

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

A43CE Revision 10 EXTRA EA 400 EA 400-500 May 16, 2013

TYPE CERTIFICATE DATA SHEET NO. A43CE

This data sheet which is part of Type Certificate No. A43CE prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder Extra Flugzeugproduktions- und Vertriebs- GmbH
 Schwarze Heide 21
 D-46569 Huenxe
 Germany

Type Certificate Holder Record Extra Flugzeugbau GmbH
 Flugplatz Dinslaken Schwarze Heide
 46569 Hünxe
 Federal Republic of Germany

transferred TC A43CE to
 Extra Flugzeugproduktions- und Vertriebs- GmbH
 on August 26, 2003. See Note 9.

I. Model EA 400 (Sales designation EXTRA 400), (Normal Category), approved April 15, 1998

Engine One Teledyne Continental TSIOL-550-C, TCDS E4SO
 Must be modified per German Supplemental Type Certificate
 EN 0021, Fuel Flow Transmitter Installation

Fuel 100/100LL minimum grade aviation gasoline

Engine Limits Maximum Take-Off, 2600 rpm (350 hp)
 Continuous Operation, 2500 rpm (325 hp)

Propeller (a) MT Propeller Co. MTV-14-D/195-30a, TCDS P3BO
 (b) Spinner: Dwg No. P-456

Propeller Limits Diameter 76.77 in (1950 mm)
 Low Pitch 12 °± 0.2°
 High Pitch 38 °± 1°
 Pitch Radius at 26.77 in (680 mm)

Airspeed Limits V_{NE} 221 KCAS, 254 mph
 V_{NO} 190 KCAS, 219 mph
 V_O (3179 lbs / 1450 kg) 134 KCAS, 155 mph
 V_O (4408 lbs / 1999 kg) 158 KCAS, 182 mph
 V_{FE 15°} 120 KCAS, 138 mph
 V_{FE 30°} 111 KCAS, 128 mph
 V_{LO} 142 KCAS, 163 mph
 V_{LE} 142 KCAS, 163 mph

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<u>C.G. Range</u>	Takeoff, flight and landing: 137.0 to 145.8 (3479 mm to 3703 mm) aft of datum at 4407 lbs (1999 kg) 132.3 to 145.8 (3479 mm to 3703 mm) aft of datum at 3527 lbs (1600 kg) or less Straight-line variation between points.	
<u>Empty Wt. C.G. Range</u>	None	
<u>Reference Datum</u>	103.9 in (2640 mm) in front of nose jack point, refer to Section 6 of the Pilot's Operating Handbook Doc. No. EA-05701.	
<u>Leveling Means</u>	Upper edge of lower cabin door for longitudinal level. Front seat rails for lateral level.	
<u>Maximum Weight</u>	Takeoff and Landing 4407 pounds.	
<u>Minimum Crew</u>	1	
<u>No. of Seats</u>	2 adjustable seats at 111.22 (2825 mm) to 117.37 (2981 mm) aft of datum. 2 fixed seats at 155 (3937 mm) aft of datum. 2 fixed seats at 199 (5055 mm) aft of datum.	
<u>Maximum Baggage</u>	198 pounds (90 kg) total in baggage compartment at 226.4 inches (5750 mm) aft of the datum.	
<u>Fuel Capacity</u>	124 gallons (468 liters) total, (two 62 gallon tanks at 148.3 in (3768 mm) aft of the datum). 106.7 gallons (404 liters) usable, 53.35 gallons (202 liters) each tank. See Note 1.	
<u>Oil Capacity</u>	13 qt (12.3 liters). See Note 1.	
<u>Coolant Capacity</u>	2.5 gallons (9.5 liters). See Note 1.	
<u>Maximum Operating Altitude</u>	25,000 feet.	
<u>Control Surface Movements</u>	Aileron	trailing edge up 27°, trailing edge down 19°
	Elevator	trailing edge up 33°, trailing edge down 18°
	Trim tab (on RH elevator)	+30° (nose up) / -20° (nose down)
	Rudder	± 25°
	For all control surfaces a tolerance of 2° is applied, except flaps.	
	Take off flap setting	15°
	Landing flap setting	30°
<u>Manufacturer's Serial Numbers</u>	Serial numbers 03 to 21, 23 to 26 and 28 (airplanes manufactured by Extra Flugzeugbau GmbH.) Serial numbers 1022, 1027, 1029 and on (continuation of manufacture by Extra Flugzeugproduktions- und Vertriebs- GmbH.) See type certificate holder record.	

Certification Basis

Type Certification under 14 CFR Section 21.29 including the following requirements:

- 14 CFR Part 23 effective February 1, 1965, including Amendments 23-1 through Amendment 23-45,
- 14 CFR Part 36 effective December 1, 1969, including Amendments 36-1 through Amendment 36-21,

Equivalent Safety Items:

Equivalent levels of safety finding made per the provisions of 14 CFR Part 21.21(b)(1) for:

ELOS ACE-97-5: FAR §23.991(d), Fuel Pumps; Refer to FAA letter dated February 3, 1998.

ELOS ACE-00-08: FAR §23.1143(g), Engine Controls and §23.1147(b), Mixture Controls; Refer to FAA letter dated June 29, 2000.

ELOS ACE-00-07: FAR § 23.807(b)(2), Emergency Exits; refer to FAA letter dated June 27, 2000.

Special Conditions:

SC-23-ACE-93, Fire Protection of Engine Mount Fuselage Connection.

23-111-SC, Protection of Systems for High Intensity Radiated Fields (HIRF).

In addition to the previous certification requirements, Type Certification under 14 CFR Section 21.29 including the following requirements, for operation in icing conditions (also see Note 8):

- 14 CFR Parts 23.49, 23.1093, 23.1107, 23.1323, 23.1419 effective February 1, 1965, including Amendments 23-1 through Amendment 23-54,

ELOS ACE-02-10: 14 CFR § 23.1419(a), Ice Protection; refer to FAA letter dated September 18, 2002.

This airplane has been evaluated with the provisions of FAA Policy Memorandum, Generic Issue Paper, Roll Control in Supercooled Large Droplets, dated July 23, 1997.

Type Certificate No. A43CE was issued April 15, 1998.

Date of Application for Type Certificate was April 26, 1993.

The Luftfahrt Bundesamt originally type certificated this aircraft under its type certificate Numbers 1085. The FAA validated this product under U.S. Type Certificate Number A43CE. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of Germany.

Service Information

Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA) or – for approvals made before September 28, 2003 – by the Luftfahrt Bundesamt.

- Service bulletins,
- Structural repair manuals,
- Vendor manuals,
- Aircraft flight manuals, and
- Overhaul and maintenance manuals.

The FAA accepts such documents and considers them FAA-approved unless one of the following conditions exists:

- The documents change the limitations, performance, or procedures of the FAA approved manuals; or

Service Information, Cont'd

- The documents make an acoustical or emissions changes to this product's U.S. type certificate as defined in 14 CFR § 21.93.

FAA
the U.S. type

The FAA uses the post type validation procedures to approve these documents. The FAA may delegate on case-by-case to EASA to approve on behalf of the FAA for the U.S. type certificate. If this is the case it will be noted on the document.

II. Model EA 400-500 (Sales designation EXTRA 500), (Normal Category), approved May 16, 2013

<u>Engine</u>	Rolls-Royce 250-B17F/2, TCDS E10CE
<u>Fuel</u>	JET A or JET A-1 (ASTM D1655-03 or later)
	For ambient temperature below +40°F (+4°C) fuel must contain 0.10% up to maximum 0.15% anti-icing additive (MIL-DTL-85470B or later)
<u>Engine Limits</u>	Maximum Take-Off, 2030 rpm (450 hp) Maximum continuous operation, 2030 rpm (380 hp) Minimum normal operation, 1900 rpm (380 hp) Maximum during transient, 2030 rpm to 2233 rpm (15 sec. max. above 2132 rpm)
<u>Propeller</u>	(a) MT Propeller Co. MTV-5-1-D-C-F-R(A)/CFR210-56, TCDS P26BO (b) Spinner: Dwg No. P-629-A
<u>Propeller Limits</u>	Diameter 82.68 in \pm 0.2 in (2100 mm \pm 5 mm) Low Pitch 8° \pm 0.2° High Pitch 79° \pm 1° Reverse -15° \pm 1° Pitch Radius at 31.1 in (790 mm)
<u>Airspeed Limits</u>	V _{NE} 209 KCAS, 241 mph V _{NO} 190 KCAS, 219 mph V _O (3406 lbs / 1545 kg) 132 KCAS, 152 mph V _O (4696 lbs / 2130 kg) 158 KCAS, 182 mph V _{FE 15°} 120 KCAS, 138 mph V _{FE 30°} 111 KCAS, 128 mph V _{LO} 142 KCAS, 163 mph V _{LE} 142 KCAS, 163 mph
<u>C.G. Range</u>	Takeoff, flight and landing: 139.0 to 143.9 (3531 mm to 3656 mm) aft of datum at 4696 lbs (2130 kg) 135.4 to 143.9 (3438 mm to 3656 mm) aft of datum at 3527 lbs (1600 kg) or less Straight-line variation between points.
<u>Empty Wt. C.G. Range</u>	None
<u>Reference Datum</u>	122.6 in (3115 mm) in front of front edge of main wheel bay, refer to Section 6 of the Pilot's Operating Handbook Doc. No. EA-0B701.
<u>Leveling Means</u>	Upper edge of lower cabin door for longitudinal level. Front seat rails for lateral level.
<u>Maximum Weight</u>	Takeoff and Landing 4696 lbs pounds.
<u>Minimum Crew</u>	1
<u>No. of Seats</u>	2 adjustable seats at 111.22 (2825 mm) to 117.20 (2977 mm) aft of datum. 2 fixed seats at 155 (3930 mm) aft of datum. 2 fixed seats at 199 (5050 mm) aft of datum.

<u>Maximum Baggage</u>	198 pounds (90 kg) total in baggage compartment at 226.4 inches (5750 mm) aft of the datum.	
<u>Fuel Capacity</u>	179.7 gallons (680 liters) total, (two 9.9 gallon tanks at 148.3 in (3768 mm), two 51.9 gallon tanks at 148.3 in (3768 mm) and two 28.0 gallon tanks at 154 in (3900 mm) aft of the datum).	
	172.3 gallons (652 liters) usable, (two 114 gallon (440 liters) tanks and two 27.5 gallon (106 liters) tanks. See Note 1.	
<u>Oil Capacity</u>	8.0 qts (7.57 liters) total. Engine external oil tank Maximum 5.47 qts (5.18 liters) Minimum 4.31 qts (4.08 liters) See Note 1.	
<u>Coolant Capacity</u>	None	
<u>Maximum Operating Altitude</u>	25,000 feet.	
<u>Control Surface Movements</u>	Aileron	trailing edge up 27° tolerance +0° / -2°, trailing edge down 19° tolerance +2° / -0°
	Elevator	trailing edge up 33° tolerance +0° / -2°, trailing edge down 18° tolerance +2° / -0°
	Trim tab (on RH elevator)	trailing edge 30° down (nose up) tolerance +/-2°, trailing edge up 20° (nose down) tolerance +/-2°
	Rudder	± 25° tolerance +0° / -2°
	Take off flap setting	15°
	Landing flap setting	30°
<u>Manufacturer's Serial Numbers</u>	None eligible for this model.	
<u>Import Requirements</u>	A U.S. airworthiness certificate may be issued on the basis of a German Certificate of Airworthiness for Export signed by a representative of EASA, containing the following statement: "The aircraft covered by this certificate has been examined and found to comply with U.S. Type Certificate A43CE approved under U.S. Type Certificate No. A43CE and to be in a condition for safe operation."	
<u>Certification Basis</u>	Type Certification under 14 CFR Section 21.29 including the following requirements: - 14 CFR Part 23 effective February 1, 1965, including Amendments 23-1 through Amendment 23-45, and with paragraphs 23.25, 23.33, 23.45, 23.49, 23.51, 23.53, 23.63, 23.65, 23.69, 23.71, 23.73, 23.77, 23.145(c), 23.155, 23.161, 23.175, 23.177, 23.201, 23.203, 23.221, 23.233, 23.253 at amendment 23-50; 23.301, 23.335, 23.343, 23.345(d)(1) and (d)(2), 23.371, 23.573, 23.629 at amendment 23-48; 23.735 at amendment 23-49; 23.777 at amendment 23-51; 23.865 at amendment 23-48; 23.901 at amendment 23-53; 23.903 at amendment 23-54; 23.905, 23.907 at amendment 23-59; 23.925, 23.933, 23.955, 23.959, 23.965(b), 23.973, 23.1013, 23.1041, 23.1043, 23.1045, 23.1091, 23.1093, 23.1121, 23.1141, 23.1143, 23.1153, 23.1181, 23.1183, 23.1191 at amendment 23-51; 23.1303 at amendment 23-49; 23.1305 at amendment 23-52; 23.1306 at amendment 23-61; 23.1308 at amendment 23-57; 23.1309, 23.1311, 23.1321 at amendment 23-49; 23.1337 at amendment 23-51; 23.1351, 23.1353, 23.1359, 23.1361, 23.1435 at amendment 23-49; 23.1521, 23.1545, 23.1553, 23.1555, 23.1583, 23.1585, 23.1587 at amendment 23-50. - 14 CFR Part 34 effective September 10, 1990, including Amendments 34-1 through Amendment 34-5,	

Certification Basis, Cont'd

- 14 CFR Part 36 effective December 1, 1969, including Amendments 36-1 through Amendment 36-29,

Compliance with ice protection has not been demonstrated in accordance with 14 CFR §23.1416 and 23.1419, not approved for icing.

Compliance with the provisions for ditching equipment has not been demonstrated in accordance with 14 CFR § 23.1415(a)(b), not approved for ditching.

Special Conditions as follows:

Special Conditions SC-23-ACE-93, Fire Protection of Engine Mount Fuselage

Equivalent levels of safety as follows:

(a) ACE-00-07A: 14 CFR §23.807(b)(2), Emergency Exits

(b) ACE-12-03: 14 CFR §23.1505(c), Airspeed limitations

(c) ACE-13-02: 14 CFR Part 23, § 23.1093(b)(1)(i), Induction System Icing Protection

Type Certificate No. A43CE was reissued May 16, 2013.

Date of Application for Amended Type Certificate was November 10, 2011.

Approved for day-night VFR.

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification.

In addition, the following items of equipment are required:

Pilot's Operating Handbook and German EASA approved Airplane Flight Manual dated April 19, 2013, Extra document number EA-0B701, or later EASA approved revision.

Service Information

Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA).

- Service bulletins,
- Structural repair manuals,
- Vendor manuals,
- Aircraft flight manuals, and
- Overhaul and maintenance manuals.

The FAA accepts such documents and considers them FAA-approved unless one of the following conditions exists:

- The documents change the limitations, performance, or procedures of the FAA approved manuals; or
- The documents make an acoustical or emissions changes to this product's U.S. type certificate as defined in 14 CFR § 21.93.

The FAA uses the post type validation procedures to approve these documents. The FAA may delegate on case-by-case to EASA to approve on behalf of the FAA for the U.S. type certificate. If this is the case it will be noted on the document.

NOTE 1: Weight and Balance:

Models EA 400 and EA 400-500: A current weight and balance report including list of equipment included in the certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original certification.

The certificated empty weight and corresponding center of gravity location must include full oil, coolant and unusable fuel.

- NOTE 2: Models EA 400 and EA 400-500: The placards specified in the LBA or EASA approved Pilot's Operating Handbook must be displayed.
- NOTE 3: Model EA-400: Instructions for Continued Airworthiness and Service Life Limited components is included in the Maintenance Manual Document No. EA-05702. Revisions to Airworthiness Limitations must be LBA or EASA approved for the FAA.
- Model EA-400-500: Instructions for Continued Airworthiness have not been approved or accepted. Service Life Limited components are included in the Maintenance Manual Document No. EA-0B702. Revisions to Airworthiness Limitations must be EASA approved for the FAA. At this time, only Chapter 4 (Limitations) of this document is approved
- NOTE 4: Exterior colors are limited to those specified in Extra document:
EA-05702 for Models EA-400; and
EA-0B702 for Model EA-400-500.
- NOTE 5: Reserved.
- NOTE 6: Reserved.
- NOTE 7: EA-400 airplane serial numbers 003 through 013 must be modified in accordance with LBA AD 2000-278/2 (which incorporates Extra service bulletin 400-3-00 Issue A) or later LBA approved revision.
- NOTE 8: EA-400 airplanes: serial numbers 003 through 027 eligible for flight into icing when modified with Extra service bulletin SB-400-01-02 or later LBA approved revision. Airplane serials 028 and above have shown compliance to applicable icing requirements and are approved for operation in icing conditions.
- NOTE 9: Extra Flugzeugproduktions- und Vertriebs- GmbH is the successor firm of Extra Flugzeugbau GmbH, which filed for insolvency on January 28, 2003.

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