstrom F-28 |
| | 1.2 Model | 280 |
| | 1.3 Variant | --- |
| 2. | Airworthiness Category | Small Rotorcraft |
| 3. | Manufacturer | Enstrom Helicopter Corporation<br>2209 22nd Street<br>Menominee, MI 49858, USA |
| 4. | Type Certification Application Date to | FAA: 1 October 1973<br>LBA DE: 3 April 1975 |
| 5. | State of Design Authority | FAA |
| 6. | Type Certificate Date by | FAA: 13 September 1974<br>LBA DE: 3 February 1976 |
| 7. | Type Certificate n° by | FAA: H1CE<br>LBA DE: 3041 |
| 8. | Type Certificate Data Sheet n° by | FAA: H1CE<br>LBA DE: 3041 |
| 9. | EASA Type Certification Date | 28 September 2003,<br>in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 2nd indented bullet. |

II. Certification Basis

| | | |
|---|---|---|
| 1. | Reference Date for determining the applicable requirements | 26 July 1962 |
| 2. | Airworthiness Requirements | As per compliance with Part 6 of the Civil Air Regulation effective 20 December 1956, as amended by 6-1 through 6-5 and included in the original Type Design Standard |
| 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 | Complies with the provisions of Article 6.1 of Regulation 216/2008 without the need to comply with the Standards of ICAO Annex 16, Volume I, by virtue of the date of type certification. See TCDSN EASA.IM.R.122. |
| 9. | Operational Suitability Data (OSD) | See SECTION 11 below. |

III. Technical Characteristics and Operational Limitations

| | | |
|---|---|---|
| 1. | Type Design Definition | Enstrom Helicopter Corporation Drawing 28-000000 |
| 2. | Description | Single, normally-aspirated piston engine powered, three-seat helicopter with three-bladed, fully articulated main rotor, two-blade tail rotor, skid landing gear |
| 3. | Equipment | The basic required equipment as prescribed in the applicable Airworthiness Regulations (see Certification |

Basis) must be installed in the helicopter for certification. In addition, the approved RFM is required.

4. Dimensions

| | | |
|---|---|---|
| 4.1 Fuselage | Length: | 8.92 m (29 ft) (blade over tail) |
| | Overall width: | 1.80 m (7 ft 4 in) |
| | Height: | 2.74 m (9 ft) |
| 4.2 Main Rotor | Diameter: | 9.75 m (32 ft), 3 blades |
| 4.3 Tail Rotor | Diameter: | 1.42 m (4 ft 8 in), 2 blades |

5. Engine

| | | |
|---|---|---|
| 5.1 Model | Lycoming Engines<br>1 x Model HIO-360-C1A, or,<br>1 x Model HIO-360-C1B | |
| 5.2 Type Certificate | FAA TC/TCDS n°: | 1E10 |
| | EASA TC/TCDS n°: | EASA.IM.E.032 |
| 5.3 Limitations | For all operations: | |
| | Maximum: | 2 900 rpm (205 hp) |
| | Minimum: | 2 750 rpm |

6. Fluids (Fuel/ Oil/ Additives)

| | |
|---|---|
| 6.1 Fuel | Minimum 100/130 or 100LL grade aviation gasoline |
| 6.2 Oil | Refer to approved RFM |
| 6.3 Additives | Refer to approved RFM |

7. Fluid capacities

| | | |
|---|---|---|
| 7.1 Fuel | Fuel tank capacity: | 159.0 litres (42 US gal)<br>at +2.46 m (+96.7 in) |
| | Unusable fuel: | 5.44 kg (12.0 lb)<br>at +2.39 m (+94.0 in) |
| 7.2 Oil | Engine: | 7.6 litres (2 US gal) |
| | Undrainable oil: | 1.81 kg (4 lb)<br>at +2.44 m (+96.0 in) |
| 7.3 Coolant System Capacity | n/a | |

8. Air Speed Limitations

$V_{NE}$ [mph IAS]

| PA [ft] | OAT [°F] | | | | | | |
|---|---|---|---|---|---|---|---|
| | -20 | 0 | 20 | 40 | 60 | 80 | 100 |
| MSL | 112 | 112 | 112 | 112 | 112 | 104 | 98 |
| 2 000 | 112 | 112 | 112 | 105 | 98 | 92 | 87 |
| 4 000 | 112 | 106 | 99 | 92 | 87 | 83 | 80 |
| 6 000 | 100 | 93 | 88 | 83 | 79 | 75 | 72 |
| 8 000 | 89 | 84 | 79 | 75 | 71 | 68 | --- |
| 10 000 | 80 | 75 | 71 | 68 | 65 | --- | --- |
| 12 000 | 72 | 68 | 65 | 62 | --- | --- | --- |
| Note: Conversion rules: mph x 1.609 = km/h; 1 ft = 0.3048 m; °F +40 x 5/9 = °C | | | | | | | |

9. Rotor Speed Limitations

| | | |
|---|---|---|
| Power off: | Maximum | 385 rpm |
| | Minimum | 313 rpm |

10. Maximum Operating Altitude and Temperature

| | | |
|---|---|---|
| 10.1 Altitude | Maximum: | 10 000 ft DA (3 048 m) |
| | TKOF/LDG: | 7 000 ft DA (2 134 m) |
| | Refer to approved RFM for H-V diagram | |

| | | |
|---|---|---|
| | 10.2 Temperature | Not specified |
| 11. | Operating Limitations | VFR day/night<br>Non-icing conditions<br>No aerobatics<br>No IFR<br>Crosswind and downwind: when hovering or landing, adequate flight control can be maintained in winds up to 20 mph (17 kt, 32 km/h) |
| 12. | Maximum Mass | 975 kg (2 150 lb) |
| 13. | Centre of Gravity Range | Longitudinal:<br>+2.34 m (+92.0 in) to +2.49 m (+98.0 in)<br>Lateral:<br>14.4 kgm (1 250 lb·in) left or right |
| 14. | Datum | Longitudinal:<br>2.54 m (100.0 in) forward of the centre of the main rotor hub<br>Lateral:<br>Rotorcraft centreline |
| 15. | Levelling Means | Lower longeron of pylon section |
| 16. | Stabiliser setting | Fixed, 6° TE up relative to WL |
| 17. | Minimum Flight Crew | 1 pilot, at +1.57 m (+62.0 in) |
| 18. | Maximum Passenger Seating Capacity | 2, at +1.57 m (+62.0 in) |
| 19. | Passenger Emergency Exit | 2, one on each side of the fuselage |
| 20. | Maximum Baggage / Cargo Loads | Baggage Box:<br>27.2 kg (60 lb) at +3.43 m (+135.0 in) |
| 21. | Rotor Blade Control Movement | For rigging information, refer to Maintenance Manual. |
| 22. | Auxiliary Power Unit (APU) | n/a |
| 23. | Life-limited Parts | Applicable life limits are published in EASA AD N°. 2015-0235 (or later revision).<br>See EASA AD publication tool for the current life limits for this model. |

IV. Operating and Service Instructions

| | | |
|---|---|---|
| 1. | Flight Manual | (See also Section 10, General Note 1.)<br>FAA approved RFM, dated 13 September 1974; or later approved revision is required. |
| 2. | Maintenance Manual | (See also Section 10, General Note 1.)<br>280/280C Maintenance Manual, dated 19 September 1977 (or later revision). |
| 3. | Structural Repair Manual | n/a |
| 4. | Weight and Balance Manual | |

Refer to Section 8 of the approved RFM (see Chapter IV.1.) and take into account all weight and balance data. Current weight and balance report including list of equipment included in certificated empty weight and loading instructions when necessary must be provided for each helicopter at the time of original certification. For piston-engine powered models, the certificated empty weight and corresponding centre of gravity locations must include unusable fuel and undrainable oil (see Chapter III.7).

| | | |
|---|---|---|
| 5. | Illustrated Parts Catalogue | Enstrom Illustrated Parts Catalogue for Helicopter Models: F-28A, 280, F-28C, 280C, F-28F, 280F, 280FX |
| 6. | Service Letters and Service Bulletins | As published by Enstrom Helicopter |

 

V. Notes

1. Manufacturer's eligible serial numbers for model 280:
   s/n 1002 and subsequent.
   Except: s/n 1006 and 1008, which are ineligible.
2. All placards required by either the approved RFM, the applicable operating rules, or the Certification Basis must be installed in the helicopter. This is in accordance with 14 CFR 27.1541 through 27.1565. The following placard must be displayed in front of and in clear view of the pilot:
   "This helicopter must be operated in compliance with operating limitations specified in the Approved Rotorcraft Flight Manual."
3. Retirement items and mandatory inspection items are contained in the pertinent model Maintenance Manual. The retirement times of critical parts are listed in Section III.23 (Life-limited parts). These values of retirement times of service life cannot be increased without FAA/EASA approval.
4. The "C" Model Turbocharger conversions must be accomplished by the Enstrom Helicopter Corporation in accordance with Enstrom Service Information Letter 0049, and are eligible for 280 Models, s/n 1002 through 1019 including s/n 1021 and 1022.
5. Model 280 helicopters are eligible for the installation of Snowshoe Kit n° 28-22400 when operated within the prescribed limitations of the approved RFM.

* * *

**SECTION 3: F-28C** (incl. F-28C-2, see Note 11)

I. General

| | | |
|---|---|---|
| 1. | Type/ Model/ Variant | |
| | 1.1 Type | Enstrom F-28 |
| | 1.2 Models | F-28C<br>F-28C-2, see Note 11 |
| | 1.3 Variants | Variant 1: MTOM 998 kg (2 200 lb);<br>Original Configuration<br>Variant 2: MTOM 1 066 kg (2 350 lb);<br>GM Increase (see Note 6)<br>Variant 3: MTOM 1 179 kg (2 600 lb);<br>AgriKit and External Loads (see Notes 7, 9)<br>Variant 4: MTOM 1 066 kg (2 350 lb);<br>Inflatable Floats (see Note 8) |
| 2. | Airworthiness Category | Small Rotorcraft |
| 3. | Manufacturer | Enstrom Helicopter Corporation<br>2209 22nd Street<br>Menominee, MI 49858, USA |
| 4. | Type Certification Application Date to | FAA: 20 March 1975<br>LBA DE: 26 March 1976 |
| 5. | State of Design Authority | FAA |
| 6. | Type Certificate Date by | FAA: 8 December 1975<br>LBA DE: 23 June 1977 |
| 7. | Type Certificate n° by | FAA: H1CE<br>LBA DE: 3041 |
| 8. | Type Certificate Data Sheet n° by | FAA: H1CE<br>LBA DE: 3041 |
| 9. | EASA Type Certification Date | 28 September 2003,<br>in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 2nd indented bullet. |

II. Certification Basis

| | | |
|---|---|---|
| 1. | Reference Date for determining the applicable requirements | 26 July 1962 |
| 2. | Airworthiness Requirements | As per compliance with Part 6 of the Civil Air Regulation effective 20 December 1956, as amended by 6-1 through 6-5 and included in the original Type Design Standard |
| 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 | Complies with the provisions of Article 6.1 of Regulation 216/2008 without the need to comply with the Standards of ICAO Annex 16, Volume I, by virtue of the date of type certification. See TCDSN EASA.IM.R.122. |
| 9. | Operational Suitability Data (OSD) | See SECTION 11 below. |

III. Technical Characteristics and Operational Limitations

| | | |
|---|---|---|
| 1. | Type Design Definition | Enstrom Helicopter Corporation Drawing 28-000001 |
| 2. | Description | Single, turbo-charged piston engine powered, three-seat helicopter with three-bladed, fully articulated main rotor, two-blade tail rotor, skid landing gear |
| | 2.1 Additional Description for Variant 2 | This variant of the Model F-28C differs from the basic Model F-28C in that installation of items listed on Enstrom Specification Drawing Number 28-100005 permits operation at an MTOM of 1 066 kg (2 350 lb). |
| | 2.2 Additional Description for Variant 3 | This variant is for agricultural operation or external load operation up to an MTOM of 1 179 kg (2 600 lb). |
| | 2.3 Additional Description for Variant 4 | This variant is for operation with inflatable floats. |
| 3. | Equipment | The basic required equipment as prescribed in the applicable Airworthiness Regulations (see Certification Basis) must be installed in the helicopter for certification. In addition, the approved RFM is required. |
| 4. | Dimensions | |
| | 4.1 Fuselage | Length: 8.92 m (29 ft) (blade over tail)<br>Overall width: 1.80 m (7 ft 4 in)<br>Height: 2.74 m (9 ft) |
| | 4.2 Main Rotor | Diameter: 9.75 m (32 ft), 3 blades |
| | 4.3 Tail Rotor | Diameter: 1.42 m (4 ft 8 in), 2 blades |
| 5. | Engine | |
| | 5.1 Model | Lycoming Engines<br>1 x Model HIO-360-E1AD or 1 x HIO-360-E1BD<br>with Rajay Model 301E10-2 or Rotomaster (Hartzell Engine Technologies) Model 3BT5EE10J2 turbocharger per FAA STC SE100GL and Bendix (Precision Airmotive LLC) RSA-5AB1, Parts List 2524712-1, -2, -3, -5, -6, -7, -8, -9, or -10 fuel injector (see Note 4 regarding -E1BD engine) |
| | 5.2 Type Certificate | FAA TC/TCDS n°: 1E10<br>EASA TC/TCDS n°: EASA.IM.E.032 |
| | 5.3 Limitations | For all operations:<br>Maximum: 2 900 rpm (205 hp)<br>36.5 in Hg manifold pressure<br>Minimum: 2 750 rpm |
| 6. | Fluids (Fuel/ Oil/ Additives) | |
| | 6.1 Fuel | Minimum 100/130 or 100LL grade aviation gasoline |
| | 6.2 Oil | Refer to approved RFM |
| | 6.3 Additives | Refer to approved RFM |
| 7. | Fluid capacities | |
| | 7.1 Fuel | Fuel tank capacity: 159.0 litres (42 US gal)<br>at +2.46 m (+96.7 in)<br>Unusable fuel: 5.44 kg (12.0 lb)<br>at +2.39 m (+94.0 in) |
| | 7.2 Oil | Engine: 9.5 litres (2.2 US gal)<br>at +2.44 m (+96.0 in)<br>Undrainable oil: 1.81 kg (4 lb) |

 

at +2.44 m (+96.0 in)

7.3 Coolant System Capacity n/a

8. Air Speed Limitations

8.1 Air Speed Limitations for Variant 1

$V_{NE}$ [mph IAS]

| PA [ft] | OAT [°F] | | | | | | |
|---|---|---|---|---|---|---|---|
| | -20 | 0 | 20 | 40 | 60 | 80 | 100 |
| MSL | 112 | 112 | 112 | 112 | 112 | 104 | 98 |
| 2 000 | 112 | 112 | 112 | 104 | 99 | 92 | 87 |
| 4 000 | 112 | 106 | 99 | 92 | 88 | 83 | 80 |
| 6 000 | 100 | 95 | 88 | 83 | 79 | 75 | 72 |
| 8 000 | 89 | 84 | 79 | 75 | 72 | 69 | 65 |
| 10 000 | 81 | 76 | 72 | 69 | 65 | 62 | --- |
| 12 000 | 73 | 69 | 66 | 63 | 58 | --- | --- |
| Note: Conversion rules: mph x 1.609 = km/h; 1 ft = 0.3048 m; °F +40 x 5/9 = °C | | | | | | | |

8.2 Air Speed Limitations for Variant 2

$V_{NE}$ [mph IAS]

| PA [ft] | OAT [°F] | | | | | | |
|---|---|---|---|---|---|---|---|
| | -20 | 0 | 20 | 40 | 60 | 80 | 100 |
| MSL | 112 | 112 | 112 | 112 | 112 | 112 | 112 |
| 2 000 | 112 | 112 | 112 | 112 | 112 | 109 | 104 |
| 4 000 | 112 | 112 | 112 | 110 | 105 | 100 | 91 |
| 6 000 | 112 | 111 | 106 | 101 | 91 | 82 | 73 |
| 8 000 | 107 | 102 | 91 | 82 | 73 | 64 | 55 |
| 10 000 | 94 | 83 | 73 | 64 | 54 | --- | --- |
| 12 000 | 76 | 65 | 55 | --- | --- | --- | --- |
| Note: Conversion rules: mph x 1.609 = km/h; 1 ft = 0.3048 m; °F +40 x 5/9 = °C | | | | | | | |

8.3 Air Speed Limitations for Variant 3

$V_{NE}$ [mph IAS]

| PA [ft] | OAT [°F] | | | | | | |
|---|---|---|---|---|---|---|---|
| | -20 | 0 | 20 | 40 | 60 | 80 | 100 |
| MSL | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| 1 000 | 85 | 85 | 85 | 85 | 85 | 83 | 82 |
| 2 000 | 85 | 85 | 85 | 84 | 83 | 82 | 81 |
| 3 000 | 85 | 85 | 84 | 83 | 82 | 81 | 80 |
| 4 000 | 85 | 84 | 83 | 82 | 81 | 80 | --- |
| 5 000 | 84 | 83 | 82 | 81 | 80 | --- | --- |
| 6 000 | 83 | 82 | 81 | 80 | --- | --- | --- |
| Note: Conversion rules: mph x 1.609 = km/h; 1 ft = 0.3048 m; °F +40 x 5/9 = °C | | | | | | | |

8.4 Air Speed Limitations for Variant 4

$V_{NE}$ [mph IAS]

| PA [ft] | OAT [°F] | | | | | | |
|---|---|---|---|---|---|---|---|
| | -20 | 0 | 20 | 40 | 60 | 80 | 100 |
| MSL | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 2 000 | 100 | 100 | 100 | 100 | 100 | 97 | 93 |
| 4 000 | 100 | 100 | 100 | 97 | 93 | 88 | 82 |
| 6 000 | 100 | 98 | 94 | 88 | 82 | 75 | 68 |
| 8 000 | 95 | 90 | 82 | 75 | 68 | 62 | 55 |
| 10 000 | 84 | 77 | 69 | 62 | 55 | --- | --- |
| 12 000 | 70 | 63 | 55 | --- | --- | --- | --- |
| Note: Conversion rules: mph x 1.609 = km/h; 1 ft = 0.3048 m; °F +40 x 5/9 = °C | | | | | | | |

| | | |
|---|---|---|
| 9. | Rotor Speed Limitations | Power on:<br>Maximum 350 rpm<br>Minimum 332 rpm<br>Power off:<br>Maximum 385 rpm<br>Minimum 332 rpm |
| 10. | Maximum Operating Altitude and Temperature | |
| | 10.1 Altitude | Variants 1, 2 and 4:<br>Maximum: 12 000 ft DA (3 700 m)<br>Variant 3:<br>Maximum: 6 000 ft DA (1 800 m)<br>Refer to approved RFM for H-V diagram |
| | 10.2 Temperature | Not specified |
| 11. | Operating Limitations | VFR day/night<br>Non-icing conditions<br>No aerobatics<br>No IFR<br>Crosswind and downwind: when hovering or landing, adequate flight control can be maintained in winds up to 20 mph (17 kt, 32 km/h) |
| 12. | Maximum Mass | Variant 1: 998 kg (2 200 lb)<br>Variants 2, 4: 1 066 kg (2 350 lb)<br>Variant 3: 1 179 kg (2 600 lb) |
| 13. | Centre of Gravity Range | See approved RFM for schedule with GM. |
| | 13.1 Longitudinal | - |

Variant 1:
- for GM between 907 to 998 kg (2 000 to 2 200 lb) +2.34 to +2.41 m (+92.0 to +94.7 in)
- for GM below 907 kg (2 000 lb) +2.34 to +2.49 m (+92.0 to +98.0 in)

Variant 2:
- for GM at 1 066 kg (2 350 lb) +2.34 to +2.40 m (+92.0 to +94.6 in)
- for GM at 998 kg (2 200 lb) +2.34 to +2.46 m (+92.0 to +96.7 in)
- for GM at and below 907 kg (2 000 lb) +2.34 to +2.54 m (+92.0 to +100.0 in)

Variant 3:
- for GM at 1 179 kg (2 600 lb) +2.45 to +2.49 m (+96.5 to +98.0 in)
- for GM at 908 kg (2 000 lb) +2.36 to +2.51 m (+92.9 to +99.0 in)

Variant 4:
- for GM at 1 066 kg (2 350 lb) +2.34 to +2.40 m (+92.0 to +94.6 in)
- for GM at 939 kg (2 070 lb) +2.34 to +2.50 m (+92.0 to +98.5 in)

| | | |
|---|---|---|
| | 13.2 Lateral | Approved maximum asymmetric moment:<br>Variant 1: at 998 kg (2 200 lb):<br>+42.6 to -19.6 kgm (+3 700 to -1 700 lb·in)<br>Variants 2, 4: at 1 066 kg (2 350 lb):<br>+42.6 to -37.4 kgm (+3 700 to -3 250 lb·in)<br>Variant 3:<br>at 1 066 kg (2 350 lb):<br>+42.6 to -37.4 kgm (+3 700 to -3 250 lb·in)<br>above 1 066 kg (2 350 lb):<br>-36.6 to -21.4 kgm (-3 180 to -1 855 lb·in) |
| 14. | Datum | Longitudinal:<br>2.54 m (100.0 in) forward of the centre of the main rotor hub |

 

| | | |
|---|---|---|
| | | Lateral:<br>Rotorcraft centreline |
| 15. | Levelling Means | Lower longeron of pylon section |
| 16. | Stabiliser setting | Variant 1, 2, 3: fixed, 4° TE up relative to WL<br>Variant 4: fixed, 6° TE up relative to WL, per Drawings 28-17326 and 28-20000 |
| 17. | Minimum Flight Crew | 1 pilot, at +1.57 m (+62.0 in) |
| 18. | Maximum Passenger Seating Capacity | 2, at +1.57 m (+62.0 in) |
| 19. | Passenger Emergency Exit | 2, one on each side of the fuselage |
| 20. | Maximum Baggage / Cargo Loads | Baggage Box:<br>49 kg (108 lb) at +3.43 m (+135.0 in) |
| 21. | Rotor Blade Control Movement | For rigging information, refer to Maintenance Manual. |
| 22. | Auxiliary Power Unit (APU) | n/a |
| 23. | Life-limited Parts | Applicable life limits are published in EASA AD N°. 2015-0235 (or later revision).<br>See EASA AD publication tool for the current life limits for this model. |

IV. Operating and Service Instructions

1. Flight Manual (See also Section 10, General Note 1.)

- FAA approved RFM, dated 8 December 1975; reissued 21 December 1976, or later approved revision is required.
- FAA approved RFM, dated 20 April 1978, or later approved revision is required; (modified for increased GM) see Note 6.
- RFM Supplements:
  FAA approved RFM Supplement n° 1, dated 5 May 1978, or later approved revision is required; (for Agricultural Kit to 2600 lbs) see Note 7.
  FAA approved RFM Supplement n° 2, dated 16 June 1978, or later approved revision is required; (for Float Landing Gear) see Note 8.
  FAA approved RFM Supplement n° 3, dated 28 July 1978, or later approved revision is required; (for External Loads) see Note 9.
  FAA approved RFM Supplement n° 4, dated 28 July 1978, or later approved revision is required; (for Snowshoes) see Note 10.
  FAA approved RFM Supplement n° 7, dated 26 June 1981, or later approved revision is required; (for Electric Clutch Actuator).
  FAA approved RFM Supplement n° 8, dated 20 November 1981, or later approved revision is required; (for Emergency Float Landing Gear) see Note 8.
  FAA approved RFM Supplement n° 9, dated 30 June 1981, or later approved revision is required; (for Throttle Correlator).
  FAA approved RFM Supplement n° 11, dated 23 September 1983, or later approved revision is required; (for Auxiliary Fuel Tank) see Note 12.

2. Maintenance Manual (See also Section 10, General Note 1.)
   F-28A/F-28C Maintenance Manual, dated 18 August 1972 (or later revision).

3. Structural Repair Manual n/a

4. Weight and Balance Manual

   Refer to Section 6 of the approved RFM (see Chapter IV.1.) and take into account all weight and balance data. Current weight and balance report including list of equipment included in certificated empty weight and loading instructions when necessary must be provided for each helicopter at the time of original certification. For piston-engine powered models, the certificated empty weight and corresponding centre of gravity locations must include unusable fuel and undrainable oil (see Chapter III.7).

 

| | | |
|---|---|---|
| 5. | Illustrated Parts Catalogue | Enstrom Illustrated Parts Catalogue for Helicopter Models: F-28A, 280, F-28C, 280C, F-28F, 280F, 280FX |
| 6. | Service Letters and Service Bulletins | As published by Enstrom Helicopter |

V. Notes

1. Manufacturer's eligible serial numbers for model F-28C:
s/n 304, 331, and subsequent.
Except: s/n 344, 347, 360, 386, 387, 395, 397, 398, 409, 418, 419, 437, and 464, which are ineligible.
(For F-28C-2, see Note 11)

2. All placards required by either the approved RFM, the applicable operating rules, or the Certification Basis must be installed in the helicopter. This is in accordance with 14 CFR 27.1541 through 27.1565.
The following placard must be displayed in front of and in clear view of the pilot:
"This helicopter must be operated in compliance with operating limitations specified in the Approved Rotorcraft Flight Manual."

3. Retirement items and mandatory inspection items are contained in the pertinent model Maintenance Manual. The retirement times of critical parts are listed in Section III.23 (Life-limited parts). These values of retirement times of service life cannot be increased without FAA/EASA approval. Once the helicopter is operated at a GM in excess of 1 066 kg (2 350 lb) up to the maximum authorized 1 179 kg (2 600 lb), the service life requirements for 1179 kg (2 600 lb) must be used.

4. Model F-28C helicopters (s/n 304 and 331 through 480) are eligible for installation of a Lycoming Model HIO-360-E1BD engine, which has been modified in accordance with FAA STC SE100GL and is equipped with a Bendix RSA-5AB1, Parts List 2524712-1, -2, -3, -5, -6, -7, -8, -9, or -10 fuel injector (see Enstrom Service Information Letter n° 0091, Rev. A). All limitations and conditions for the Model F-28C helicopter remain applicable.

5. The "C" Model Turbocharger conversions must be accomplished by the Enstrom Helicopter Corporation in accordance with Enstrom Service Information Letter 0049, and are eligible for F-28A Models, s/n 003 through 303 and 305 through 330.

6. Model F-28C helicopters are eligible for increased GM to 1 066 kg (2 350 lb) if requirements of Enstrom Specification Drawing Number 28-100005 are complied with at the time of original manufacture or retrofitted at a later date and logged accordingly.
This change is FAA approved since 21 April 1978.

7. Model F-28C helicopters are certified for operation at a GM up to 1 179 kg (2 600 lb) when equipped with Agricultural Kit as specified on Enstrom drawing 28-22620 and installed in accordance with Enstrom Helicopter Corporation Report n° DO-280, Owner & Operator Manual for Wet/Dry Ag Kit 83100. F-28C Model helicopters must be converted to the 1 066 kg (2 350 lb) configuration (see Note 6) and operated within the limitations specified in the approved RFM Supplement. A logbook entry shall be made when the agricultural kit is installed and when it is removed. See Section 10, General Note 2, for further limitations.
The following portions of Part 6 of the Civil Air Regulations were considered inappropriate for the intended agricultural operations: CAR 6.100(c), 6.113(b)(c), 6.114, 6.116, and 6.123(b)(3).
The following paragraphs of CAR 6 were demonstrated at near sea level and 7 500 ft (2 286 m) density altitude conditions only: CAR 6.121(d) and 6.123(b)(4).
This change is FAA approved since 5 May 1978.

8. Model F-28C helicopters are eligible for the installation of inflatable floats, P/N D-24780, in accordance with Enstrom drawing 28-17326. When so equipped, F-28C models may be operated up to 1 066 kg (2 350 lb) GM. Each helicopter so equipped is approved for amphibious operations within the limitations prescribed by approved RFM Supplement n° 2.

   Model F-28C helicopters are approved for inflatable floats. These helicopters are eligible for the installation of inflatable floats, P/N 23D24409, in accordance with Enstrom drawing 28-17301. When so equipped, the F-28C model helicopter must be operated within the limitations prescribed in approved RFM Supplement n° 8. Helicopters equipped with float, P/N 23D24409, are limited to 975 kg (2 150 lb) GM for amphibious operations and must be placarded to so indicate. This provision excludes amphibious operations, yet allows emergency water landings at GM over 975 kg (2 150 lb).

V. Notes

This change is FAA approved since 20 June 1978.

9. Model F-28C helicopters are eligible for installation of a cargo hook in accordance with Enstrom drawing 28-22000 for the transportation of external cargo. The helicopter must be operated within the limitations prescribed in approved RFM Supplement. The maximum external load permitted on the cargo hook is 454 kg (1 000 lb). The Enstrom model F-28C (when converted to the 1 066 kg (2 350 lb) GM per Note 5. is certificated for operation at a GM up to 1 179 kg (2 600 lb) for cargo hook operation. A logbook entry shall be made when conducting cargo hook operation and additionally when operating between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb) GM. See Section 10, General Note 2, for further limitations when operating between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb) GM.
The following portions of Part 6 of the Civil Air Regulations were considered inappropriate for the intended operation at GM between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb): CAR 6.100(c), 6.113(b)(c), 6.114, 6.116, and 6.123(b)(3).
This change is FAA approved since 28 July 1982.

10. Model F-28C helicopters are eligible for the installation of Snowshoe Kit n° 28-22400 when operated within the prescribed limitations of the approved RFM Supplement.

11. Model F-28C-2 helicopters have a serial number that contains a dash 2 suffix. These models have a cabin structure containing a one-piece windshield, a 280 console and other product improvements defined by Enstrom Report n° DO-282, Definition of Enstrom Model F-28C-2 Helicopter.

    These models shall be operated within the prescribed limitations of the Enstrom F-28C Operator's Manual and FAA Approved Rotorcraft Flight Manual, as well as the F-28C-280C Maintenance Manual, except as noted otherwise.

    Enstrom applied at FAA in 1978 for this model.
    Manufacturer's eligible serial numbers for model F-28C-2:
    s/n 451-2, 452-2, 454-2 through 456-2, 461-2, 463-2 through 466-2, 468-2, 470-2, 472-2, 476-2, 478-2 through 480-2, 482-2, 484-2 through 489-2, 491-2 through 495-2, 497-2 through 505-2, 516-2, 518-2, 519-2, 521-2, and 522-2.
    Except: s/n 460-2, 471-2, 474-2, 490-2, and 496-2, which are ineligible.

12. Model F-28C helicopters are eligible for installation of an internal auxiliary fuel tank per Kit n° 28-01009. When so equipped, the helicopter must be operated within the prescribed limitations of the approved RFM Supplement.

* * *

**SECTION 4: 280C**

I. General

| | | |
|---|---|---|
| 1. | Type/ Model/ Variant | |
| | 1.1 Type | Enstrom F-28 |
| | 1.2 Model | 280C |
| | 1.3 Variants | Variant 1: MTOM 998 kg (2 200 lb); Original Configuration<br>Variant 2: MTOM 1 066 kg (2 350 lb); GM Increase (see Note 6)<br>Variant 3: MTOM 1 179 kg (2 600 lb); AgriKit and External Loads (see Notes 7, 9)<br>Variant 4: MTOM 1 066 kg (2 350 lb); Inflatable Floats (see Note 8) |
| 2. | Airworthiness Category | Small Rotorcraft |
| 3. | Manufacturer | Enstrom Helicopter Corporation<br>2209 22nd Street<br>Menominee, MI 49858, USA |
| 4. | Type Certification Application Date to | FAA: 20 March 1975<br>LBA DE: 26 March 1976 |
| 5. | State of Design Authority | FAA |
| 6. | Type Certificate Date by | FAA: 8 December 1975<br>LBA DE: 23 June 1977 |
| 7. | Type Certificate n° by | FAA: H1CE<br>LBA DE: 3041 |
| 8. | Type Certificate Data Sheet n° by | FAA: H1CE<br>LBA DE: 3041 |
| 9. | EASA Type Certification Date | 28 September 2003,<br>in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 2nd indented bullet. |

II. Certification Basis

| | | |
|---|---|---|
| 1. | Reference Date for determining the applicable requirements | 26 July 1962 |
| 2. | Airworthiness Requirements | As per compliance with Part 6 of the Civil Air Regulation effective 20 December 1956, as amended by 6-1 through 6-5 and included in the original Type Design Standard |
| 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 | Complies with the provisions of Article 6.1 of Regulation 216/2008 without the need to comply with the Standards of ICAO Annex 16, Volume I, by virtue of the date of type certification. See TCDSN EASA.IM.R.122. |
| 9. | Operational Suitability Data (OSD) | See SECTION 11 below. |

III. Technical Characteristics and Operational Limitations

| | | |
|---|---|---|
| 1. | Type Design Definition | Enstrom Helicopter Corporation Drawing 28-000002 |
| 2. | Description | Single, turbo-charged piston engine powered, three-seat helicopter with three-bladed, fully articulated main rotor, two-blade tail rotor, skid landing gear |
| | 2.1 Additional Description for Variant 2 | This variant of the Model 280C differs from the basic Model 280C in that installation of items listed on Enstrom Specification Drawing Number 28-100005 permits operation at an MTOM of 1 066 kg (2 350 lb). |
| | 2.2 Additional Description for Variant 3 | This variant is for agricultural operation or external load operation up to an MTOM of 1 179 kg (2 600 lb). |
| | 2.3 Additional Description for Variant 4 | This variant is for operation with inflatable floats. |
| 3. | Equipment | The basic required equipment as prescribed in the applicable Airworthiness Regulations (see Certification Basis) must be installed in the helicopter for certification. In addition, the approved RFM is required. |
| 4. | Dimensions | |
| | 4.1 Fuselage | Length: 8.92 m (29 ft) (blade over tail)<br>Overall width: 1.80 m (7 ft 4 in)<br>Height: 2.74 m (9 ft) |
| | 4.2 Main Rotor | Diameter: 9.75 m (32 ft), 3 blades |
| | 4.3 Tail Rotor | Diameter: 1.42 m (4 ft 8 in), 2 blades |
| 5. | Engine | |
| | 5.1 Model | Lycoming Engines<br>1 x Model HIO-360-E1AD or HIO-360-E1BD<br>with Rajay Model 301E10-2 or Rotomaster (Hartzell Engine Technologies) Model 3BT5EE10J2 turbocharger per FAA STC SE100GL and Bendix (Precision Airmotive LLC) RSA-5AB1, Parts List 2524712-1, -2, -3, -5, -6, -7, -8, -9, or -10 fuel injector (see Note 4 regarding -E1BD engine) |
| | 5.2 Type Certificate | FAA TC/TCDS n°: 1E10<br>EASA TC/TCDS n°: EASA.IM.E.032 |
| | 5.3 Limitations | For all operations:<br>Maximum: 2 900 rpm (205 hp)<br>36.5 in Hg manifold pressure<br>Minimum: 2 750 rpm |
| 6. | Fluids (Fuel/ Oil/ Additives) | |
| | 6.1 Fuel | Minimum 100/130 or 100LL grade aviation gasoline |
| | 6.2 Oil | Refer to approved RFM |
| | 6.3 Additives | Refer to approved RFM |
| 7. | Fluid capacities | |
| | 7.1 Fuel | Fuel tank capacity: 159.0 litres (42 US gal)<br>at +2.46 m (+96.7 in)<br>Unusable fuel: 5.44 kg (12.0 lb)<br>at +2.39 m (+94.0 in) |
| | 7.2 Oil | Engine: 9.5 litres (2.2 US gal)<br>at +2.44 m (+96.0 in)<br>Undrainable oil: 1.81 kg (4 lb)<br>at +2.44 m (+96.0 in) |

 

7.3 Coolant System Capacity n/a

8. Air Speed Limitations

8.1 Air Speed Limitations for Variant 1

$V_{NE}$ [mph IAS]

| PA [ft] | OAT [°F] | | | | | | |
|---|---|---|---|---|---|---|---|
| | -20 | 0 | 20 | 40 | 60 | 80 | 100 |
| MSL | 117 | 117 | 117 | 117 | 117 | 109 | 102 |
| 2 000 | 117 | 117 | 117 | 109 | 103 | 97 | 92 |
| 4 000 | 117 | 111 | 103 | 97 | 93 | 88 | 85 |
| 6 000 | 105 | 100 | 93 | 88 | 84 | 80 | 77 |
| 8 000 | 94 | 89 | 84 | 80 | 77 | 74 | 70 |
| 10 000 | 86 | 81 | 77 | 74 | 70 | 67 | --- |
| 12 000 | 78 | 74 | 71 | 68 | 63 | --- | --- |
| Note: Conversion rules: mph x 1.609 = km/h; 1 ft = 0.3048 m; °F +40 x 5/9 = °C | | | | | | | |

8.2 Air Speed Limitations for Variant 2

$V_{NE}$ [mph IAS]

| PA [ft] | OAT [°F] | | | | | | |
|---|---|---|---|---|---|---|---|
| | -20 | 0 | 20 | 40 | 60 | 80 | 100 |
| MSL | 117 | 117 | 117 | 117 | 117 | 117 | 117 |
| 2 000 | 117 | 117 | 117 | 117 | 117 | 114 | 109 |
| 4 000 | 117 | 117 | 117 | 115 | 110 | 105 | 96 |
| 6 000 | 117 | 116 | 111 | 105 | 96 | 87 | 78 |
| 8 000 | 112 | 107 | 96 | 87 | 78 | 69 | 60 |
| 10 000 | 99 | 88 | 78 | 69 | 59 | --- | --- |
| 12 000 | 81 | 70 | 60 | --- | --- | --- | --- |
| Note: Conversion rules: mph x 1.609 = km/h; 1 ft = 0.3048 m; °F +40 x 5/9 = °C | | | | | | | |

8.3 Air Speed Limitations for Variant 3

$V_{NE}$ [mph IAS]

| PA [ft] | OAT [°F] | | | | | | |
|---|---|---|---|---|---|---|---|
| | -20 | 0 | 20 | 40 | 60 | 80 | 100 |
| MSL | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| 1 000 | 85 | 85 | 85 | 85 | 85 | 83 | 82 |
| 2 000 | 85 | 85 | 85 | 84 | 83 | 82 | 81 |
| 3 000 | 85 | 85 | 84 | 83 | 82 | 81 | 80 |
| 4 000 | 85 | 84 | 83 | 82 | 81 | 80 | --- |
| 5 000 | 84 | 83 | 82 | 81 | 80 | --- | --- |
| 6 000 | 83 | 82 | 81 | 80 | --- | --- | --- |
| Note: Conversion rules: mph x 1.609 = km/h; 1 ft = 0.3048 m; °F +40 x 5/9 = °C | | | | | | | |

8.4 Air Speed Limitations for Variant 4

$V_{NE}$ [mph IAS]

| PA [ft] | OAT [°F] | | | | | | |
|---|---|---|---|---|---|---|---|
| | -20 | 0 | 20 | 40 | 60 | 80 | 100 |
| MSL | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 2 000 | 100 | 100 | 100 | 100 | 100 | 97 | 93 |
| 4 000 | 100 | 100 | 100 | 97 | 93 | 88 | 82 |
| 6 000 | 100 | 98 | 94 | 88 | 82 | 75 | 68 |
| 8 000 | 95 | 90 | 82 | 75 | 68 | 62 | 55 |
| 10 000 | 84 | 77 | 69 | 62 | 55 | --- | --- |
| 12 000 | 70 | 63 | 55 | --- | --- | --- | --- |
| Note: Conversion rules: mph x 1.609 = km/h; 1 ft = 0.3048 m; °F +40 x 5/9 = °C | | | | | | | |

| | | |
|---|---|---|
| 9. | Rotor Speed Limitations | Power on:<br>Maximum 350 rpm<br>Minimum 332 rpm<br>Power off:<br>Maximum 385 rpm<br>Minimum 332 rpm |
| 10. | Maximum Operating Altitude and Temperature | |
| | 10.1 Altitude | Variants 1, 2 and 4:<br>Maximum: 12 000 ft DA (3 700 m)<br>Variant 3:<br>Maximum: 6 000 ft DA (1 800 m)<br>Refer to approved RFM for H-V diagram |
| | 10.2 Temperature | Not specified |
| 11. | Operating Limitations | VFR day/night<br>Non-icing conditions<br>No aerobatics<br>No IFR<br>Crosswind and downwind: when hovering or landing, adequate flight control can be maintained in winds up to 20 mph (17 kt, 32 km/h) |
| 12. | Maximum Mass | Variant 1: 998 kg (2 200 lb)<br>Variants 2, 4: 1 066 kg (2 350 lb)<br>Variant 3: 1 179 kg (2 600 lb) |
| 13. | Centre of Gravity Range | See approved RFM for schedule with GM. |
| | 13.1 Longitudinal | |

Variant 1:
- for GM between 907 to 998 kg (2 000 to 2 200 lb) +2.34 to +2.41 m (+92.0 to +94.7 in)
- for GM below 907 kg (2 000 lb) +2.34 to +2.49 m (+92.0 to +98.0 in)

Variant 2:
- for GM at 1 066 kg (2 350 lb) +2.34 to +2.40 m (+92.0 to +94.6 in)
- for GM at 998 kg (2 200 lb) +2.34 to +2.46 m (+92.0 to +96.7 in)
- for GM at and below 907 kg (2 000 lb) +2.34 to +2.54 m (+92.0 to +100.0 in)

Variant 3:
- for GM at 1 179 kg (2 600 lb) +2.45 to +2.49 m (+96.5 to +98.0 in)
- for GM at 908 kg (2 000 lb) +2.36 to +2.51 m (+92.9 to +99.0 in)

Variant 4:
- for GM at 1 066 kg (2 350 lb) +2.34 to +2.40 m (+92.0 to +94.6 in)
- for GM at 939 kg (2 070 lb) +2.34 to +2.50 m (+92.0 to +98.5 in)

| | | |
|---|---|---|
| | 13.2 Lateral | Approved maximum asymmetric moment:<br>Variant 1: at 998 kg (2 200 lb):<br>+42.6 to -19.6 kgm (+3 700 to -1 700 lb·in)<br>Variants 2, 4: at 1 066 kg (2 350 lb):<br>+42.6 to -37.4 kgm (+3 700 to -3 250 lb·in)<br>Variant 3:<br>above 1 066 kg (2 350 lb):<br>-36.6 to -21.4 kgm (-3 180 to -1 855 lb·in) |
| 14. | Datum | Longitudinal:<br>2.54 m (100.0 in) forward of the centre of the main rotor hub<br>Lateral:<br>Rotorcraft centreline |
| 15. | Levelling Means | Lower longeron of pylon section |

| | | |
|---|---|---|
| 16. | Stabiliser setting | Variant 1, 2, 3: fixed, 6° TE up relative to WL<br>Variant 4: fixed, 6° TE up relative to WL, Trim tab per Drawings 28-17326 and 28-200003 |
| 17. | Minimum Flight Crew | 1 pilot, at +1.57 m (+62.0 in) |
| 18. | Maximum Passenger Seating Capacity | 2, at +1.57 m (+62.0 in) |
| 19. | Passenger Emergency Exit | 2, one on each side of the fuselage |
| 20. | Maximum Baggage / Cargo Loads | Baggage Box:<br>49 kg (108 lb) at +3.43 m (+135.0 in) |
| 21. | Rotor Blade Control Movement | For rigging information, refer to Maintenance Manual. |
| 22. | Auxiliary Power Unit (APU) | n/a |
| 23. | Life-limited Parts | Applicable life limits are published in EASA AD N°. 2015-0235 (or later revision).<br>See EASA AD publication tool for the current life limits for this model. |

IV. Operating and Service Instructions

1. Flight Manual (See also Section 10, General Note 1.)

- FAA approved RFM, dated 8 December 1975; reissued 21 December 1976, or later approved revision is required.
- FAA approved RFM, dated 23 September 1977, or later approved revision is required; (modified for increased GM) see Note 6.
- RFM Supplements:
  FAA approved RFM Supplement n° 1, dated 5 May 1978, or later approved revision is required; (for Agricultural Kit to 2600 lbs) see Note 7.
  FAA approved RFM Supplement n° 2, dated 19 May 1978, or later approved revision is required; (for Float Landing Gear) see Note 8.
  FAA approved RFM Supplement n° 3, dated 28 July 1978, or later approved revision is required; (for External Loads) see Note 9.
  FAA approved RFM Supplement n° 4, dated 28 July 1978, or later approved revision is required; (for Snowshoes) see Note 10.
  FAA approved RFM Supplement n° 8, dated 20 November 1981, or later approved revision is required; (for Emergency Float Landing Gear) see Note 8.
  FAA approved RFM Supplement n° 9, dated 30 June 1981, or later approved revision is required; (for Throttle Correlator).
  FAA approved RFM Supplement n° 11, dated 23 September 1983, or later approved revision is required; (for Auxiliary Fuel Tank) see Note 11.

2. Maintenance Manual (See also Section 10, General Note 1.)
   280/280C Maintenance Manual, dated 1977 (or later revision).

3. Structural Repair Manual n/a

4. Weight and Balance Manual

   Refer to Section 6 of the approved RFM (see Chapter IV.1.) and take into account all weight and balance data. Current weight and balance report including list of equipment included in certificated empty weight and loading instructions when necessary must be provided for each helicopter at the time of original certification. For piston-engine powered models, the certificated empty weight and corresponding centre of gravity locations must include unusable fuel and undrainable oil (see Chapter III.7).

5. Illustrated Parts Catalogue Enstrom Illustrated Parts Catalogue for Helicopter Models: F-28A, 280, F-28C, 280C, F-28F, 280F, 280FX

6. Service Letters and Service Bulletins As published by Enstrom Helicopter

 

V. Notes

1. Manufacturer's eligible serial numbers for model 280C:
s/n 1020, 1023, and subsequent.
Except: s/n 1035, 1044, 1046, 1113, 1142, 1166, 1183, and 1199, which are ineligible.

2. All placards required by either the approved RFM, the applicable operating rules, or the Certification Basis must be installed in the helicopter. This is in accordance with 14 CFR 27.1541 through 27.1565. The following placard must be displayed in front of and in clear view of the pilot:
"This helicopter must be operated in compliance with operating limitations specified in the Approved Rotorcraft Flight Manual."

3. Retirement items and mandatory inspection items are contained in the pertinent model Maintenance Manual. The retirement times of critical parts are listed in Section III.23 (Life-limited parts). These values of retirement times of service life cannot be increased without FAA/EASA approval. Once the helicopter is operated at a GM in excess of 1 066 kg (2 350 lb) up to the maximum authorized 1 179 kg (2 600 lb), the service life requirements for 1 179 kg (2 600 lb) must be used.

4. Model 280C (s/n 1020 and 1023 through 1183) helicopters are eligible for installation of a Lycoming Model HIO-360-E1BD engine, which has been modified in accordance with STC n° SE100GL and is equipped with a Bendix RSA-5AB1, Parts List 2524712-1, -2, -3, -5, -6, -7, -8, -9, or -10 fuel injector. (See Enstrom Service Information Letter n° 0091, Rev. A.)
All limitations and conditions for the Model 280C helicopters remain applicable.

5. The "C" Model Turbocharger conversions must be accomplished by the Enstrom Helicopter Corporation in accordance with Enstrom Service Information Letter 0049, and are eligible for 280 Models, s/n 1002 through 1019 including 1021 and 1022.

6. Model 280C helicopters are eligible for increased GM to 1 066 kg (2 350 lb) if requirements of Enstrom Specification Drawing Number 28-100005 are complied with at the time of original manufacture or retrofitted at a later date and logged accordingly.
This change is FAA approved since 23 September 1977.

7. Model 280C helicopters are certified for operation at a GM up to 1 179 kg (2 600 lb) when equipped with Agricultural Kit as specified on Enstrom drawing 28-22620 and installed in accordance with Enstrom Helicopter Corporation Report n° DO-280, Owner & Operator Manual for Wet/Dry Ag Kit 83100. Model 280C helicopters must be converted to the 1 066 kg (2 350 lb) configuration (see Note 6) and operated within the limitations specified in the approved RFM Supplement. A logbook entry shall be made when the agricultural kit is installed and when it is removed. See Section 10, General Note 2, for further limitations.
The following portions of Part 6 of the Civil Air Regulations were considered inappropriate for the intended agricultural operations: CAR 6.100(c), 6.113(b)(c), 6.114, 6.116, and 6.123(b)(3).
The following paragraphs of CAR 6 were demonstrated at near sea level and 7 500 ft (2 286 m) density altitude conditions only: CAR 6.121(d) and 6.123(b)(4).
This change is FAA approved since 5 May 1978.

8. Model 280C helicopters are eligible for the installation of inflatable floats, P/N D-24780, in accordance with Enstrom drawing 28-17326. When so equipped, 280C models may be operated up to 1 066 kg (2 350 lb) GM. Each helicopter so equipped is approved for amphibious operations within the limitations prescribed by approved RFM Supplement n° 2.
Model 280C helicopters are approved for inflatable floats. These helicopters are eligible for the installation of inflatable floats, P/N 23D24409, in accordance with Enstrom drawing 28-17301. When so equipped, the 280C model helicopter must be operated within the limitations prescribed in approved RFM Supplement n° 8. Helicopters equipped with float, P/N 23D24409, are limited to 975 kg (2 150 lb) GM for amphibious operations and must be placarded to so indicate. This provision excludes amphibious operations, yet allows emergency water landings at GM over 975 kg (2 150 lb).
This change is FAA approved since 20 June 1978.

9. Model 280C helicopters are eligible for installation of a cargo hook in accordance with Enstrom drawing 28-22000 for the transportation of external cargo. The helicopter must be operated within the limitations prescribed in approved RFM Supplement. The maximum external load permitted on the

 

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cargo hook is 454 kg (1 000 lb). The Enstrom model 280C (when converted to the 1 066 kg (2 350 lb) GM per Note 6. is certificated for operation at a GM up to 1 179 kg (2 600 lb) for cargo hook operation. A logbook entry shall be made when conducting cargo hook operation and additionally when operating between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb) GM. See Section 10, General Note 2, for further limitations when operating between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb) GM.
The following portions of Part 6 of the Civil Air Regulations were considered inappropriate for the intended operation at GM between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb): CAR 6.100(c), 6.113(b)(c), 6.114, 6.116, and 6.123(b)(3).
This change is FAA approved since 28 July 1982.

10. Model 280C helicopters are eligible for the installation of Snowshoe Kit n° 28-22400 when operated within the prescribed limitations of the approved RFM Supplement.

11. Model 280C helicopters are eligible for installation of an internal auxiliary fuel tank per Kit n° 28-01009. When so equipped, the helicopter must be operated within the prescribed limitations in the approved RFM Supplement.

* * *

 

**SECTION 5: F-28F** (incl. F-28F-R, see Note 11)

I. General

| | | |
|---|---|---|
| 1. | Type/ Model/ Variant | |
| | 1.1 Type | Enstrom F-28 |
| | 1.2 Models | F-28F<br>F-28F-R, see Note 11 |
| | 1.3 Variants | Variant 1: MTOM 1 066 kg (2 350 lb);<br>Original Configuration<br>Variant 2: MTOM 1 179 kg (2 600 lb);<br>AgriKit and External Loads (see Notes 4, 6)<br>Variant 3: MTOM 1 066 kg (2 350 lb);<br>GM Increase (see Note 5)<br>Variant 4: MTOM 1 179 kg (2 600 lb);<br>Drawing 28-100015 (see Note 10)<br>Variant 5: MTOM 1 179 kg (2 600 lb);<br>Inflatable Floats (see Note 5) |
| 2. | Airworthiness Category | Small Rotorcraft |
| 3. | Manufacturer | Enstrom Helicopter Corporation<br>2209 22nd Street<br>Menominee, MI 49858, USA |
| 4. | Type Certification Application Date to | FAA: 28 June 1978<br>LBA DE: 9 April 1987 |
| 5. | State of Design Authority | FAA |
| 6. | Type Certificate Date by | FAA: 31 December 1980<br>LBA DE: 15 December 1987 |
| 7. | Type Certificate n° by | FAA: H1CE<br>LBA DE: 3041 |
| 8. | Type Certificate Data Sheet n° by | FAA: H1CE<br>LBA DE: 3041 |
| 9. | EASA Type Certification Date | 28 September 2003,<br>in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 2nd indented bullet. |

II. Certification Basis

| | | |
|---|---|---|
| 1. | Reference Date for determining the applicable requirements | 26 July 1962 |
| 2. | Airworthiness Requirements | As per compliance with Part 6 of the Civil Air Regulation effective 20 December 1956, as amended by 6-1 through 6-5 and included in the original Type Design Standard |
| 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 | Complies with the provisions of Article 6.1 of Regulation 216/2008 without the need to comply with the Standards of ICAO Annex 16, Volume I, by virtue of the date of type certification. See TCDSN EASA.IM.R.122. |

 

| | | |
|---|---|---|
| 9. | Operational Suitability Data (OSD) | See SECTION 11 below. |

III. Technical Characteristics and Operational Limitations

| | | |
|---|---|---|
| 1. | Type Design Definition | Enstrom Helicopter Corporation Drawing 28-000003 |
| 2. | Description | Single, turbo-charged piston engine powered, three-seat helicopter with three-bladed, fully articulated main rotor, two-blade tail rotor, skid landing gear |
| | 2.1 Additional Description for Variant 2 | This variant is for agricultural operation or external load operation up to an MTOM of 1 179 kg (2 600 lb). |
| | 2.2 Additional Description for Variant 3 | This variant is for operation with inflatable floats. |
| | 2.3 Additional Description for Variant 4 | This variant of the model F-28F differs from variant 1 in that the installation of the items described in Enstrom Specification Drawing 28-100015 permits operation at GM up to 1 179 kg (2 600 lb). There are four GM/centre of gravity envelopes for this variant, each of which corresponds to a different $V_{NE}$ altitude envelope. |
| | 2.4 Additional Description for Variant 5 | This variant of the model F-28F differs from variant 1 in that the installation of the items described in Enstrom Drawing 28-17326 and Enstrom Specification Drawing 28-100015 permits operation with floats up to 1 179 kg (2 600 lb) GM. There are three GM/centre of gravity envelopes for this variant, each of which corresponds to a different $V_{NE}$/altitude envelope. |
| 3. | Equipment | The basic required equipment as prescribed in the applicable Airworthiness Regulations (see Certification Basis) must be installed in the helicopter for certification. In addition, the approved RFM is required. |
| 4. | Dimensions | |
| | 4.1 Fuselage | Length: 8.92 m (29 ft) (blade over tail)<br>Overall Width: 1.80 m (7 ft 4 in)<br>Height: 2.74 m (9 ft) |
| | 4.2 Main Rotor | Diameter: 9.75 m (32 ft), 3 blades |
| | 4.3 Tail Rotor | Diameter: 1.42 m (4 ft 8 in), 2 blades |
| 5. | Engine | |
| | 5.1 Model | Lycoming Engines<br>1 x Model HIO-360-F1AD<br>with Rajay Model 325E10-2 or Rotomaster (Hartzell Engine Technologies) Model 3BT5EE10J2 turbocharger per FAA STC SE484GL and Bendix (Precision Airmotive LLC) RSA-5AB1, Parts Number 2524858-A, -1, -2, -3, -4, or -5 fuel injector. |
| | 5.2 Type Certificate | FAA TC/TCDS n°: 1E10<br>LBA TC/TCDS n°: 4569<br>EASA TC/TCDS n°: EASA.IM.E.032 |
| | 5.3 Limitations | For all operations:<br>Maximum: 3 050 rpm (225 hp)<br>39.0 in Hg manifold pressure<br>Minimum: 2 900 rpm |
| 6. | Fluids (Fuel/ Oil/ Additives) | |
| | 6.1 Fuel | Minimum 100/130 or 100LL grade aviation gasoline |

6.2 Oil — Refer to approved RFM

6.3 Additives — Refer to approved RFM

7. Fluid capacities

7.1 Fuel — Fuel tank capacity: 159.0 litres (42 US gal) at +2.46 m (+96.7 in)
Unusable fuel: 5.44 kg (12.0 lb) at +2.39 m (+94.0 in)

7.2 Oil — Engine: 9.5 litres (2.2 US gal) at +2.44 m (+96.0 in)
Undrainable oil: 1.81 kg (4 lb) at +2.44 m (+96.0 in)

7.3 Coolant System Capacity — n/a

8. Air Speed Limitations

8.1 Air Speed Limitations for Variant 1

$V_{NE}$ [mph IAS]

| PA [ft] | OAT [°F] | | | | | | |
|---|---|---|---|---|---|---|---|
| | -20 | 0 | 20 | 40 | 60 | 80 | 100 |
| MSL | 112 | 112 | 112 | 112 | 112 | 112 | 112 |
| 2 000 | 112 | 112 | 112 | 112 | 112 | 109 | 105 |
| 4 000 | 112 | 112 | 112 | 110 | 105 | 100 | 91 |
| 6 000 | 112 | 111 | 106 | 100 | 90 | 81 | 73 |
| 8 000 | 107 | 102 | 92 | 82 | 73 | 64 | 55 |
| 10 000 | 94 | 84 | 74 | 65 | 55 | --- | --- |
| 12 000 | 76 | 65 | 56 | --- | --- | --- | --- |
| Note: Conversion rules: mph x 1.609 = km/h; 1 ft = 0.3048 m; °F +40 x 5/9 = °C | | | | | | | |

8.2 Air Speed Limitations for Variant 2

$V_{NE}$ [mph IAS]

| PA [ft] | OAT [°F] | | | | | | |
|---|---|---|---|---|---|---|---|
| | -20 | 0 | 20 | 40 | 60 | 80 | 100 |
| MSL | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| 1 000 | 85 | 85 | 85 | 85 | 85 | 83 | 82 |
| 2 000 | 85 | 85 | 85 | 84 | 83 | 82 | 81 |
| 3 000 | 85 | 85 | 84 | 83 | 82 | 81 | 80 |
| 4 000 | 85 | 84 | 83 | 82 | 81 | 80 | 69 |
| 5 000 | 84 | 83 | 82 | 81 | 80 | 68 | 57 |
| 6 000 | 83 | 82 | 81 | 80 | 68 | 60 | --- |
| 7 000 | 82 | 81 | 79 | 68 | 60 | --- | --- |
| 8 000 | 81 | 80 | 69 | 61 | --- | --- | --- |
| 9 000 | 80 | 72 | 59 | --- | --- | --- | --- |
| Note: Conversion rules: mph x 1.609 = km/h; 1 ft = 0.3048 m; °F +40 x 5/9 = °C | | | | | | | |

8.3 Air Speed Limitations for Variant 3

Never exceed 100 mph (160 km/h) IAS for standard sea level day at or below 1 066 kg (2 350 lb) GM. See approved RFM Supplement n° 2 for $V_{NE}$ reductions with altitude and GM and operations between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb).

8.4 Air Speed Limitations for Variant 4

Never exceed 112 mph (180 km/h) IAS for standard sea level day at or below 1 066 kg (2 350 lb) GM. See approved RFM for $V_{NE}$ reductions with altitude and GM.

8.5 Air Speed Limitations for Variant 5

Never exceed 100 mph (160 km/h) IAS for standard sea level day at or below 1 066 kg (2 350 lb) GM. See approved RFM Supplement n° 2 for $V_{NE}$ reductions with altitude and GM.

9. Rotor Speed Limitations

Power on:
Maximum 351 rpm
Minimum 334 rpm
Power off:
Maximum 385 rpm
Minimum 332 rpm

10. Maximum Operating Altitude and Temperature

10.1 Altitude

Variant 1:
Maximum: 12 000 ft DA (3 700 m)
Variant 2:
Maximum: 9 000 ft DA (2 700 m)
Variants 3, 5:
Maximum: 12 000 ft DA (3 700 m) at or below 1 066 kg (2 350 lb) GM. See approved RFM Supplement n° 2 for altitude reductions with GM.
Variant 4:
Maximum: 12 000 ft DA (3 700 m) at or below 1 066 kg (2 350 lb) GM. See approved RFM for altitude reductions with gross weight.

10.2 Temperature

Not specified

11. Operating Limitations

VFR day/night
Non-icing conditions
No aerobatics
No IFR
Crosswind and downwind: when hovering or landing, adequate flight control can be maintained in winds up to 20 mph (17 kt, 32 km/h)

12. Maximum Mass

Variant 1, 3: 1 066 kg (2 350 lb)
Variants 2, 4, 5: 1 179 kg (2 600 lb)

13. Centre of Gravity Range

13.1 Longitudinal

Variant 1:
- for GM at 1 066 kg (2 350 lb) +2.34 to +2.40 m (+92.0 to +94.6 in)
- for GM at 907 kg (2 000 lb) +2.34 to +2.54 m (+92.0 to +100.0 in)

See approved RFM for schedule with GM

Variant 2:
- for GM at 1 179 kg (2 600 lb) +2.45 to +2.49 m (+96.5 to +98.0 in)
- for GM at 1 066 kg (2 350 lb) +2.34 to +2.50 m (+92.0 to +98.3 in)
- for GM at 907 kg (2 000 lb) +2.34 to +2.50 m (+92.0 to +98.6 in)

Straight line variation between data points.

Variant 3:
Max. FWD is +2.34 m (+92.0 in) at all GM up to 1 066 kg (2 350 lb)
Max. AFT is +2.50 m (+98.5 in) at GM up to 939 kg (2 070 lb) and decreasing linearly to 2.40 m (+94.6 in) at 1 066 kg (2 350 lb)
See approved RFM Supplement n° 2 for schedule with GM.

Variant 4:
Max. FWD is +2.34 m (+92.0 in) at all GM up to 1 066 kg (2 350 lb) decreasing linearly to 2.45 m (+96.3 in) at 1 179 kg (2 600 lb)
Max. AFT is +2.54 m (+100.0 in) at all GM up to 907 kg (2 000 lb) decreasing linearly to +2.49 m (+98.0 in) at 1 179 kg (2 600 lb)
See approved RFM for schedule with GM.

Variant 5:
Max. FWD is +2.34 m (+92.0 in) at all GM up to 1 066 kg (2 350 lb) and decreasing linearly to +2.45 m (+96.5 in) at 1 179 kg (2 600 lb)
Max. AFT is +2.50 m (+98,5 in) at all GM up to 939 kg (2 070 lb) and decreasing linearly to +2.49 m (+98.0 in) at 1 179 kg (2 600 lb)
See approved RFM Supplement n° 2 for schedule with GM.

13.2 Lateral

Approved maximum asymmetric moment:

Variant 1:
+42.6 to -37.4 kgm (+3 700 to -3 250 in·lb) at 1 066 kg (2 350 lb)
See approved RFM for schedule with GM.

Variant 2:
-18.7 to -37.4 kgm (-1 620 to -3 250 in·lb) above 1 066 kg (2 350 lb)
See approved RFM for schedule with GM.

Variant 3:
+42.6 to -37.4 kgm (+3 700 to -3 250 in·lb) above 919 kg (2 025 lb)
See approved RFM Supplement n° 2 for schedule with GM.

Variant 4:
+42.6 to -37.4 kgm (+3 700 to -3 250 in·lb) above 919 kg (2 025 lb)
See approved RFM for schedule with GM.

Variant 5:
+42.6 to -37.4 kgm (+3 700 to -3 250 in·lb) above 919 kg (2 025 lb)
See approved RFM for schedule with GM.

| | | |
|---|---|---|
| 14. | Datum | Longitudinal:<br>2.54 m (100.0 in) forward of the centre of the main rotor hub<br>Lateral:<br>Rotorcraft centreline |
| 15. | Levelling Means | Lower longeron of pylon section |
| 16. | Stabiliser setting | Variant 1, 2, 3: fixed, 6° TE up relative to WL<br>Variant 4, 5: s/n 506, 507, and 509 through 743: fixed, 6° TE up relative to WL<br>s/n 744 and subsequent: fixed, 3°30’ TE up relative to WL |
| 17. | Minimum Flight Crew | 1 pilot, at +1.57 m (+62.0 in) |
| 18. | Maximum Passenger Seating Capacity | 2, at +1.57 m (+62.0 in) |
| 19. | Passenger Emergency Exit | 2, one on each side of the fuselage |
| 20. | Maximum Baggage / Cargo Loads | Baggage Box:<br>49 kg (108 lb) at +3.43 m (+135.0 in) |
| 21. | Rotor Blade Control Movement | For rigging information, refer to Maintenance Manual. |
| 22. | Auxiliary Power Unit (APU) | n/a |
| 23. | Life-limited Parts | Applicable life limits are published in Section 3 of the Enstrom F-28F/280F Series Maintenance Manual. |

IV. Operating and Service Instructions

| | | |
|---|---|---|
| 1. | Flight Manual | (See also Section 10, General Note 1.) |

- FAA approved RFM, dated 31 December 1980, or later approved revision is required.
- RFM Supplements:
  FAA approved RFM Supplement n° 1, dated 31 December 1980,
  or later approved revision is required; (for Agricultural Kit to 2 600 lb) see Note 4.

 

FAA approved RFM Supplement n° 2, dated 31 December 1980,
or later approved revision is required; (for Float Landing Gear) see Note 5.
FAA approved RFM Supplement n° 3, dated 31 December 1980,
or later approved revision is required; (for External Loads) see Note 6.
FAA approved RFM Supplement n° 4, dated 31 December 1980,
or later approved revision is required; (for Snowshoes) see Note 7.
FAA approved RFM Supplement n° 6, dated 26 June 1981,
or later approved revision is required; (for Right Side Pilot configuration) see Note 11.
FAA approved RFM Supplement n° 8, dated 20 November 1981,
or later approved revision is required; (for Emergency Float Landing Gear) see Note 5.
FAA approved RFM Supplement n° 11, dated 23 September 1983,
or later approved revision is required; (for Auxiliary Fuel Tank) see Note 8.
FAA approved RFM Supplement n° 12, dated 16 July 1986,
or later approved revision is required; (for Muffler Installation) see Note 9.
FAA approved RFM Supplement n° 28-AC-069, Revision 1, dated 21 March 2017,
or later approved revision is required, (for Navigation System with MD200-306 CDI) see Note 12.
FAA approved RFM Supplement n° 28-AC-070, dated 27 July 2015,
or later approved revision is required, (for Transponder with ADS-B Out) see Note 13.
FAA approved RFM Supplement n° 28-AC-074, dated 6 December 2017,
or later approved revision is required, (for Nav/Com Transceiver) see Note 14 and 15.
FAA approved RFM Supplement n° 28-AC-080, Revision 1 dated 21 May 2019,
or later approved revision is required, (for GMA 350Hc Audio Panel) see Note 16.
FAA approved RFM Supplement n° 28-AC-081, dated 28 March 2019,
or later approved revision is required, (for GTX 345 Transponder) see Note 17.

2. Maintenance Manual — (See also Section 10, General Note 1.)
F-28F/280F Series Maintenance Manual,
dated 28 June 1985 (or later revision).
For Maintenance Manual Supplements refer to V. Notes.

3. Structural Repair Manual — n/a

4. Weight and Balance Manual

Refer to Section 6 of the approved RFM (see Chapter IV.1.) and take into account all weight and balance data. Current weight and balance report including list of equipment included in certificated empty weight and loading instructions when necessary must be provided for each helicopter at the time of original certification. For piston-engine powered models, the certificated empty weight and corresponding centre of gravity locations must include unusable fuel and undrainable oil (see Chapter III.7).

5. Illustrated Parts Catalogue — Enstrom Illustrated Parts Catalogue for Helicopter Models: F-28A, 280, F-28C, 280C, F-28F, 280F, 280FX

6. Service Letters and Service Bulletins — As published by Enstrom Helicopter

V. Notes

1. Manufacturer's eligible serial numbers for model F-28F:
s/n 506, 507, 509 and subsequent.
Except: s/n 700, 708, 710, 712, 744, 769, and 817, which are ineligible.

2. All placards required by either the approved RFM, the applicable operating rules, or the Certification Basis must be installed in the helicopter. This is in accordance with 14 CFR 27.1541 through 27.1565. The following placard must be displayed in front of and in clear view of the pilot:
"This helicopter must be operated in compliance with operating limitations specified in the Approved Rotorcraft Flight Manual."

3. Retirement items and mandatory inspection items are contained in the pertinent model Maintenance Manual. The retirement times of critical parts are listed in Section III.23 (Life-limited parts). These values of retirement times of service life cannot be increased without FAA/EASA approval. Once the helicopter is operated at a GM in excess of 1 066 kg (2 350 lb) up to the maximum authorized 1 179 kg

 

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(2 600 lb), the service life requirements for 1 179 kg (2 600 lb) must be used.

4. Model F-28F helicopters are certified for operation at a GM up to 1 179 kg (2 600 lb) when equipped with Agricultural Kit as specified on Enstrom drawing 28-22620 and installed in accordance with Enstrom Helicopter Corporation Report n° DO-280, Owner & Operator Manual for Wet/Dry Ag Kit 83100. A logbook entry shall be made when the agricultural kit is installed and when it is removed. See Section 10, General Note 2 for further limitations.
The following portions of Part 6 of the Civil Air Regulations were considered inappropriate for the intended agricultural operations: CAR 6.100(c), 6.113(b)(c), 6.114, 6.116, and 6.123(b)(3).
The following paragraphs of CAR 6 were demonstrated at near sea level and 7 500 feet (2 286 m) density altitude conditions only: CAR 6.121(d) and 6.123(b)(4).
This change is FAA approved since 31 December 1980.

5. Model F-28F helicopters are eligible for the installation of inflatable floats, P/N D-24780, in accordance with Enstrom drawing 28-17326. When so equipped, F-28F models may be operated up to 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb) GM (see Note 3). F-28F Models configured per Note 10 may be operated up to 1 179 kg (2 600 lb) GM. Each helicopter so equipped is approved for operations within the limitations prescribed by approved RFM Supplement n° 2.
A logbook entry shall be made when operating between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb) GM. See Section 10, General Note 2, for further limitations when operating between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb) GM.
This change is FAA approved since 31 December 1980.
The following portions of Part 6 of the Civil Air Regulations were considered inappropriate for the intended operations at GM between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb) if not configured per Note 10: CAR 6.100(c), 6.113(b)(c), 6.114, 6.116, and 6.123(b)(3).
The helicopter must be operated within the limitations prescribed in the appropriate approved RFM Supplement.
Model F-28F helicopters are approved for inflatable floats. These helicopters are eligible for the installation of inflatable floats, P/N 23D24409, in accordance with Enstrom drawing 28-17301. When so equipped, the helicopter must be operated within the limitations prescribed in approved RFM Supplement n° 8. Helicopters equipped with float, P/N 23D24409, are limited to 975 kg (2 150 lb) GM and must be placarded to so indicate. This provision excludes operations, yet allows emergency water landings at GM over 975 kg (2 150 lb).

6. Model F-28F helicopters are eligible for installation of a cargo hook in accordance with Enstrom drawing 28-22000 for the transportation of external cargo. The helicopter must be operated within the limitations prescribed in the approved RFM Supplement. The maximum external load permitted on the cargo hook is 454 kg (1 000 lb). The Enstrom model F-28F is certificated for operation at a GM up to 1 179 kg (2 600 lb) for cargo hook operation.
A logbook entry shall be made when conducting cargo hook operation and additionally when operating between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb) GM. See Section 10, General Note 2, for further limitations when operating between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb) GM.
The following portions of Part 6 of the Civil Air Regulations were considered inappropriate for the intended operation at GM between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb): CAR 6.100(c), 6.113(b)(c), 6.114, 6.116, and 6.123(b)(3).
This change is FAA approved since 31 December 1980.

7. Model F-28F helicopters are eligible for the installation of Snowshoe Kit n° 28-22400 when operated within the prescribed limitations of the approved RFM Supplement.

8. Model F-28F helicopters are eligible for installation of an internal auxiliary fuel tank per Kit n° 28-01009. When so equipped, the helicopter must be operated within the prescribed limitations of the approved RFM Supplement.

9. Model F-28F helicopters are eligible for installation of Wall-Colomony Muffler P/N ENX-0001 or P/N 28-12577-1 in place of the standard tailpipe. When so equipped, the helicopter must be operated within the prescribed limitations of the approved RFM Supplement. No further modification to the rotorcraft is required.

10. Model F-28F helicopters are eligible for increased GM to 1 179 kg (2 600 lb) if the helicopter complies with

 

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the requirements of Enstrom Specification Drawing n° 28-100015 at the time of original manufacture or are retrofitted at a later date and logged accordingly. In accordance with Enstrom Service Information Letter 0130, Models eligible for retrofitting are: all F-28F helicopters prior to s/n 731.

11. Model F-28F helicopters are eligible for installation of a "Right Hand Pilot in Command" Kit (Kit n° 28-01002-3). Eligible helicopters, when so equipped, will have a dash R model designation (F-28F-R).

    Model F-28F-R shall be operated within the prescribed limitations of the Enstrom F-28F Operator's Manual and FAA Approved Rotorcraft Flight Manual and respective Flight Manual Supplement, as well as the Enstrom F-28F/280F Series Maintenance Manual, except as noted otherwise.

12. Model F-28F helicopters are eligible for installation of the Navigation System with MD200-306 CDI, n° 28-22112 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-069, and maintained in accordance with Enstrom F-28F/280F Series Maintenance Manual Supplement n° 1, latest revision.

13. Model F-28F helicopters are eligible for installation of the Transponder with ADS-B Out, n° 28-22028 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-070, and maintained in accordance with Enstrom F-28F/280F Series Maintenance Manual Supplement n° 1, latest revision.

14. Model F-28F helicopters are eligible for installation of the NAV/COM Transceiver, n° 28-22063 when operated within the prescribed limitations of RFM Supplement n° 28-AC-074, and maintained in accordance with Enstrom F-28F/280F Series Maintenance Manual Supplement n° 1, latest revision.

15. Model F-28F helicopters are eligible for installation of the Course Deviation Indicator, n° 28-22095 when maintained in accordance with Enstrom F-28F/280F Series Maintenance Manual Supplement n° 1, latest revision.

16. Model F-28F helicopters are eligible for installation of the GMA 350Hc Audio Panel, n° 28-22048 with disabled voice recognition when operated within the prescribed limitations of the RFM Supplement n° 28-AC-080, and maintained in accordance with Enstrom F-28F/280F Series Maintenance Manual Supplement n° 1, latest revision.

17. Model F-28F helicopters are eligible for installation of the GTX 345 Transponder, n° 28-22028 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-081, and maintained in accordance with Enstrom F-28F/280F Series Maintenance Manual Supplement n° 1, latest revision.

* * *

 

**SECTION 6: 280F**

I. General

| | | |
|---|---|---|
| 1. | Type/ Model/ Variant | |
| | 1.1 Type | Enstrom F-28 |
| | 1.2 Model | 280F |
| | 1.3 Variants | Variant 1: MTOM 1 066 kg (2 350 lb); Original Configuration<br>Variant 2: MTOM 1 179 kg (2 600 lb); AgriKit and External Loads (see Notes 4, 6)<br>Variant 3: MTOM 1 066 kg (2 350 lb); Inflatable Floats (see Note 5)<br>Variant 4: 1 179 kg (2 600 lb); Increase in GM (see Note 10)<br>Variant 5: MTOM 1 179 kg (2 600 lb); Inflatable Floats (see Note 5) |
| 2. | Airworthiness Category | Small Rotorcraft |
| 3. | Manufacturer | Enstrom Helicopter Corporation<br>2209 22nd Street<br>Menominee, MI 49858, USA |
| 4. | Type Certification Application Date to | FAA: 28 June 1978<br>LBA DE: 12 May 1982 |
| 5. | State of Design Authority | FAA |
| 6. | Type Certificate Date by | FAA: 31 December 1980<br>LBA DE: 25 September 1984 |
| 7. | Type Certificate n° by | FAA: H1CE<br>LBA DE: 3041 |
| 8. | Type Certificate Data Sheet n° by | FAA: H1CE<br>LBA DE: 3041 |
| 9. | EASA Type Certification Date | 28 September 2003,<br>in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 2nd indented bullet. |

II. Certification Basis

| | | |
|---|---|---|
| 1. | Reference Date for determining the applicable requirements | 26 July 1962 |
| 2. | Airworthiness Requirements | As per compliance with Part 6 of the Civil Air Regulation effective 20 December 1956, as amended by 6-1 through 6-5 and included in the original Type Design Standard |
| 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 | Complies with the provisions of Article 6.1 of Regulation 216/2008 without the need to comply with the Standards of ICAO Annex 16, Volume I, by virtue of the date of type certification. See TCDSN EASA.IM.R.122. |
| 9. | Operational Suitability Data (OSD) | See SECTION 11 below. |

 

III. Technical Characteristics and Operational Limitations

| | | |
|---|---|---|
| 1. | Type Design Definition | Enstrom Helicopter Corporation Drawing 28-10005 |
| 2. | Description | Single, turbo-charged piston engine powered, three-seat helicopter with three-bladed, fully articulated main rotor, two-blade tail rotor, skid landing gear |
| 2.1 | Additional Description for Variant 2 | This variant is for agricultural operation or external load operation up to an MTOM of 1 179 kg (2 600 lb). |
| 2.2 | Additional Description for Variant 3 | This variant is for operation with inflatable floats. |
| 2.3 | Additional Description for Variant 4 | This variant of the model 280F differs from variant 1 in that the installation of the items described in Enstrom Specification Drawing 28-100015 permits operation at GM up to 1 179 kg (2 600 lb). There are four GM/centre of gravity envelopes for this variant, each of which corresponds to a different $V_{NE}$ altitude envelope. |
| 2.4 | Additional Description for Variant 5 | This variant of the model 280F differs from the basic model 280F in that the installation of the items described in Enstrom Drawing 28-17326 and Enstrom Specification Drawing 28-100015 permits operation with floats up to 1 179 kg (2 600 lb) GM. There are three GM/centre of gravity envelopes for this variant, each of which corresponds to a different $V_{NE}$/altitude envelope. |
| 3. | Equipment | The basic required equipment as prescribed in the applicable Airworthiness Regulations (see Certification Basis) must be installed in the helicopter for certification. In addition, the approved RFM is required. |
| 4. | Dimensions | |
| 4.1 | Fuselage | Length: 8.92 m (29 ft) (blade over tail)<br>Overall width: 1.80 m (7 ft 4 in)<br>Height: 2.74 m (9 ft) |
| 4.2 | Main Rotor | Diameter: 9.75 m (32 ft), 3 blades |
| 4.3 | Tail Rotor | Diameter: 1.42 m (4 ft 8 in), 2 blades |
| 5. | Engine | |
| 5.1 | Model | Lycoming Engines<br>1 x Model HIO-360-F1AD<br>with Rajay Model 325E10-2 or Rotomaster (Hartzell Engine Technologies) Model 3BT5EE10J2 turbocharger per FAA STC SE484GL and Bendix (Precision Airmotive LLC) RSA-5AB1, Parts Number 2524858-A, -1, -2, -3, -4, or -5 fuel injector. |
| 5.2 | Type Certificate | FAA TC/TCDS n°: 1E10<br>LBA TC/TCDS n°: 4569<br>EASA TC/TCDS n°: EASA.IM.E.032 |
| 5.3 | Limitations | For all operations:<br>Maximum: 3 050 rpm (225 hp)<br>39.0 in Hg manifold pressure<br>Minimum: 2 900 rpm |
| 6. | Fluids (Fuel/ Oil/ Additives) | |
| 6.1 | Fuel | Minimum 100/130 or 100LL grade aviation gasoline |
| 6.2 | Oil | Refer to approved RFM |

 

6.3 Additives — Refer to approved RFM

7. Fluid capacities

7.1 Fuel — Fuel tank capacity: 159.0 litres (42 US gal) at +2.46 m (+96.7 in)
Unusable fuel: 5.44 kg (12.0 lb) at +2.39 m (+94.0 in)

7.2 Oil — Engine: 9.5 litres (2.2 US gal) at +2.44 m (+96.0 in)
Undrainable oil: 1.81 kg (4 lb) at +2.44 m (+96.0 in)

7.3 Coolant System Capacity — n/a

8. Air Speed Limitations

8.1 Air Speed Limitations for Variant 1

$V_{NE}$ [mph IAS]

| PA [ft] | OAT [°F] | | | | | | |
|---|---|---|---|---|---|---|---|
| | -20 | 0 | 20 | 40 | 60 | 80 | 100 |
| MSL | 117 | 117 | 117 | 117 | 117 | 117 | 117 |
| 2 000 | 117 | 117 | 117 | 117 | 117 | 114 | 109 |
| 4 000 | 117 | 117 | 117 | 115 | 110 | 105 | 96 |
| 6 000 | 117 | 116 | 111 | 105 | 96 | 87 | 78 |
| 8 000 | 112 | 107 | 96 | 87 | 78 | 69 | 60 |
| 10 000 | 99 | 88 | 78 | 69 | 59 | --- | --- |
| 12 000 | 81 | 70 | 60 | --- | --- | --- | --- |
| Note: Conversion rules: mph x 1.609 = km/h; 1 ft = 0.3048 m; °F +40 x 5/9 = °C | | | | | | | |

8.2 Air Speed Limitations for Variant 2

$V_{NE}$ [mph IAS]

| PA [ft] | OAT [°F] | | | | | | |
|---|---|---|---|---|---|---|---|
| | -20 | 0 | 20 | 40 | 60 | 80 | 100 |
| MSL | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| 1 000 | 85 | 85 | 85 | 85 | 85 | 83 | 82 |
| 2 000 | 85 | 85 | 85 | 84 | 83 | 82 | 81 |
| 3 000 | 85 | 85 | 84 | 83 | 82 | 81 | 80 |
| 4 000 | 85 | 84 | 83 | 82 | 81 | 80 | 69 |
| 5 000 | 84 | 83 | 82 | 81 | 80 | 68 | 57 |
| 6 000 | 83 | 82 | 81 | 80 | 68 | 60 | --- |
| 7 000 | 82 | 81 | 79 | 68 | 60 | --- | --- |
| 8 000 | 81 | 80 | 69 | 61 | --- | --- | --- |
| 9 000 | 80 | 72 | 59 | --- | --- | --- | --- |
| Note: Conversion rules: mph x 1.609 = km/h; 1 ft = 0.3048 m; °F +40 x 5/9 = °C | | | | | | | |

8.3 Air Speed Limitations for Variant 3

Never exceed 100 mph (160 km/h) IAS for standard sea level day at or below 1 066 kg (2 350 lb) GM. See approved RFM Supplement n° 2 for $V_{NE}$ reductions with altitude and GM and for operations between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb).

8.4 Air Speed Limitations for Variant 4

Never exceed 117 mph (188 km/h) IAS for standard sea level day at or below 1 066 kg (2 350 lb) GM. See approved RFM for $V_{NE}$ reductions with altitude and GM.

8.5 Air Speed Limitations for Variant 5

Never exceed 100 mph (160 km/h) IAS for standard sea level day at or below 1 066 kg (2 350 lb) GM. See approved RFM Supplement n° 2 for $V_{NE}$ reductions with altitude and GM.

9. Rotor Speed Limitations

Power off:
Maximum 385 rpm
Minimum 332 rpm

10. Maximum Operating Altitude and Temperature

10.1 Altitude

Variant 1:
Maximum: 12 000 ft DA (3 700 m)
Variant 2:
Maximum: 9 000 ft DA (2 700 m)
Variant 3:
Maximum: 12 000 ft DA (3 700 m) at or below 1 066 kg (2 350 lb) GM. See approved RFM Supplement n° 2 for altitude reductions with GM and for operations between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb).
Variant 4:
Maximum: 12 000 ft DA (3 700 m) at or below 1 066 kg (2 350 lb) GM. See approved RFM for altitude reductions with GM.
Variant 5:
Maximum: 12 000 ft DA (3 700 m) at or below 1 066 kg (2 350 lb) GM. See approved RFM Supplement n° 2 for altitude reductions with GM.

10.2 Temperature

Not specified

11. Operating Limitations

VFR day/night
Non-icing conditions
No aerobatics
No IFR
Crosswind and downwind: when hovering or landing, adequate flight control can be maintained in winds up to 20 mph (17 kt, 32 km/h)

12. Maximum Mass

Variant 1, 3: 1 066 kg (2 350 lb)
Variants 2, 4, 5: 1 179 kg (2 600 lb)

13. Centre of Gravity Range

13.1 Longitudinal

Variant 1:
- for GM at 1 066 kg (2 350 lb) +2.34 to +2.40 m (+92.0 to +94.6 in)
- for GM at 907 kg (2 000 lb) +2.34 to +2.54 m (+92.0 to +100.0 in)

See approved RFM for schedule with GM
Variant 2:
- for GM at 1 179 kg (2 600 lb) +2.45 to +2.49 m (+96.5 to +98.0 in)
- for GM at 1 066 kg (2 350 lb) +2.34 to +2.50 m (+92.0 to +98.3. in)
- for GM at 907 kg (2 000 lb) +2.34 to +2.50 m (+92.0 to +98.6 in)

Straight line variation between data points.
Variant 3:
Max. FWD is +2.34 m (+92.0 in) at all GM up to 1 066 kg (2 350 lb)
Max. AFT is +2.50 m (+98.5 in) at all GM up to 939 kg (2 070 lb) and decreasing linearly to 2.40 m (+94.6 in) at 1 066 kg (2 350 lb)
See approved RFM Supplement n° 2 for schedule with GM and for operations between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb).
Variant 4:
Max. FWD is +2.34 m (+92.0 in) at all GM up to 1 066 kg (2 350 lb) decreasing linearly to +2.45 m (+96.3 in) at 1 179 kg (2 600 lb)
Max. AFT is +2.54 m (+100.0 in) at all GM up to 907 kg (2 000 lb) decreasing linearly to +2.49 m

 

(+98.0 in) at 1 179 kg (2 600 lb)
See approved RFM for schedule with GM.
Variant 5:
Max. FWD is +2.34 m (+92.0 in) at all GM up to 1 066 kg (2 350 lb) and decreasing linearly to +2.45 m (+96.5 in) at 1 179 kg (2 600 lb)
Max. AFT is +2.50 m (+98.5 in) at all GM up to 939 kg (2 070 lb) and decreasing linearly to +2.49 m (+98.0 in) at 1 179 kg (2 600 lb)
See approved RFM Supplement n° 2 for schedule with GM.

13.2 Lateral

Approved maximum asymmetric moment:
Variant 1:
+42.6 to -37.4 kgm (+3 700 to -3 250 in·lb) at 1 066 kg (2 350 lb)
See approved RFM for schedule with GM.
Variant 2:
-18.7 to -37.4 kgm (-1 620 to -3 250 in·lb) above 1 066 kg (2 350 lb)
See approved RFM for schedule with GM.
Variant 3:
+42.6 to -37.4 kgm (+3 700 to -3 250 in·lb) above 919 kg (2 025 lb)
See approved RFM Supplement n° 2 for schedule with GM and for operations between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb).
Variant 4 and 5:
+42.6 to -37.4 kgm (+3 700 to -3 250 in·lb) above 919 kg (2 025 lb)
See approved RFM for schedule with GM.

| | | |
|---|---|---|
| 14. | Datum | Longitudinal:<br>2.54 m (100.0 in) forward of the centre of the main rotor hub<br>Lateral:<br>Rotorcraft centreline |
| 15. | Levelling Means | Lower longeron of pylon section |
| 16. | Stabiliser setting | Variant 1, 2, 4: fixed, 6° TE up relative to WL<br>Variant 3, 5: fixed, 6° TE up relative to WL,<br>Trim tab per Drawing 28-17326 |
| 17. | Minimum Flight Crew | 1 pilot, at +1.57 m (+62.0 in) |
| 18. | Maximum Passenger Seating Capacity | 2, at +1.57 m (+62.0 in) |
| 19. | Passenger Emergency Exit | 2, one on each side of the fuselage |
| 20. | Maximum Baggage / Cargo Loads | Baggage Box:<br>49 kg (108 lb) at +3.43 m (+135.0 in) |
| 21. | Rotor Blade Control Movement | For rigging information, refer to Maintenance Manual. |
| 22. | Auxiliary Power Unit (APU) | n/a |
| 23. | Life-limited Parts | Applicable life limits are published in Section 3 of the Enstrom F-28F/280F Series Maintenance Manual. |

IV. Operating and Service Instructions

1. Flight Manual (See also Section 10, General Note 1.)

- FAA approved RFM, dated 31 December 1980, or later approved revision is required.
- RFM Supplements:
  FAA approved RFM Supplement n° 1, dated 31 December 1980,
  or later approved revision is required; (for Agricultural Kit to 2 600 lb) see Note 4.
  FAA approved RFM Supplement n° 2, dated 31 December 1980,
  or later approved revision is required; (for Float Landing Gear) see Note 5.
  FAA approved RFM Supplement n° 3, dated 31 December 1980,

or later approved revision is required; (for External Loads) see Note 6.
FAA approved RFM Supplement n° 4, dated 31 December 1980,
or later approved revision is required; (for Snowshoes) see Note 7.
FAA approved RFM Supplement n° 8, dated 20 November 1981,
or later approved revision is required; (for Emergency Float Landing Gear) see Note 5.
FAA approved RFM Supplement n° 11, dated 23 September 1983,
or later approved revision is required; (for Auxiliary Fuel Tank) see Note 8.
FAA approved RFM Supplement n° 12, dated 16 July 1986,
or later approved revision is required; (for Muffler Installation) see Note 9.

| | | |
|---|---|---|
| 2. | Maintenance Manual | (See also Section 10, General Note 1.)<br>F-28F/280F Series Maintenance Manual, dated 28 June 1985 (or later revision). |
| 3. | Structural Repair Manual | n/a |

4. Weight and Balance Manual

Refer to Section 6 of the approved RFM (see Chapter IV.1.) and take into account all weight and balance data. Current weight and balance report including list of equipment included in certificated empty weight and loading instructions when necessary must be provided for each helicopter at the time of original certification. For piston-engine powered models, the certificated empty weight and corresponding centre of gravity locations must include unusable fuel and undrainable oil (see Chapter III.7).

| | | |
|---|---|---|
| 5. | Illustrated Parts Catalogue | Enstrom Illustrated Parts Catalogue for Helicopter Models: F-28A, 280, F-28C, 280C, F-28F, 280F, 280FX |
| 6. | Service Letters and Service Bulletins | As published by Enstrom Helicopter |

V. Notes

1. Manufacturer's eligible serial numbers for model 280F:
s/n 1212, 1500 and subsequent.
Except: s/n 1507 and 1512, which are ineligible.

2. All placards required by either the approved RFM, the applicable operating rules, or the Certification Basis must be installed in the helicopter. This is in accordance with 14 CFR 27.1541 through 27.1565.
The following placard must be displayed in front of and in clear view of the pilot:
"This helicopter must be operated in compliance with operating limitations specified in the Approved Rotorcraft Flight Manual."

3. Retirement items and mandatory inspection items are contained in the pertinent model Maintenance Manual. The retirement times of critical parts are listed in Section III.23 (Life-limited parts). These values of retirement times of service life cannot be increased without FAA/EASA approval. Once the helicopter is operated at a GM in excess of 1 066 kg (2 350 lb) up to the maximum authorized 1 179 kg (2 600 lb), the service life requirements for 1 179 kg (2 600 lb) must be used.

4. Model 280F helicopters are certified for operation at a GM up to 1 179 kg (2 600 lb) when equipped with Agricultural Kit as specified on Enstrom drawing 28-22620 and installed in accordance with Enstrom Helicopter Corporation Report n° DO-280, Owner & Operator Manual for Wet/Dry Ag Kit 83100.
A logbook entry shall be made when the agricultural kit is installed and when it is removed. See Section 10, General Note 2, for further limitations.
The following portions of Part 6 of the Civil Air Regulations were considered inappropriate for the intended agricultural operations: CAR 6.100(c), 6.113(b)(c), 6.114, 6.116, and 6.123(b)(3).
The following paragraphs of CAR 6 were demonstrated at near sea level and 7 500 ft (2 286 m) density altitude conditions only: CAR 6.121(d) and 6.123(b)(4).
This change is FAA approved since 31 December 1980.

5. Model 280F helicopters are eligible for the installation of inflatable floats, P/N D-24780, in accordance with Enstrom drawing 28-17326. When so equipped, 280F models may be operated up to 1 066 kg and 1 179 kg (2 350 lb and 2 600 lb) GM (see Note 3). 280F Models configured per Note 10 may be operated up to 1 179 kg (2 600 lb) GM. Each helicopter so equipped is approved for operations within the

V. Notes

limitations prescribed by the approved RFM Supplement n° 2. A logbook entry shall be made when operating between 1 066 kg and 1 179 kg (2 350 lb and 2 600 lb) GM. See Section 10, General Note 2 for further limitations when operating between 1 066 kg and 1 179 kg (2 350 lb and 2 600 lb) GM.
This change is FAA approved since 31 December 1980.
The following portions of Part 6 of the Civil Air Regulations were considered inappropriate for the intended operations at GM between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb) if not configured per Note 10: CAR 6.100(c), 6.113(b)(c), 6.114, 6.116, and 6.123(b)(3).
The helicopter must be operated within the limitations prescribed in the appropriate approved RFM Supplement.
Model 280F helicopters are approved for inflatable floats. These models helicopters are eligible for the installation of inflatable floats, P/N 23D24409, in accordance with Enstrom drawing 28-17301. When so equipped, the helicopter must be operated within the limitations prescribed in the approved RFM Supplement n° 8. Helicopters equipped with float, P/N 23D24409, are limited to 975 kg (2 150 lb) GM and must be placarded to indicate so. This provision excludes operations, yet allows emergency water landings at GM over 975 kg (2 150 lb).

6. Model 280F helicopters are eligible for installation of a cargo hook in accordance with Enstrom drawing 28-22000 for the transportation of external cargo. The helicopter must be operated within the limitations prescribed in the approved RFM Supplement. The maximum external load permitted on the cargo hook is 454 kg (1 000 lb). The Enstrom model 280F is certificated for operation at a GM up to 1 179 kg (2 600 lb) for cargo hook operation.
A logbook entry shall be made when conducting cargo hook operation and additionally when operating between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb) GM. See Section 10, General Note 2, for further limitations when operating between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb) GM.
The following portions of Part 6 of the Civil Air Regulations were considered inappropriate for the intended operation at GM between 1 066 kg (2 350 lb) and 1 179 kg (2 600 lb): CAR 6.100(c), 6.113(b)(c), 6.114, 6.116, and 6.123(b)(3).
This change is FAA approved since 31 December 1980.

7. Model 280F helicopters are eligible for the installation of Snowshoe Kit n° 28-22400 when operated within the prescribed limitations of the approved RFM Supplement.

8. Model 280F helicopters are eligible for installation of an internal auxiliary fuel tank per Kit n° 28-01009. When so equipped, the helicopter must be operated within the prescribed limitations of the approved RFM Supplement.

9. Model 280F helicopters are eligible for installation of Wall-Colomony Muffler P/N ENX-0001 or P/N 28-12577-1 in place of the standard tailpipe. When so equipped, the helicopter must be operated within the prescribed limitations of the approved RFM Supplement. No further modification to the rotorcraft is required.

10. Model 280F helicopters are eligible for increased GM to 1 179 kg (2 600 lb) if the helicopter complies with the requirements of Enstrom Specification Drawing n° 28-100015 at the time of original manufacture or are retrofitted at a later date and logged accordingly. In accordance with Enstrom Service Information Letter 0130, Models eligible for retrofitting are:
all 280F helicopters prior to s/n 1516, except 1506.

* * *

 

**SECTION 7: 280FX**

I. General

| | | |
|---|---|---|
| 1. | Type/ Model/ Variant | |
| | 1.1 Type | Enstrom F-28 |
| | 1.2 Model | 280FX |
| | 1.3 Variants | Variant 1: MTOM 1 179 kg (2 600 lb); Original Configuration<br>Variant 2: MTOM 1 179 kg (2 600 lb); Inflatable Floats (see Note 5) |
| 2. | Airworthiness Category | Small Rotorcraft |
| 3. | Manufacturer | Enstrom Helicopter Corporation<br>2209 22nd Street<br>Menominee, MI 49858, USA |
| 4. | Type Certification Application Date to | FAA: 4 October 1984<br>LBA DE: 9 April 1987 |
| 5. | State of Design Authority | FAA |
| 6. | Type Certificate Date by | FAA: 14 January 1985<br>LBA DE: 15 December 1987 |
| 7. | Type Certificate n° by | FAA: H1CE<br>LBA DE: 3041 |
| 8. | Type Certificate Data Sheet n° by | FAA: H1CE<br>LBA DE: 3041 |
| 9. | EASA Type Certification Date | 28 September 2003,<br>in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 2nd indented bullet. |

II. Certification Basis

| | | |
|---|---|---|
| 1. | Reference Date for determining the applicable requirements | 26 July 1962 |
| 2. | Airworthiness Requirements | As per compliance with Part 6 of the Civil Air Regulation effective 20 December 1956, as amended by 6-1 through 6-5 and included in the original Type Design Standard |
| 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 | Complies with the provisions of Article 6.1 of Regulation 216/2008 without the need to comply with the Standards of ICAO Annex 16, Volume I, by virtue of the date of type certification.<br>See TCDSN EASA.IM.R.122. |
| 9. | Operational Suitability Data (OSD) | See SECTION 11 below. |

 

III. Technical Characteristics and Operational Limitations

| | | |
|---|---|---|
| 1. | Type Design Definition | Enstrom Helicopter Corporation Drawing 28-000004 |
| 2. | Description | Single, turbo-charged piston engine powered, three-seat helicopter with three-bladed, fully articulated main rotor, two-blade tail rotor, skid landing gear.<br>This model 280FX differs from the basic model 280F in that it is equipped with landing gear fairings, a redesigned inlet air scoop, tail rotor driveshaft fairings, a redesigned and relocated horizontal stabiliser equipped with vertical endplates, a cockpit annunciator panel, and a graphic engine monitor.<br>This model is approved for operations at 1 179 kg (2 600 lb). There are four GM/centre of gravity envelopes for this version, each of which corresponds to a different $V_{NE}$/altitude envelope. |
| | 2.1 Additional Description for Variant 2 | This variant of the model 280FX differs from the basic model 280FX in that installation of the items described in Enstrom Drawings 28-17326, 28-20119, and Enstrom Specification Drawing 28-100015 permits operation with floats up to 1 179 kg (2 600 lb) GM. There are three GM/centre of gravity envelopes for this variant, each of which corresponds to a different $V_{NE}$/altitude envelope. |
| 3. | Equipment | The basic required equipment as prescribed in the applicable Airworthiness Regulations (see Certification Basis) must be installed in the helicopter for certification. In addition, the approved RFM is required. |
| 4. | Dimensions | |
| | 4.1 Fuselage | Length: 8.92 m (29 ft) (blade over tail)<br>Overall width: 1.80 m (7 ft 4 in)<br>Height: 2.74 m (9 ft) |
| | 4.2 Main Rotor | Diameter: 9.75 m (32 ft), 3 blades |
| | 4.3 Tail Rotor | Diameter: 1.42 m (4 ft 8 in), 2 blades |
| 5. | Engine | |
| | 5.1 Model | Lycoming Engines<br>1 x Model HIO-360-F1AD<br>with Rajay Model 325E10-2 or Rotomaster (Hartzell Engine Technologies) Model 3BT5EE10J2 turbocharger per FAA STC SE484GL and Bendix (Precision Airmotive LLC) RSA-5AB1 Parts List 2524858-A, -1, -2, -3, -4 or -5 fuel injector. |
| | 5.2 Type Certificate | FAA TC/TCDS n°: 1E10<br>LBA TC/TCDS n°: 4569<br>EASA TC/TCDS n°: EASA.IM.E.032 |
| | 5.3 Limitations | For all operations:<br>Maximum: 3 050 rpm (225 hp)<br>39.0 in Hg manifold pressure<br>Minimum: 2 900 rpm |
| 6. | Fluids (Fuel/ Oil/ Additives) | |
| | 6.1 Fuel | Minimum 100/130 or 100LL grade aviation gasoline |
| | 6.2 Oil | Refer to approved RFM |
| | 6.3 Additives | Refer to approved RFM |

 

7. Fluid capacities

| | | |
|---|---|---|
| 7.1 Fuel | Fuel tank capacity: | 159.0 litres (42 US gal)<br>at +2.46 m (+96.7 in) |
| | Unusable fuel: | 5.44 kg (12.0 lb)<br>at +2.39 m (+94.0 in) |
| 7.2 Oil | Engine: | 9.5 litres (2.2 US gal)<br>at +2.44 m (+96.0 in) |
| | Undrainable oil: | 1.81 kg (4 lb)<br>at +2.44 m (+96.0 in) |
| 7.3 Coolant System Capacity | n/a | |

8. Air Speed Limitations

8.1 Air Speed Limitations for Variant 1

$V_{NE}$ 117 mph (188 km/h) IAS for standard sea level day at or below 1 066 kg (2 350 lb) GM.
See approved RFM for $V_{NE}$ reductions with altitude and GM.

8.2 Air Speed Limitations for Variant 2

$V_{NE}$ 100 mph (161 km/h) IAS for standard sea level day at or below 1 066 kg (2 350 lb) GM.
See approved RFM Supplement n° 2 for $V_{NE}$ reductions with altitude and GM.

9. Rotor Speed Limitations

| | |
|---|---|
| Power on: | |
| Maximum | 351 rpm |
| Minimum | 334 rpm |
| Power off: | |
| Maximum | 385 rpm |
| Minimum | 334 rpm |

10. Maximum Operating Altitude and Temperature

10.1 Altitude

Maximum 12 000 ft DA (3 700 m)
at or below 1 066 kg (2 350 lb) GM.
Variant 1: See approved RFM for altitude reductions with GM.
Variant 2: See approved RFM Supplement n° 2 for altitude reductions with GM.

10.2 Temperature

Not specified

11. Operating Limitations

VFR day/night
Non-icing conditions
No aerobatics
No IFR
Crosswind and downwind: when hovering or landing, adequate flight control can be maintained in winds up to 20 mph (17 kt, 32 km/h)

12. Maximum Mass

1 179 kg (2 600 lb)

13. Centre of Gravity Range

13.1 Longitudinal

Variant 1:
Max. FWD is +2.34 m (+92.0 in) at all GM up to 1 066 kg (2 350 lb) and decreasing linearly to +2.45 m (+96.3 in) at 1 179 kg (2 600 lb).
Max. AFT is +2.54 m (+100.0 in) at all GM up to 907 kg (2 000 lb) and decreasing linearly to +2.49 m (+98.0 in) at 1 179 kg (2 600 lb).
See approved RFM for schedule with GM.
Variant 2:
Max. FWD is +2.34 m (+92.0 in) at all GM up to 1 066 kg (2 350 lb) and decreasing linearly to

+2.45 m (+96.5 in) at 1 179 kg (2 600 lb).
Max. AFT is +2.50 m (+98.5 in) at all GM up to 939 kg (2 070 lb) and decreasing linearly to +2.49 m (+98.0 in) at 1 179 kg (2 600 lb).
See approved RFM Supplement n° 2 for schedule with GM.

| | | |
|---|---|---|
| 13.2 | Lateral | Approved maximum asymmetric moment:<br>+42.6 kgm to -37.4 kgm (+3 700 to -3 250 in·lb) above 909 kg (2 025 lb)<br>See approved RFM for schedule with GM. |
| 14. | Datum | Longitudinal:<br>2.54 m (100.0 in) forward of the centre of the main rotor hub<br>Lateral:<br>Rotorcraft centreline |
| 15. | Levelling Means | Lower longeron of pylon section |
| 16. | Stabiliser setting | Fixed, 3°30' TE up relative to WL |
| 17. | Minimum Flight Crew | 1 pilot, at +1.57 m (+62.0 in) |
| 18. | Maximum Passenger Seating Capacity | 2, at +1.57 m (+62.0 in) |
| 19. | Passenger Emergency Exit | 2, one on each side of the fuselage |
| 20. | Maximum Baggage / Cargo Loads | Baggage compartment:<br>49 kg (108 lb) at +3.43 m (+135.0 in) |
| 21. | Rotor Blade Control Movement | For rigging information, refer to Maintenance Manual. |
| 22. | Auxiliary Power Unit (APU) | n/a |
| 23. | Life-limited Parts | Applicable life limits are published in Section 3 of the Enstrom F-28F/280F Series Maintenance Manual. |

IV. Operating and Service Instructions

1. Flight Manual (See also Section 10, General Note 1.)

- FAA approved RFM, dated 11 January 1985, or later approved revision is required.
- RFM Supplements:
  FAA approved RFM Supplement n° 1, dated 11 January 1991,
  or later approved revision is required; (for Agricultural Kit) see Note 4.
  FAA approved RFM Supplement n° 2, dated 12 July 1985,
  or later approved revision is required; (for Float Landing Gear) see Note 5.
  FAA approved RFM Supplement n° 3, dated 11 January 1985,
  or later approved revision is required; (for External Loads) see Note 6.
  FAA approved RFM Supplement n° 4, dated 11 May 1989,
  or later approved revision is required; (for Snowshoes) see Note 7.
  FAA approved RFM Supplement n° 11, dated 11 January 1985,
  or later approved revision is required; (for Auxiliary Fuel Tank) see Note 8.
  FAA approved RFM Supplement n° 12, dated 16 July 1986,
  or later approved revision is required; (for Muffler Installation) see Note 9.
  FAA approved RFM Supplement n° 28-AC-069, Revision 1, dated 21 March 2017,
  or later approved revision is required, (for Navigation System with MD200-306 CDI) see Note 10.
  FAA approved RFM Supplement n° 28-AC-070, dated 27 July 2015,
  or later approved revision is required, (for Transponder with ADS-B Out) see Note 11.
  FAA approved RFM Supplement n° 28-AC-074, dated 6 December 2017,
  or later approved revision is required, (for NAV/COM Transceiver) see Note 12 and 13.
  FAA approved RFM Supplement n° 28-AC-080, Revision 1 dated 21 May 2019,
  or later approved revision is required, (for GMA 350Hc Audio Panel) see Note 14.
  FAA approved RFM Supplement n° 28-AC-081, dated 28 March 2019,
  or later approved revision is required, (for GTX 345 Transponder) see Note 15.

 

| | | |
|---|---|---|
| 2. | Maintenance Manual | (See also Section 10, General Note 1.)<br>F-28F/280F Series Maintenance Manual, dated 28 June 1985 (or later revision).<br>For Maintenance Manual Supplements refer to V. Notes. |
| 3. | Structural Repair Manual | n/a |
| 4. | Weight and Balance Manual | |

Refer to Section 6 of the approved RFM (see Chapter IV.1.) and take into account all weight and balance data. Current weight and balance report including list of equipment included in certificated empty weight and loading instructions when necessary must be provided for each helicopter at the time of original certification. For piston-engine powered models, the certificated empty weight and corresponding centre of gravity locations must include unusable fuel and undrainable oil (see Chapter III.7).

| | | |
|---|---|---|
| 5. | Illustrated Parts Catalogue | Enstrom Illustrated Parts Catalogue for Helicopter Models: F-28A, 280, F-28C, 280C, F-28F, 280F, 280FX |
| 6. | Service Letters and Service Bulletins | As published by Enstrom Helicopter |

V. Notes

1. Manufacturer's eligible serial numbers for model 280FX:
s/n 2001 and subsequent.

   Except: s/n 2002, 2016, 2041, 2060, 2070, 2080, 2086, 2087, 2101, 2118 and 2145, which are ineligible.

2. All placards required by either the approved RFM, the applicable operating rules, or the Certification Basis must be installed in the helicopter. This is in accordance with 14 CFR 27.1541 through 27.1565. The following placard must be displayed in front of and in clear view of the pilot:
   "This helicopter must be operated in compliance with operating limitations specified in the Approved Rotorcraft Flight Manual."

3. Retirement items and mandatory inspection items are contained in the pertinent model Maintenance Manual. The retirement times of critical parts are listed in Section III.23 (Life-limited parts). These values of retirement times of service life cannot be increased without FAA/EASA approval.

4. Model 280FX helicopters are certified for operation at a GM up to 1 179 kg (2 600 lb) when equipped with Agricultural Kit as specified on Enstrom drawing 28-22620 and installed in accordance with Enstrom Helicopter Corporation Report n° DO-280, Owner & Operator Manual for Wet/Dry Ag Kit 83100. A logbook entry shall be made when the agricultural kit is installed and when it is removed. See Section 10, General Note 2, for further limitations.
   The following portions of Part 6 of the Civil Air Regulations were considered inappropriate for the intended agricultural operations: CAR 6.100(c), 6.113(b) (c), 6.114, 6.116, and 6.123(b) (3).
   The following paragraphs of CAR 6 were demonstrated at near sea level and 7500 feet density altitude conditions only: CAR 6.121(d) and 6.123(b) (4).

5. Model 280FX helicopters are eligible for the installation of inflatable floats, P/N D-24780, in accordance with Enstrom drawing 28-17326. When so equipped, 280FX models may be operated up to 1 179 kg (2 600 lb) GM. Each helicopter so equipped is approved for operations within the limitations prescribed by approved RFM Supplement n° 2.
   This change is FAA approved on 12 July 1985.

6. Model 280FX helicopters are eligible for installation of a cargo hook in accordance with Enstrom drawing 28-22000 for the transportation of external cargo. The helicopter must be operated within the limitations prescribed in the appropriate approved RFM Supplement. The maximum external load permitted on the cargo hook is 454 kg (1 000 lb). The Enstrom model 280FX is certificated for operation at a GM up to 1 179 kg (2 600 lb) for cargo hook operation. A logbook entry shall be made when conducting cargo hook operation.

7. Model 280FX helicopters are eligible for the installation of Snowshoe Kit n° 28-22400 when operated within the prescribed limitations of the approved RFM Supplement.

8. Model 280FX helicopters are eligible for installation of an internal auxiliary fuel tank per Kit n° 28-01009. When so equipped, the helicopter must be operated within the prescribed limitations of the

 

V. Notes

approved RFM Supplement.

9. Model 280FX helicopters are eligible for installation of Wall-Colomony Muffler P/N ENX-0001 or P/N 28-12577-1 in place of the standard tailpipe. When so equipped, the helicopter must be operated within the prescribed limitations of the approved RFM Supplement. No further modification to the rotorcraft is required.
10. Model 280FX helicopters are eligible for installation of the Navigation System with MD200-306 CDI, n° 28-22112 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-069, and maintained in accordance with Enstrom F-28F/280F Series Maintenance Manual Supplement n° 1, latest revision.
11. Model 280FX helicopters are eligible for installation of the Transponder with ADS-B Out, n° 28-22028 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-070, and maintained in accordance with Enstrom F-28F/280F Series Maintenance Manual Supplement n° 1, latest revision.
12. Model 280FX helicopters are eligible for installation of the NAV/COM Transceiver, n° 28-22063 when operated within the prescribed limitations of RFM Supplement n° 28-AC-074, and maintained in accordance with Enstrom F-28F/280FX Series Maintenance Manual Supplement n° 1, latest revision.
13. Model 280FX helicopters are eligible for installation of the Course Deviation Indicator, n° 28-22095 when maintained in accordance with Enstrom F-28F/280F Series Maintenance Manual Supplement n° 1, latest revision.
14. Model 280FX helicopters are eligible for installation of the GMA 350Hc Audio Panel, n° 28-22048 with disabled voice recognition when operated within the prescribed limitations of the RFM Supplement n° 28-AC-080, and maintained in accordance with Enstrom F-28F/280F Series Maintenance Manual Supplement n° 1, latest revision.
15. Model 280FX helicopters are eligible for installation of the GTX 345 Transponder, n° 28-22028 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-081, and maintained in accordance with Enstrom F-28F/280F Series Maintenance Manual Supplement n° 1, latest revision.

* * *

 

**SECTION 8: 480**

I. General

| | | |
|---|---|---|
| 1. | Type/ Model/ Variant | |
| | 1.1 Type | Enstrom 480 |
| | 1.2 Model | 480 |
| | 1.3 Variants | Variant 1: MTOM 1 293 kg (2 850 lb); Original Configuration<br>Variant 2: MTOM 1 293 kg (2 850 lb); Increased RPM and Torque Limits |
| 2. | Airworthiness Category | Small Rotorcraft |
| 3. | Manufacturer | Enstrom Helicopter Corporation<br>2209 22nd Street<br>Menominee, MI 49858, USA |
| 4. | Type Certification Application Date to | FAA: 22 May 1990<br>CAA UK: 27 May 1994 |
| 5. | State of Design Authority | FAA |
| 6. | Type Certificate Date by | FAA: 10 November 1993<br>CAA UK: 10 March 1995 |
| 7. | Type Certificate n° by | FAA: H1CE<br>CAA UK: AAN nº 24630 |
| 8. | Type Certificate Data Sheet n° by | FAA: H1CE<br>CAA UK: AAN nº 24630 |
| 9. | EASA Type Certification Date | 28 September 2003,<br>in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 2nd indented bullet. |

II. Certification Basis

| | | |
|---|---|---|
| 1. | Reference Date for determining the applicable requirements | 17 November 1988 |
| 2. | Airworthiness Requirements | |

FAR Part 27, effective 1 February 1965, as amended by 27-1 through 27-23, effective 3 October 1988; FAR 27.337, 27.351, 27.395, 27.401, 27.501, 27.613, 27.629, 27.663, 27.685, 27.727, 27.783, 27.861, and 27.865(a) as amended by 27-26, effective 5 April 1990; FAR 27.775 as amended by 27-27, effective 22 October 1990; FAR 27.2 as amended by 27-28, effective 16 September 1991.

Note:

Originally certificated to Part 6 of the Civil Air Regulation effective 20 December 1956, as amended by 6-1 through 6-5; Federal Aviation Regulation; FAR Part 27, Amdt. 23, effective 3 October 1988, for the turbine engine installation, induction system, fuel system, lubrication system, and airworthiness limitations; FAR Part 27, Amdt. 26, effective 5 April 1990, for the landing gear; and FAR Part 36, Amdt. 20 (Appendix J), effective 11 September 1992. The original Type Design Data was re-examined and found to comply with FAR 27 on 2 December 1994.

| | | |
|---|---|---|
| 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 | See TCDSN EASA.IM.R.122. |
| 9. | Operational Suitability Data (OSD) | See SECTION 11 below. |

III. Technical Characteristics and Operational Limitations

1. Type Design Definition — Enstrom Helicopter Corporation Drawing 4101000

2. Description — Single, turbine engine powered, five seat helicopter with three-bladed, fully articulated main rotor, two-blade tail rotor, and skid landing gear.

2.1 Additional Description for Variant 2 — The 480 is a derivative of the TH-28 (which is not approved by EASA) having five-place seating, a smaller instrument panel, removable right-seat controls, a footrest for the front right seat, a baggage box, and an optional aft battery location.

2.2 Additional Description for Variant 2 — This variant of the model 480 differs from the basic model 480 in that installation of the items listed in Enstrom Drawing 4230002 permits operation with increased main rotor rpm and torque limits.

3. Equipment — The basic required equipment as prescribed in the applicable Airworthiness Regulations (see Certification Basis) must be installed in the helicopter for certification. In addition, the approved RFM is required.

4. Dimensions

4.1 Fuselage — Length: 9.20 m (30 ft 2 in) (blade over tail)
Overall width: 8.60 m (28 ft)
Height: 3.00 m (9 ft 8 in)

4.2 Main Rotor — Diameter: 9.75 m (32 ft), 3 blades

4.3 Tail Rotor — Diameter: 1.50 m (5 ft), 2 blades

5. Engine

5.1 Model — Rolls-Royce Corporation (former: Allison)
1 x Model 250-C20W

5.2 Type Certificate — FAA TC/TCDS n°: E4CE
LBA TC/TCDS n°: 7007
EASA TC/TCDS n°: EASA.IM.E.052

5.3 Limitations

5.3.1 Limitations Variant 1

| | TQ pressure [psi (hp)] | Gas generator speed [rpm (%)] | Output shaft speed [rpm (%)] | Turbine outlet temperature [°C] |
|---|---|---|---|---|
| TKOF (5 min) | 67 (285) | 53 519 (105) | 6 196 (103) | 810 |
| MC | 60 (256) | | | 737 |

5.3.2 Limitations Variant 2

| | TQ pressure [psi (hp)] | Gas generator speed [rpm (%)] | Output shaft speed [rpm (%)] | Turbine outlet temperature [°C] |
|---|---|---|---|---|
| TKOF (5 min) | 68 (289) | 53 519 (105) | 6 196 (103) | 810 |
| MC | 63 (268) | | | 737 |

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel — Aviation Turbine Fuels
ASTM D1655 Jet A or A-1;
or ASTM D6615 Jet B;
or MIL-T-5624, Grade JP-4 or JP-5;

 

| | | |
|---|---|---|
| | | or MIL-DTL-83133, Grade JP-8. |
| | 6.2 Oil | Refer to approved RFM |
| | 6.3 Additives | Refer to approved RFM |
| 7. | Fluid capacities | |
| | 7.1 Fuel | Fuel tank capacity: 341 litres (90 US gal) at +3.67 m (+144.6 in)<br>Unusable fuel: See Chapter IV.4. |
| | 7.2 Oil | Engine: 5.7 litres (12 pts) at +3.89 m (+153.0 in) |
| | 7.3 Coolant System Capacity | n/a |
| 8. | Air Speed Limitations | |
| | 8.1 Air Speed Limitations for Variant 1 | $V_{NE}$ 140 mph (122 knots, 225 km/h) IAS for standard sea level day at maximum take-off GM.<br>See approved RFM for $V_{NE}$ reductions with altitude. |
| | 8.2 Air Speed Limitations for Variant 2 | $V_{NE}$ 144 mph (125 knots, 232 km/h) IAS for standard sea level day at maximum take-off GM.<br>See approved RFM Supplement n° 6 for $V_{NE}$ reductions with altitude. |

9. Rotor Speed Limitations

| Power on: | Variant 1 | Variant 2 |
|---|---|---|
| Maximum | 365 rpm | 372 rpm |
| Minimum | 357 rpm | 365 rpm |
| Power off: | Variant 1 | Variant 2 |
| Maximum | 385 rpm | 385 rpm |
| Minimum | 334 rpm | 334 rpm |

10. Maximum Operating Altitude and Temperature

| | |
|---|---|
| 10.1 Altitude | Maximum 13 000 ft DA (4 000 m) at or below 1 066 kg (2 350 lb) GM.<br>For reduction in TKOF and LDG altitude with GM, see approved RFM. |
| 10.2 Temperature | Maximum operational ambient temperature is 45.5°C (114°F).<br>Minimum operational ambient temperature is -32°C (-25°F). |

11. Operating Limitations

VFR day/night
Non-icing conditions
Appropriate instruments and equipment required by the airworthiness and/or operating rules to be installed and approved and are in operable condition.

12. Maximum Mass

1 293 kg (2 850 lb)

13. Centre of Gravity Range

13.1 Longitudinal

Max. FWD is +3.40 m (+134.0 in) at all GW up to 998 kg (2 200 lb) decreasing linearly to +3.46 m (+136.35 in) at 1 293 kg (2 850 lb).
Max. AFT is +3.63 m (+143.0 in) at all GW up to 1 134 kg (2 500 lb) decreasing linearly to +3.59 m (+141.5 in) at 1 293 kg (2 850 lb).

13.2 Lateral

Maximum asymmetric moment:
±86.4 kgm (±7 500 in·lb)

14. Datum

Longitudinal:
3.64 m (143.3 in) forward of main rotor hub centreline

15. Levelling Means

Lower longeron of pylon section

| | | |
|---|---|---|
| 16. | Stabiliser setting | Fixed, 1.5° TE down relative to WL |
| 17. | Minimum Flight Crew | 1 pilot, at +2.52 m (+99.1 in) station |
| 18. | Maximum Passenger Seating Capacity | 1 at +2.26 m (+89.0 in), and 3 at +2.87 m (+113.1 in); or,<br>1 at +2.52 m (+99.1 in), and 1 at +2.87 m (+113.1 in). |
| 19. | Passenger Emergency Exit | 2, one on each side of the fuselage |
| 20. | Maximum Baggage / Cargo Loads | Baggage Box:<br>68 kg (150 lb) at +4.88 m (+192.0 in) |
| 21. | Rotor Blade Control Movement | For rigging information, refer to Maintenance Manual. |
| 22. | Auxiliary Power Unit (APU) | n/a |
| 23. | Life-limited Parts | Applicable life limits are published in Enstrom TH-28/480 Series Maintenance Manual, Section 3. Further life limits which are applicable under European legislation are published in EASA AD n° 2006-0290R1 (or later revision). See EASA AD publication tool for the current additional life limits for this model. |

IV. Operating and Service Instructions

1. Flight Manual (See also Section 10, General Note 1.)

- FAA approved RFM, dated 7 June 1993, or later approved revision is required.
- RFM Supplements:
  FAA approved RFM Supplement n° 1, dated 1 June 1994, or later approved revision is required; (for Cargo Hook) see Note 5.
  FAA approved RFM Supplement n° 2, dated 1 June 1994, or later approved revision is required; (for Snowshoes) see Note 6.
  FAA approved RFM Supplement n° 3, dated 1 June 1994, or later approved revision is required; (for External Fuel Filter) see Note 7.
  FAA approved RFM Supplement n° 4, dated 1 June 1994, or later approved revision is required; (for Baggage Box Extension) see Note 8.
  FAA approved RFM Supplement n° 5, dated 12 August 1996, or later approved revision is required; (for Camera Door) see Note 9.
  FAA approved RFM Supplement n° 6, dated 12 August 1996, or later approved revision is required; (for Increased Rotor Speeds and Torque Limits) see Note 10.
  FAA approved RFM Supplement n° 7, dated 27 November 1996, or later approved revision is required; (for Air Conditioning) see Note 11.
  FAA approved RFM Supplement n° 8, dated 23 January 1998, or later approved revision is required; (for Pop-out Floats) see Note 12.
  FAA approved RFM Supplement n° 28-AC-042, dated 24 February 2011, or later approved revision is required; (for Powerline Detection System) see Note 14.
  FAA approved RFM Supplement n° 28-AC-059, dated 14 May 2014, or later approved revision is required; (for Pulse Landing Light) see Note 15.
  FAA approved RFM Supplement n° 28-AC-055, Revision 1, dated 21 March 2017, or later approved revision is required; (for Navigation System) see Note 16.

2. Maintenance Manual (See also Section 10, General Note 1.)
   TH-28/480 Series Maintenance Manual dated 9 February 2001 (or later revision).
   For Maintenance Manual Supplements refer to V. Notes.

3. Structural Repair Manual n/a

4. Weight and Balance Manual

Refer to Section 6 of the approved RFM (see Chapter IV.1.) and take into account all weight and balance data. Current weight and balance report including list of equipment included in certificated empty weight and loading instructions when necessary must be provided for each helicopter at the time of original certification.

 

For turbine-engine powered models, certificated empty weight and corresponding centre of gravity locations must include unusable fuel as tabulated below.

| Model | Fuel Bladder P/N | Unusable Fuel |
|---|---|---|
| 480 | 4122009-1, -2, -4 | 0.91 kg at +3.64 m (2.0 lb at +143.4 in) |
| 480 | 4122052-1, -2 | 5.17 kg at +3.64 m (11.4 lb at +143.4 in) |

5. Illustrated Parts Catalogue — Enstrom Illustrated Parts Catalogue for Helicopter Models: TH-28/480 Series
6. Service Letters and Service Bulletins — As published by Enstrom Helicopter

V. Notes

1. Manufacturer's eligible serial numbers for model 480:
   Variant 1: s/n 5002 through 5016.
   Except: 5005, which is ineligible;
   Variant 2: s/n 5002 through 5042, and 5044.
   Except: 5005, 5021, 5023, 5028, and 5035, which are ineligible
2. All placards required by either the approved RFM, the applicable operating rules, or the Certification Basis must be installed in the helicopter. This is in accordance with 14 CFR 27.1541 through 27.1565. The following placard must be displayed in front of and in clear view of the pilot:
   "This helicopter must be operated in compliance with operating limitations specified in the Approved Rotorcraft Flight Manual."
3. Retirement items and mandatory inspection items are contained in the pertinent model Maintenance Manual. The retirement times of critical parts are listed in Section III.23 (Life-limited parts). These values of retirement times of service life cannot be increased without FAA/EASA approval.
4. Model 480, s/n 5001 was certificated 7 June 1993, with 4-place seating. It is eligible for 5-place seating when retrofitted in conformance with Enstrom drawing 4119775 "Aft Bench Seat Installation", and 4192034 "Battery Installation".
5. Model 480 helicopters are eligible for installation of Cargo Hook Kit n° 4220024. When so equipped, the 480 must be operated within the prescribed limitations of approved RFM Supplement n° 1.
6. Model 480 helicopters are eligible for installation of Snowshoe Kit n° 4220016 when operated within the prescribed limitations of approved RFM Supplement n° 2.
7. Model 480 helicopters are eligible for installation of External Fuel Filter Kit n° 4220035 when operated within the prescribed limitations of approved RFM Supplement n° 3.
8. Model 480 helicopters are eligible for installation of Baggage Box Extension Kit n° 4220029 when operated within the prescribed limitations of approved RFM Supplement n° 4.
9. Model 480 helicopters are eligible for installation of Camera Door Kit n° 4220079 when operated within the prescribed limitations of approved RFM Supplement n° 5.
10. Model 480 helicopters are eligible for installation of Increased Rotor Speed Kit n° 4230002 when operated within the prescribed limitations of approved RFM Supplement n° 6. This kit also requires oil cooling system installation, P/N 4129100-3, and installation of the ring gear carrier, P/N 28-13106-6, in the main rotor transmission.
11. Model 480 helicopters are eligible for installation of Air Conditioning System Kit n° 4220176 when operated within the prescribed limitations of approved RFM Supplement n° 7; and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 1.
12. Model 480 helicopters are eligible for installation of Pop-Out Floats Kit n° 4220091 when operated within the prescribed limitations of approved RFM Supplements n° 8; and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 2.
13. Model 480, s/n 5014, 5039 through 5042 and 5044, are eligible for conversion to Model 480B when equipped in accordance with Enstrom 480B Conversion Kit n° 4230026.
14. Model 480 helicopters are eligible for installation of Powerline Detection System, n°4220576 when

V. Notes

operated within the prescribed limitations of approved RFM Supplement n° 28-AC-042 and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 5, latest revision.

15. Model 480 helicopters are eligible for installation of the Pulse Landing Light, n° 4199005-111 when operated within the prescribed limitations of RFM Supplement n° 28-AC-059, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual, latest revision.

16. Model 480 helicopters are eligible for installation of the Navigation System, n° 4220534/4220535 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-055, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 5, latest revision.

* * *

 

**SECTION 9: 480B**

I. General

| | | |
|---|---|---|
| 1. | Type/ Model/ Variant | |
| | 1.1 Type | Enstrom 480 |
| | 1.2 Model | 480B |
| | 1.3 Variants | --- |
| 2. | Airworthiness Category | Small Rotorcraft |
| 3. | Manufacturer | Enstrom Helicopter Corporation<br>2209 22nd Street<br>Menominee, MI 49858, USA |
| 4. | Type Certification Application Date to | FAA: 20 October 1999<br>CAA UK: 27 July 2001 |
| 5. | State of Design Authority | FAA |
| 6. | Type Certificate Date by | FAA: 8 February 2001<br>CAA UK: 1 August 2003 |
| 7. | Type Certificate n° by | FAA: H1CE<br>CAA UK: AAN n° 28027 |
| 8. | Type Certificate Data Sheet n° by | FAA: H1CE<br>CAA UK: AAN n° 28027 |
| 9. | EASA Type Certification Date | 28 September 2003,<br>in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 2nd indented bullet. |

II. Certification Basis

| | | |
|---|---|---|
| 1. | Reference Date for determining the applicable requirements | 17 November 1988 |
| 2. | Airworthiness Requirements | |

FAR Part 27, effective 1 February 1965, as amended by 27-1 through 27-23, effective 3 October 1988; FAR 27.337, 27.351, 27.395, 27.401, 27.501, 27.613, 27.629, 27.663, 27.685, 27.727, 27.783, 27.861, and 27.865(a) as amended by 27-26, effective 5 April 1990; FAR 27.775 as amended by 27-27, effective 22 October 1990; FAR 27.2 as amended by 27-28, effective 16 September 1991.

Note:

Originally certificated to Part 6 of the Civil Air Regulation effective 20 December 1956, as amended by 6-1 through 6-5; FAR Part 27, Amdt. 23, effective 3 October 1988, for the turbine engine installation, induction system, fuel system, lubrication system, and airworthiness limitations; FAR Part 27, Amdt. 26, effective 5 April 1990, for the landing gear; and FAR Part 36, Amdt. 20 (Appendix J), effective 11 September 1992. The original Type Design Data was re-examined and found to comply with FAR 27 on 2 December 1994.

For all helicopters in which the Garmin G1000H (EASA major change approval 10061805, and FAA project AT09530CH-R) is installed:

CS 27.1 (a), CS 27.307 (a), CS 27.1305 (v) and CS 27.1317 (b) and (c) of CS 27 Amdt. 4, dated 30 November 2016.

| | | |
|---|---|---|
| 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.IM.R.122. |
| 8.2 Emission Requirements | ICAO Annex 16, Vol. II, Chapter 2 |

9. Operational Suitability Data (OSD) — See SECTION 11 below.

III. Technical Characteristics and Operational Limitations

1. Type Design Definition — Enstrom Helicopter Corporation Drawing 4101000

2. Description — Single, turbine engine, five seat helicopter with three-bladed, fully articulated main rotor, two-blade tail rotor, and skid landing gear with removable ground handling wheels.
The 480B is a derivative of the 480 having increased GM and power limits.

3. Equipment — The basic required equipment as prescribed in the applicable Airworthiness Regulations (see Certification Basis) must be installed in the helicopter for certification. In addition, the approved RFM is required.

4. Dimensions

| | | |
|---|---|---|
| 4.1 Fuselage | Length: | 9.20 m (30 ft 2 in) (blade over tail) |
| | Overall width: | 8.60 m (28 ft) |
| | Height: | 3.00 m (9 ft 8 in) |
| 4.2 Main Rotor | Diameter: | 9.75 m (32 ft), 3 blades |
| 4.3 Tail Rotor | Diameter: | 1.50 m (5 ft), 2 blades |

5. Engine

5.1 Model — Rolls-Royce Corporation (former: Allison)
1 x Model 250-C20W

5.2 Type Certificate

| | |
|---|---|
| FAA TC/TCDS n°: | E4CE |
| CAA UK TC/TCDS n°: | unknown |
| EASA TC/TCDS n°: | EASA.IM.E.052 |

5.3 Limitations

| | TQ pressure [psi (hp)] | Generator speed [rpm (%)] | Output shaft speed [rpm (%)] | Turbine outlet temperature [°C] |
|---|---|---|---|---|
| TKOF (5 min) | 72 (305) | 53 519 (105) | 6 196 (103) | 810 |
| MC | 65 (276) | | | 737 |

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel — Aviation Turbine Fuels
ASTM D1655 Jet A or A-1;
or ASTM D6615 Jet B;
or MIL-T-5624, Grade JP-4 or JP-5;
or MIL-DTL-83133, Grade JP-8.

6.2 Oil — Refer to approved RFM.

6.3 Additives — Refer to approved RFM.

7. Fluid capacities

| | | |
|---|---|---|
| 7.1 Fuel | Fuel tank capacity: | 340.7 litres (90 US gal) at +3.67 m (+144.6 in) |
| | Unusable fuel: | See Chapter IV.4. |
| 7.2 Oil | Engine: | 5.7 litres (12 pts) |

 

| | | |
|---|---|---|
| | | at +3.89 m (+153.0 in) |
| | 7.3 Coolant System Capacity | n/a |
| 8. | Air Speed Limitations | $V_{NE}$ 144 mph (124 knots, 232 km/h) IAS for standard sea level day at maximum TKOF GM.<br>See approved RFM for $V_{NE}$ reductions with altitude. |
| 9. | Rotor Speed Limitations | Power on:<br>Maximum 372 rpm<br>Minimum 365 rpm<br>Power off:<br>Maximum 385 rpm<br>Minimum 334 rpm |
| 10. | Maximum Operating Altitude and Temperature | |
| | 10.1 Altitude | 10 000 ft DA (3 000 m)<br>at 1 361 kg (3 000 lb) GM.<br>13 000 ft DA (4 000 m)<br>at and below 1 293 kg (2 850 lb) GM.<br>For reduction in TKOF and LDG altitude with GM, see approved RFM. |
| | 10.2 Temperature | Maximum operational ambient temperature is 41°C (106°F).<br>Note: For higher temperatures and dependencies on altitude, s/n and equipment refer to approved RFM.<br>Minimum operational ambient temperature is -32°C (-25°F). |
| 11. | Operating Limitations | VFR day/night<br>Non-icing conditions<br>Appropriate instruments and equipment required by the airworthiness and/or operating rules to be installed and approved and are in operable condition. |
| 12. | Maximum Mass | 1 361 kg (3 000 lb) |
| 13. | Centre of Gravity Range | |
| | 13.1 Longitudinal | Max. FWD is +3.40 m (+134.0 in) at all GM up to 998 kg (2 200 lb) decreasing linearly to +3.48 m (+136.9 in) at 1 361 kg (3 000 lb).<br>Max. AFT is +3.63 m (+143.0 in) at all GM up to 1 134 kg (2 500 lb) decreasing linearly to +3.58 m (+140.95 in) at 1 361 kg (3 000 lb) |
| | 13.2 Lateral | Maximum asymmetric moment:<br>±86.4 kgm (±7 500 in·lb) |
| 14. | Datum | Longitudinal:<br>3.64 m (143.3 in) forward of main rotor hub centreline |
| 15. | Levelling Means | Lower longeron of pylon section |
| 16. | Stabiliser setting | Fixed, 1.5° TE down relative to WL |
| 17. | Minimum Flight Crew | 1 pilot, at +2.52 m (+99.1 in) station |
| 18. | Maximum Passenger Seating Capacity | 1 at +2.26 m (+89.0 in), and 3 at +2.87 m (+113.1 in); or,<br>1 at +2.52 m (+99.1 in), and 1 at +2.87 m (+113.1 in); or,<br>1 at +2.57 m (+101.0 in), and 2 at +2.87 m (+113,1 in), see Note 14. |
| 19. | Passenger Emergency Exit | 2, one on each side of the fuselage |
| 20. | Maximum Baggage / Cargo Loads | Baggage Box:<br>68 kg (150 lb) at +4.88 m (+192.0 in) |

 

| | | |
|---|---|---|
| 21. | Rotor Blade Control Movement | For rigging information, refer to Maintenance Manual. |
| 22. | Auxiliary Power Unit (APU) | n/a |
| 23. | Life-limited Parts | Applicable life limits and mandatory inspection items are published in Enstrom TH-28/480 Series Maintenance Manual, Section 3.<br>Further life limits which are applicable under European legislation are published in EASA AD n° 2006-0290R1 (or later revision).<br>See EASA AD publication tool for the current additional life limits for this model. |

IV. Operating and Service Instructions

1. Flight Manual (See also Section 10, General Note 1.)

- FAA approved RFM, dated 9 February 2001, or later approved revision is required.
- RFM Supplements:
  FAA approved RFM Supplement n° 1, dated 9 February 2001, or later approved revision is required; (for Cargo Hook) see Note 4.
  FAA approved RFM Supplement n° 2, dated 9 February 2001, or later approved revision is required; (for Snowshoes) see Note 5.
  FAA approved RFM Supplement n° 3, dated 9 February 2001, or later approved revision is required; (for External Fuel Filter) see Note 6.
  FAA approved RFM Supplement n° 4, dated 9 February 2001, or later approved revision is required; (for Baggage Box Extension) see Note 7.
  FAA approved RFM Supplement n° 5, dated 9 February 2001, or later approved revision is required; (for Camera Door) see Note 8.
  FAA approved RFM Supplement n° 6, dated 5 September 2003, or later approved revision is required; (for Pop-out Floats) see Note 10.
  FAA approved RFM Supplement n° 7, dated 9 September 2004, or later approved revision is required; (for Air Conditioning) see Note 9.
  FAA approved RFM Supplement n° 8, dated 6 June 2006, or later approved revision is required; (for Camera Mount) see Note 12.
  FAA approved RFM Supplement n° 9, dated 6 June 2006, or later approved revision is required; (for Searchlight) see Note 13.
  FAA approved RFM Supplement n° 28-AC-036, dated 21 October 2009, or later approved revision is required; (for 2+2 Seating Configuration) see Note 14.
  FAA approved RFM Supplement n° 28-AC-042, dated 24 February 2011, or later approved revision is required; (for Powerline Detection System) see Note 15.
  FAA approved RFM Supplement n° 28-AC-059, dated 14 May 2014, or later approved revision is required; (for Pulse Landing Light) see Note 16.
  FAA approved RFM Supplement n° 28-AC-055, Revision 1, dated 21 March 2017, or later approved revision is required; (for Navigation System) see Note 17.
  FAA approved RFM Supplement n° 28-AC-061, Revision 1, dated 21 March 2017, or later approved revision is required; (for Traffic Advisory System) see Note 18.
  FAA approved RFM Supplement n° 28-AC-062, dated 5 June 2014, or later approved revision is required; (for XM WX Satellite Weather/Radio Receiver) see Note 19.
  FAA approved RFM Supplement n° 28-AC-063, dated 12 August 2014, or later approved revision is required; (for NAV/COM Transceiver) see Note 20.
  FAA approved RFM Supplement n° 28-AC-064, Revision 1, dated 21 March 2017, or later approved revision is required; (for Navigation System) see Note 21.
  FAA approved RFM Supplement n° 28-AC-065, dated 7 August 2014, or later approved revision is required; (for Mode A/C Transponder) see Note 22.
  FAA approved RFM Supplement n° 28-AC-068, Revision 1, dated 21 March 2017, or later approved revision is required; (for GPS/NAV/COM (NAV disabled)) see Note 23.
  FAA approved RFM Supplement n° 28-AC-071, dated 20 October 2015, or later approved revision is

required; (for Radar Altimeter) see Note 24.
FAA approved RFM EASA Supplement n° 28-AC-072, dated 2 May 2017, or later approved revision is required; (for Integrated Flight Deck) see Note 25.
FAA approved RFM Supplement n° 28-AC-073, dated 3 May 2017, or later approved revision is required; (for Audio Panel) see Note 26.
FAA approved RFM Supplement n° 28-AC-067, dated 23 March 2018, or later approved revision is required; (for Vision 1000) see Note 27.
FAA approved RFM Supplement n° 28-AC-075, dated 22 March 2018, or later approved revision is required; (for Integrated Flight Deck, Configuration P/N 4220650-3) see Note 28.
FAA approved RFM Supplement n° 28-AC-076, Revision 1, dated 21 May 2019, or later approved revision is required, (for GMA 350Hc Audio Panel) see Note 29.
FAA approved RFM Supplement n° 28-AC-078, dated 19. December 2018, or later approved revision is required, (for GTX 345 Transponder) see Note 30.
FAA approved RFM Supplement n° 28-AC-079, dated 19. December 2018, or later approved revision is required, (for MD200 Series CDI) see Note 31.

2. Maintenance Manual — (See also Section 10, General Note 1.)
TH-28/480 Series Maintenance Manual dated 9 February 2001 (or later revision).
For Maintenance Manual Supplements refer to V. Notes.

3. Structural Repair Manual — n/a

4. Weight and Balance Manual

Refer to Chapter 6 of the approved RFM (see Chapter IV.1.) and take into account all weight and balance data. Current weight and balance report including list of equipment included in certificated empty weight and loading instructions when necessary must be provided for each helicopter at the time of original certification. For turbine-engine powered models, certificated empty weight and corresponding centre of gravity locations must include unusable fuel as tabulated below.

| Model | Fuel Bladder Part Number | Unusable Fuel |
|---|---|---|
| 480B | 4122052-1, -2 | 5.17 kg at +3.64 m (11.4 lb at +143.4 in) |

5. Illustrated Parts Catalogue — Enstrom Illustrated Parts Catalogue for Helicopter Models: TH-28/480 Series

6. Service Letters and Service Bulletins — As published by Enstrom Helicopter

V. Notes

1. Manufacturer's eligible serial numbers for model 480B:
Enstrom Helicopter Corporation production approval: s/n 5043, 5045 and subsequent.
Except: 5093, 5102, 5110, 5122, 5191, 5199, and 5205, which are ineligible.

2. All placards required by either the approved RFM, the applicable operating rules, or the Certification Basis must be installed in the helicopter. This is in accordance with 14 CFR 27.1541 through 27.1565. The following placard must be displayed in front of and in clear view of the pilot:
"This helicopter must be operated in compliance with operating limitations specified in the Approved Rotorcraft Flight Manual."

3. Retirement items and mandatory inspection items are contained in the pertinent model Maintenance Manual. The retirement times of critical parts are listed in Section III.23 (Life-limited parts). These values of retirement times of service life cannot be increased without FAA/EASA approval.

4. Model 480B helicopters are eligible for installation of Cargo Hook Kit n° 4220024. When so equipped, the 480B must be operated within the prescribed limitations of approved RFM Supplement n° 1.

5. Model 480B helicopters are eligible for installation of Snowshoe Kit n° 4220016 when operated within the prescribed limitations of approved RFM Supplement n° 2.

6. Model 480B helicopters are eligible for installation of External Fuel Filter Kit n° 4220035 when operated within the prescribed limitations of approved RFM Supplement n° 3.

7. Model 480B helicopters are eligible for installation of Baggage Box Extension Kit n° 4220029 when operated within the prescribed limitations of approved RFM Supplement n° 4.
8. Model 480B helicopters are eligible for installation of Camera Door Kit n° 4220079 when operated within the prescribed limitations of approved RFM Supplement n° 5.
9. Model 480B helicopters are eligible for installation of Air Conditioning System Kit n° 4220176 when operated within the prescribed limitations of approved RFM Supplement n° 7; and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 1.
10. Model 480B helicopters are eligible for installation of Pop-Out Floats Kit n° 4220091 when operated within the prescribed limitations of approved RFM Supplement n° 6; and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 2.
11. Model 480, s/n 5039 through 5044, are eligible for conversion to Model 480B when equipped in accordance with Enstrom 480B Conversion Kit n° 4230026.
12. Model 480B helicopters are eligible for installation of Nose Positioned Camera Mount Kit n° 4220180-5 when operated within the prescribed limitations of approved RFM Supplement n° 8.
13. Model 480B helicopters are eligible for installation of Searchlight Kit n° 4220056-1 or -3 when operated within the prescribed limitations of approved RFM Supplement n° 9.
14. Model 480B helicopters are eligible for installation of 2+2 Seating Configuration, n° 4230042 when operated within the prescribed limitations of approved RFM Supplement n° 28-AC-036.
15. Model 480B helicopters are eligible for installation of Powerline Detection System, n°4220576 when operated within the prescribed limitations of approved RFM Supplement n° 28-AC-042 and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 5, latest revision.
16. Model 480B helicopters are eligible for installation of the Pulse Landing Light, n° 4199005-111 when operated within the prescribed limitations of RFM Supplement n° 28-AC-059, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual, latest revision.
17. Model 480B helicopters are eligible for installation of the Navigation System, n° 4220534/4220535 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-055, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 5, latest revision.
18. Model 480B helicopters are eligible for installation of the 800 Traffic Advisory System, n° 4220656 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-061, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 8, latest revision.
19. Model 480B helicopters are eligible for installation of the XM WX Satellite Weather/ Radio Receiver, n° 4220660 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-062, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 8, latest revision.
20. Model 480B helicopters are eligible for installation of the NAV/COM Transceiver, n° 4220638 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-063, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 5, latest revision.
21. Model 480B helicopters are eligible for installation of the Navigation System, n° 4220639 and n° 4220644 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-064, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 5, latest revision.
22. Model 480B helicopters are eligible for installation of the Mode A/C Transponder, n° 4220512 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-065, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 5, latest revision.
23. Model 480B helicopters are eligible for installation of the GPS/NAV/COM (NAV Disabled), n° 4220639 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-068, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 5, latest revision.
24. Model 480B helicopters are eligible for installation of the Radar Altimeter, n° 4220517 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-071, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 5, latest revision.

 

25. Model 480B helicopters are eligible for installation of the Integrated Flight Deck, n° 4220650 when operated within the prescribed limitations of RFM EASA Supplement n° 28-AC-072, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 8, latest revision. Refer to SIL T-068, latest revision, for EASA specific requirements.
26. Model 480B helicopters are eligible for installation of the Audio Panel, n° 4220672 when operated within the prescribed limitations of RFM EASA Supplement n° 28-AC-073, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 5, latest revision. Refer to SIL T-069, latest revision, for EASA specific requirements.
27. Model 480B helicopters are eligible for installation of the Vision 1000, n° 4220641 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-067, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 5, latest revision.
28. Model 480B helicopters are eligible for installation of the Integrated Flight Deck, Configuration P/N 4220650-3, Standby Attitude Module, n° 4220677, and DME, n° 4220686 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-075, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 8, latest revision. Refer to SIL T-068, latest revision, for EASA specific requirements.
29. Model 480B helicopters are eligible for installation of the GMA 350Hc Audio Panel, n° 4220672 with disabled voice recognition when operated within the prescribed limitations of the RFM Supplement n° 28-AC-076, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 5, latest revision.
30. Model 480B helicopters are eligible for installation of the GTX 345 Transponder, n° 4220645 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-078, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 5, latest revision
31. Model 480B helicopters are eligible for installation of the MD200 Series CDI, n° 4220574 when operated within the prescribed limitations of the RFM Supplement n° 28-AC-079, and maintained in accordance with Enstrom TH-28/480 Series Maintenance Manual Supplement n° 5, latest revision.

* * *

 

**SECTION 10: NOTES (PERTINENT TO ALL MODELS)**

1. After 28 September 2003, RFM, RFM Supplements, and Airworthiness Limitation Sections are approved manuals if they have been approved by EASA, or by the FAA on behalf of EASA.
   Before 28 September 2003, RFM, RFM Supplements, and Airworthiness Limitation Sections are approved manuals if they have been approved by any National Aviation Authority to whom the European legislation grants grandfather rights in accordance with Article 3 of the Regulation (EU) n° 748/2008.
   Between 28 September 2003 and 1 December 2006, RFM, RFM Supplements and Airworthiness Limitation Sections are approved manuals if they have been approved by FAA and used for Swiss helicopters of the models F-28A, F-28C, 280C, 280F, 280FX and 480.

2. Limitations according to the transfer of the "Restricted Category" aircraft into the European Law System:
   - Only persons necessary for the current operational task are allowed to be on board.
   - Flights over cities or crowded areas are forbidden except for take-off and landing, or with special permit of the authority responsible for operational permits.
   - When the aircraft is equipped with the Agrinautics Agricultural Kit as specified on Enstrom drawing 28-22620, it shall not be operated for public transport.

3. The models described in SECTION 1 through 9 were first approved by Member States of the European Union and/or contract partners of the European legislation in the field of civil aviation. During these approval processes, some special national requirements were defined. These requirements differ between the nations. They are not mandatory anymore for registration, however they remain "approved".
   The following documents define such requirements. This list is not exhaustive.
   Enstrom Service Information Letter n° 0040
   Enstrom Service Information Letter n° 0044
   Enstrom Service Information Letter n° 0065
   Enstrom Service Information Letter n° 0066
   Enstrom Service Information Letter n° 0070
   Enstrom Service Information Letter n° 0134
   Enstrom Service Information Letter n° 0135
   The model F-28A-D is the designation of the F-28A helicopters into which the Kit n° 230 is implemented. Kit n° 230 includes all necessary changes which were needed to correspond with the German type validation of the F-28A.
   The model 280-D is the designation of the 280 helicopters which are converted in accordance with Enstrom Service Letter n° 0044. After this conversion these helicopters correspond with the German type design of the Enstrom 280.

4. In SECTION 1 through 9, in chapter I, the first known validation in a European country is mentioned. Further European validations are listed below. This list is not exhaustive.

| Model | Approving Authority | NAA Reference | Application Date | Certification Date | Noise Reference |
|---|---|---|---|---|---|
| F-28A | LBA, DE | TC/TCDS n° 3041 | 25 Oct 1971 | 17 Jan 1973 | none |
| | CAA UK | AAN n° 13490 | 8 Apr 1974 | 11 Jan 1974 | none |
| | DGAC, FR | TC/TCDS n° IM 84 | unknown | unknown | unknown |
| | FOCA, CH | unknown | unknown | unknown | unknown |
| | Swedish Transport Agency, SE | unknown | unknown | unknown | unknown |
| 280 | LBA, DE | TC/TCDS n° 3041 | 3 Apr 1975 | 3 Feb 1976 | none |
| | CAA UK | AAN n° 14333 | 24 Jul 1975 | 11 Sep 1975 | none |
| F-28C | LBA, DE | TC/TCDS n° 3041 | 26 Mar 1976 | 23 Jun 1977 | none |
| | CAA UK | AAN n° 16149 | 4 Jan 1978 | 8 Jun 1978 | none |
| | FOCA, CH | unknown | unknown | unknown | unknown |
| | Swedish Transport | TAC n° 16/78 | unknown | 8 Jun 1978 | unknown |

| Model | Approving Authority | NAA Reference | Application Date | Certification Date | Noise Reference |
|---|---|---|---|---|---|
| | Agency, SE | | | | |
| 280C | LBA, DE | TC/TCDS n° 3041 | 26 Mar 1976 | 23 Jun 1977 | none |
| | CAA UK | AAN n° 14738 | 7 Jun 1976 | 2 Dec 1977 | none |
| | DGAC, FR | TC/TCDS n° IM 84 | unknown | unknown | unknown |
| | FOCA, CH | unknown | unknown | unknown | unknown |
| | Swedish Transport Agency, SE | TAC n° 24/77 | unknown | 19 Jul 1977 | unknown |
| F-28F | LBA, DE | TC/TCDS n° 3041 | 9 Apr 1987 | 15 Dec 1987 | Lärmschutzforderung für Luftfahrzeuge (LSL), Kap. VIII, 1 Aug 1985 |
| | CAA UK | AAN n° 21672 | 7 Mar 1989 | 28 Apr 1989 | unknown |
| | Swedish Transport Agency, SE | TAC n° 12/85 | unknown | 13 June 1985 | unknown |
| | ENAC, IT | TC/TCDS n° A 294 | 21 Sep 1988 | 19 Feb 1990 | unknown |
| 280F | LBA, DE | TC/TCDS n° 3041 | 12 May 1982 | 25 Sept 1984 | Lärmschutzforderung für Luftfahrzeuge (LSL), Kap. VIII, 1 Aug 1985 |
| | CAA UK | unknown | unknown | unknown | unknown |
| | FOCA, CH | unknown | unknown | unknown | unknown |
| 280FX | LBA, DE | TC/TCDS n° 3041 | 9 April 1987 | 15 Dec 1987 | Lärmschutzforderung für Luftfahrzeuge (LSL), Kap. VIII, 1 Aug 1985 |
| | CAA UK | AAN n° 21671 | 7 Mar 1989 | 28 Apr 1989 | unknown |
| | FOCA, CH | unknown | unknown | unknown | unknown |
| | ENAC, IT | TC/TCDS n° A 294 | 21 Sep 1988 | 19 Feb 1990 | unknown |
| 480 | LBA, DE | TC/TCDS n° 3041 | 3 Jun 1994 | 4 Apr 1995 | ICAO Annex 16, Volume I, 3rd edition, 1993, Chapter 11 |
| | CAA UK | AAN n° 24630 | 27 May 1994 | 10 Mar 1995 | unknown |
| | DGAC, FR | TC/TCDS n° IM 84 | unknown | unknown | ICAO Annex 16, Chapter 11, Noise Data Sheet n° IM 84 |
| | FOCA, CH | unknown | unknown | unknown | unknown |
| | Swedish Transport Agency, SE | TAC n° 5/96 | unknown | 24 Jun 1996 | ICAO Annex 16, Volume I, Chapter 11 |
| 480B | CAA UK | AAN n° 28027 | 27 Jul 2001 | 1 Aug 2003 | Noise: ICAO Annex 16, Volume I, Chapter 11, Noise Type Certificate n° 232, Issue 1 |

5. The conversion of all units was done to provide SI units as common in Europe. The common rules for rounding were used. The number of numerals was set to get a fairly equal precision. The original value is added in brackets.

6. TC Holder: The Enstrom Helicopter Corporation in Menominee, Michigan.
Production Certificate n° 319CE
Production Certificate n° 319CE was previously n° 319. Refer to Service Information Letter (SIL) 0181 and SIL T-059 for applicable model effectivity and compliance requirements.

* * *

**SECTION 11: OPERATIONAL SUITABILITY DATA (OSD)**

The OSD elements listed below are approved by the European Aviation Safety Agency as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) n° 69/2014.

I. OSD Certification Basis

I.1 Reference Date for determining the applicable OSD requirements

For F-28A, 280, F-28C, F-28C-2, 280C, 280F, 480: n/a

For F-28F, F-28F-R, 280FX and 480B:
17 February 2014 (entry into force of CR (EU) n° 69/2014)

I.2 MMEL - Certification Basis

For F-28A, 280, F-28C, F-28C-2, 280C, 280F, 480: n/a

For F-28F, F-28F-R, 280FX and 480B:
Special Condition SC-CS-GEN-MMEL-Non-Complex-Helicopters published November 2015

I.3 Flight Crew Data - Certification Basis

For F-28A, 280, F-28C, F-28C-2, 280C, 280F, 480: n/a

For F-28F, F-28F-R, 280FX and 480B:
CS-FCD, Initial Issue, dated 31 January 2014

II. OSD Elements

II.1 MMEL

For F-28A, 280, F-28C, F-28C-2, 280C, F-28F-R, 280F, 480: n/a

For F-28F, 280FX:
Master Minimum Equipment List, Enstrom F-28F and Enstrom 280FX, Enstrom Report 28-DO-374, Revision n° -, dated 9 December 2015 (or later EASA approved revisions)

For F-28F-R:
Master Minimum Equipment List, Enstrom F-28F, Enstrom F-28F-R, Enstrom 280FX, Enstrom Report 28-DO-374, Revision n° A, dated 24 February 2016 (or later EASA approved revisions)

For 480B:
Master Minimum Equipment List, Enstrom 480B, Enstrom Report 28-DO-375, Revision n° - , dated 11 December 2015 (or later EASA-approved revisions)

II.2 Flight Crew Data

For F-28A, 280, F-28C, F-28C-2, 280C, F-28F-R, 280F, 480: n/a

For F-28F, 280FX:
EASA Operational Suitability Data (OSD), Flight Crew Data, F-28F & 280FX, Enstrom Report 28-DO-376, dated 1 December 2015 (or later EASA approved revisions)

For F-28F-R:
EASA Operational Suitability Data (OSD), Flight Crew Data, F-28F, F-28F-R & 280FX, Enstrom Report 28-DO-376, Revision A, dated 24 February 2016 (or later EASA approved revisions)

For 480B:
EASA Operational Suitability Data (OSD), Flight Crew Data, 480B, Enstrom Report 28-DO-377, dated 1 December 2015 (or later EASA approved revisions)

* * *

**SECTION: ADMINISTRATIVE**

I. Acronyms and Abbreviations

| | | | |
|---|---|---|---|
| °C | Degree Celsius | LBA | Luftfahrt-Bundesamt (German Federal Aviation Office) |
| °F | Degree Fahrenheit | LDG | Landing |
| AAN | Airworthiness Approval Note | LL | Low Lead |
| AFT | Aft | m | Meter |
| Amdt. | Amendment | Max. | Maximum |
| C.G. | Centre of Gravity | MC | Maximum Continuous |
| CAA UK | Civil Aviation Authority United Kingdom | min | Minute |
| CAR | Civil Air Regulations | mph | Miles per Hour |
| CFR | Code of Federal Regulations | MSL | Mean Sea Level |
| CR | (European) Commission Regulation | n/a | Not applicable |
| DE | Germany (***De**utschland*) | n° | number |
| DA | Density Altitude | OAT | Outside Air Temperature |
| DGAC | Direction Génerale de l'Aviation Civile (French Civil Aviation Authority) | OSD | Operational Suitability Data |
| ENAC | Ente Nazionale per l'Aviazione Civile (Italian Civil Aviation Authority) | P/N | Part Number |
| EU | European Union | PA | Pressure Altitude |
| FAA | Federal Aviation Administration | PWR | Power |
| FAR | Federal Aviation Regulation | RFM | Rotorcraft Flight Manual |
| FOCA | Federal Office of Civil Aviation (Swiss Civil Aviation Authority) | rpm | Revolutions per Minute |
| ft | Foot | s/n | Serial Number |
| FWD | Forward | SI | International System of Units (***S**ystème **I**nternational d'Unités)* |
| GM | Gross Mass | sec | Seconds |
| h | Hour | STA | Station |
| Hg | Mercury (***h**ydrar**g**yrum*) | TAC | Type Acceptance Certificate |
| hp | Horse Power | TE | Trailing Edge |
| H-V | Height-Velocity | TKOF | Take-Off |
| IAS | Indicated Air Speed | TQ | Torque |
| ICAO | International Civil Aviation Organization | US gal | United States Gallon |
| IFR | Instrument Flight Rules | VFR | Visual Flight Rules |
| in | Inch | VFR | Visual Flight Rules |
| kg | Kilogram | $V_{NE}$ | Never Exceed Speed |
| km | Kilometer | WL | Water Line |
| lb | Pound (*libra*) | | |

II. Type Certificate Holder Record

| **Type Certificate Holder** | **Period** |
|---|---|
| Enstrom Helicopter Corporation<br>2209 22nd Street<br>Menominee, Michigan 49858, U.S.A. | since<br>15 April 1965 |

 

III. Change Record

| Issue | Date | Changes | TC issue |
|---|---|---|---|
| Issue 1 | 18 Dec 2015 | Initial issue of EASA TCDS, transfer of grandfathered:<br>- FAA TCDS H1CE, Issue 34,<br>- LBA TCDS nº 3041,<br>- issue 7 (piston models),<br>- issue 1 (turbine model),<br>- CAA UK AAN nº 13490, Issue 4 (F-28A),<br>- CAA UK AAN n° 14333, Issue 3 (280),<br>- CAA UK AAN n° 16149, Issue 4 (F-28C, F-28C-2),<br>- CAA UK AAN nº 14738, Issue 3 (280C),<br>- CAA UK AAN nº 21672, Issue 3 (F-28F),<br>- CAA UK AAN nº 21671, Issue 3 (280FX),<br>- CAA UK AAN nº 24630, Issue 4 (480),<br>- CAA UK AAN nº 28027,initial Issue (480B),<br>- DGAC France TCDS nº IM 84,<br>- ENAC TCDS nº A 294<br>- Swedish Transport Agency:<br>- TAC n° 24/77 (280C)<br>- TAC n° 16/78 (F-28C)<br>- TAC n° 12/85 (F-28F)<br>- TAC n° 5/96 (480)<br>into EASA format. | Initial EASA Issue<br>17 December 2015 |
| Issue 2 | 20 Apr 2016 | Definition of OSD for F-28F-R, and<br>Addition of RFM Supplement n° 28-AC-059 to section 8 and 9 | - - - |
| Issue 3 | 1 Jun 2017 | Introduction of the Certification Basis of the Integrated Flight Deck applicable for the model 480B;<br>Two corrections in revision dates of RFM Supplements;<br>Addition of applicable RFM Supplements;<br>Update of the Notes-Sections | - - - |
| Issue 4 | 27 Jun 2018 | Correction of the applicable fuel definitions of the model 480 and 480B; exclusion of one more s/n of model 280FX; clarification of the applicable RFM and RFM Supplements of the variants F-28C-2 and F-28F-R;<br>Addition of the RFM Supplements n° 28-AC-67, 28-AC-074, 28-AC-075 and the applicable notes;<br>corrected conversion of mass units in Section 1, III.12 and III.20; minor format and typo corrections. | - - - |
| Issue 5 | 19 Jun 2019 | Correction/clarification of:<br>references to notes; fuel grades of 480 and 480B; serial number applicability; Maintenance Manual Supplements.<br>Adding:<br>- RFMS 28-AC-074 for F-28F (correction);<br>- RFMS 28-AC-080, 28-AC-081 for F-28F and 280FX;<br>- RFMS 28-AC-076, 28-AC-078, 28-AC-079 for 480B; | - - - |
| Issue 6 | 13 Jan 2020 | Addition of a new part number in Note 21 to Model 480B. | - - - |

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