TYPE-CERTIFICATE

DATA SHEET

NO. EASA.IM.A.171

for
ECLIPSE EA500

Type Certificate Holder
Eclipse Aerospace Inc.

43W514 US Route 30
Sugear Grove, IL 60554
Unites States of America

For models: EA500

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SECTION A: MODEL EA500 DESIGNATION

A.I. General

1. Type/ Model/ Variant

1.1	Eclipse
1.2	EA500
1.3	N/A

2. Airworthiness Category: Normal Category

3. Manufacturer

Eclipse Aviation Corporation
2503 Clark Carr Loop SE
Albuquerque, New Mexico 87106
United States of America

Eclipse Aerospace, Inc.
2503 Clark Carr Loop SE
Albuquerque, New Mexico 87106
United States of America

4. EASA Type Certification Application Date: 21 February 2003 (for S/N -000001 and on)

5. State of Design Authority USA

6. State of Design Authority Type Certificate Date: 30 September 2006 (for S/N -000001 and on)

7. EASA Type Certification Date 21 November 2008

A.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements 12 October 2003 (for S/N -000001 and on)

2. Type Certification Basis

2.1 Certification Specification	CS-23 Original Issue

2.2. Special Conditions

CRI A-07	Special Conditions for High Performance Aircraft CS 23 Generic Item List
CRI B-05	Braking Performance CS 23
CRI B-07	Low Speed Protection and Indication CS 23
CRI C-01	Bird Strike CS 23.775(h)
CRI C-02	Speed Margins CS 23.335(b)
CRI C-03	Windshields & Windows CS 23.775
CRI C-04	Vibration & Buffeting CS 23.251
CRI C-06	Sonic Fatigue CS 23.571
CRI C-08	Pressurisation into Non-pressurised Areas CS 23.365(e)
CRI C-09	Interaction of Systems and Structures CS 23.1309
CRI C-10	Fuel Tank Crashworthiness CS 23.561, .721, .967
CRI C-12	Fire Protection of Engine Mounts CS 23.865
CRI C-14	Yawing Manoeuvre CS 23.441(b)
CRI C-16	Round-the-Clock Gust CS 23.427
CRI E-04	Engine Firex System CS 23.1195
CRI E-05	FADEC Integration CS 23.1309
CRI E-10	Fuel Tank Ignition Prevention CS 23.981, .1309
CRI F-01	HIRF JAA INT/POL 23-1
CRI F-05	Flap System Interconnection CS 23.701
CRI F-06	Side-stick Forces CS 23.397
CRI F-07	Landing Gear Secondary Locking CS 23.729
CRI F-08	Main Door CS 23.783
CRI F-09	Battery Endurance Requirement CS 23.1353
CRI F-13	Electronic Circuit Breakers CS 23.1357
CRI F-14	Aircraft Systems Wiring CS 23.1309
CRI F-15	Brake System CS 23.735
CRI F-17	Human Factors CS 21.101

2.3. Exemptions None

2.4 (Reserved)

2.5. Equivalent Level of Safety

CRI B-01	Artificial Stall Barrier Systems CS 23.103, .201-.207
CRI E-03	Engine Shut-off Means CS 23.777, .781
CRI F-30	Stand-by Compass Removal

FAA ELOS memo ACE-05-35 FAR 23.1353(h), Storage Battery Design and Installation, as modified by EASA CRI's F-09 and B-02.

2.6. Environmental Protection

CRI A-03	Additional National Requirements for Environmental Standards
	CS 34, Aircraft Engine Emissions and Fuel Venting
	CS 36, Aircraft Noise
	ICAO Annex 16, Volume I, 3rd Edition, Amendment 7
	ICAO Annex 16, Volume II, 2nd Edition, Amendment 4

2.7. Operational Suitability Certification Basis

2.7.1 Master Minimum Equipment List	Certification Basis as recorded in ORI 4 is JAR–MMEL/MEL Section 1 Subpart A and B Amendment 1 with the MoC Specified in Eclipse Aerospace's Position in the same ORI4.
2.7.2 Flight Crew Data	Eclipse elects to comply with Certification Specification of Operational Suitability Data (OSD) Flight crew Data FCD, Initial Issue, 31st January 2014.

A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition	For aircraft serial number 500-000001 through 500-000262, 500-000266 & 500-000267 the applicable EASA Type Design Definition is defined by the document "Eclipse Configuration Specification, EASA Type Certified Aircraft Configuration", No. E420-CS-0022, Rev. D (or later EASA approved revision). For aircraft serial numbers 550-0263 through 550-0265, 550-0268 through 550-0280, 550-0282 through 550-0284 is defined by the Modification Bulletins MB 550-99-001 Rev. A (or later FAA approved revision) and MB 550-04-001 Rev. B (or later EASA approved revisions). For aircraft serial numbers 550-1001 and higher the applicable EASA Type Design Definition is defined by the FAA approved drawing 06-500550-1001 and Modification Bulletin, MB 550-04-001 Rev. B (or later EASA approved revisions).
2. Description	Low wing aircraft with retractable tricycle landing gear, T-tail, pressurized cabin, and two turbofan engines pylon mounted on the rear fuselage.

3. Equipment

For Model EA500 aircraft serial number 500-000001 through 500-000262, 500-000266 & 500-000267 Equipment List according to AFM, 06-122204, Rev 4 or later FAA approved revision (See Section IV).

For Model EA500 aircraft serial number 500-000001 through 500-000262, 500-000266 & 500-000267 modified by MB500-99-001, or MB500-99-002, or MB500-99-004 Equipment List according to AFM, 06-123844, Rev 1 or later FAA approved revision (See Section IV).

For Model EA500 aircraft serial numbers 550-0263 through 550-0265, 550-0268 through 550-0280, 550-0282 through 550-0284 which incorporate Eclipse FAA approved Modification Bulletin, MB 550-99-001 and Model EA500 aircraft serial numbers 550-1001 and higher Equipment List according to AFM, 06-123841, Rev 0 or later FAA approved revision (See Section IV).

4. Dimensions

Span 11.56 m (37 ft.11 in.)

Length 10.19 m (33 ft. 5 in.)

Height 3.35 m (11 ft.)

5. Engine

5.1. Model — Two Pratt & Whitney Canada PW610F-A,

5.2 Type Certificate — Type Certificate Data Sheet (TCDS) E00074EN

5.3 Limitations

	N1(%)	N2(%)	MAX ITT (°C)	Time Limit
Maximum Take-off	102	100	795	5 minutes
Max. Continuous	102	100	795	Continuous
APR	102	100	795	10 minutes
Transient	103	102	850	20 seconds

6. (Reserved)

7. (Reserved)

8. Fluids

8.1 Fuel

JET A and Jet A-1 per ASTM D 1655; JP-8 per MIL-T-83133

Fuels not containing icing inhibitors must have MIL-I-27686, MIL-I-85470, or Phillips PFA-55MB fuel system icing inhibitors blended into the aircraft fuel at concentrations not less than 0.10% but no more than 0.15% by volume. The minimum fuel icing inhibitor content during refueling is 0.10% by volume.

8.2 Oil

Only oils conforming to the specifications of MIL-L-23699 Type II Aviation Turbine Engine Oil are approved for use. The following oils conform to this specification:

- Aero Shell Turbine Oil 500 (Type II Standard)
- Aero Shell Turbine Oil 560 (Type II HTS)
- BP Turbo Oil 2380 (Type II Standard)
- BP Turbo Oil 2197 (Type II HTS)
- Castrol 5000
- Mobil Jet Oil Type II (Type II Standard)
- Mobil Jet Oil 254 (Type II HTS)
- Royco Turbine Oil 500 (Type II Standard)
- Royco Turbine Oil 560 (Type II HTS)
- TurboNycoil TN 600

8.3 Coolant

Not Applicable

9. Fluid capacities

9.1 Fuel

254.4 gallons (USG) total; 250.9 gallons (USG) usable;
3.5 gallons (USG) unusable
Moment arm 198 inches aft of datum

9.2 Oil

6.088 quarts (USQ) total per engine; 0.832 quarts (USQ) usable per engine

9.3 Coolant system capacity

Not Applicable

10. Air Speeds

Maximum Operating	V_{MO}	285 KEAS
	M_{MO}	0.64 KEAS
Maneuvering	V_O	180 KEAS
Flaps Extended	V_{FE} (Flap T/O)	200 KEAS
Flaps Extended	V_{FE} (Flap LDG)	140 KEAS
Landing Gear Operating	V_{LO}	200 KEAS
Max Tire Ground Speed		139 KNOTS
Min Airspeed in Icing Conditions		165 KEAS

11. Flight Envelope

Take-off	10,000 ft MSL
Operating	41,000 ft MSL

12. Approved Operations Capability

VFR Day and Night

IFR Day and Night

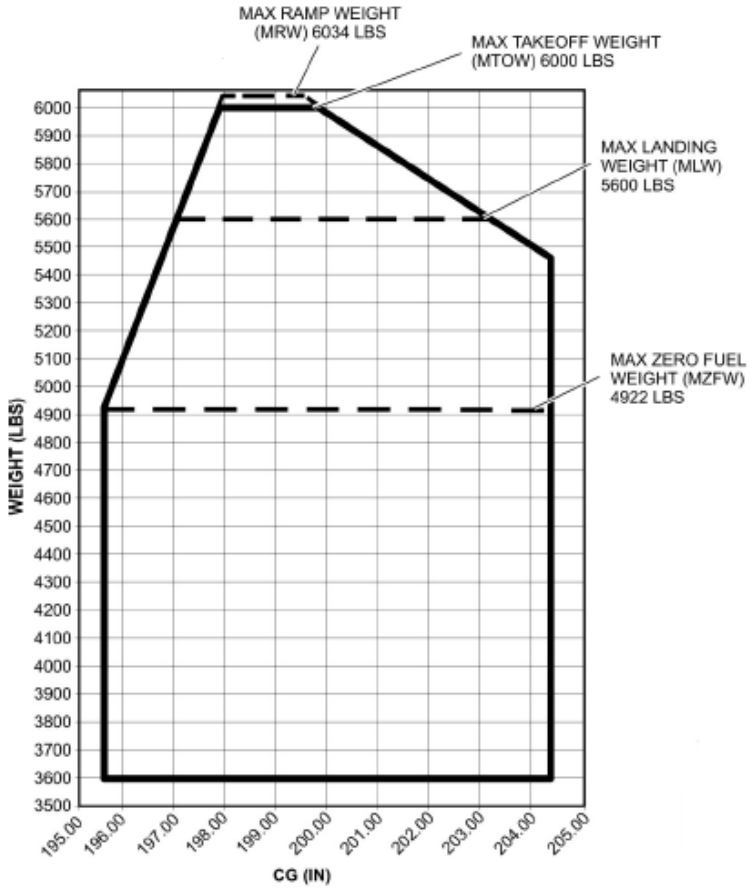
RVSM

Flight into Known Icing (See Limitations Section of Approved Airplane Flight Manual)

13. Maximum Masses

Max. Ramp	2,737 kg (6,034 lbs)
Max. Take-off	2,722 kg (6,000 lbs)
Max. Landing	2,540 kg (5,600 lbs)
Max. Zero Fuel	2,233 kg (4,922 lbs)

14. Centre of Gravity Range



Forward limits: 195.65 inches aft of datum up to 4,922 lbs with a straight line taper to 197.91 inches at 6,000 lbs.

Aft Limits: 204.37 inches aft of datum up to 5,461 lbs with a straight line taper to 199.70 inches at 6,000 lbs.

15. Datum Is located 23.25 inches forward of the nose radome

16. (Reserved)

17. Levelling Means

Laterally: Forward edge of the baggage compartment floor

Longitudinally: Left hand out board seat track in front of the main cabin door.

18. Minimum Flight Crew

1 Pilot plus required equipment as specified in the Approved Airplane Flight Manual (AFM)

19. Maximum Passenger Seating Capacity

For Model EA500 aircraft serial number 500-000001 through 500-000262, 500-000266 & 500-000267 6 Max (Includes pilot and crew); Refer to the Airplane Flight Manual (AFM), Document No. 06-122204, latest FAA approved revision, Section 6 for seat configurations and moment arms

For Model EA500 aircraft serial number 500-000001 through 500-000262, 500-000266 & 500-000267 modified by MB500-99-001, or MB500-99-002, or MB500-99-004 6 Max (Includes pilot and crew); Refer to the Airplane Flight Manual (AFM), Document No. 06-123844, latest FAA approved revision, Section 6 for seat configurations and moment arms.

For Model EA500 aircraft serial numbers 550-0263 through 550-0265, 550-0268 through 550-0280, 550-0282 through 550-0284 which incorporate Eclipse FAA approved Modification Bulletin, MB 550-99-001 and Model EA500 aircraft serial numbers 550-1001 and higher 6 Max (Includes pilot and crew); Refer to the Airplane Flight Manual (AFM), Document No. 06-123841, latest FAA approved revision, Section 6 for seat configurations and moment arms

20. Baggage/ Cargo Compartments

Baggage Compartment floor loading is 100 lb/ft

21. (Reserved)

22. (Reserved)

A.IV. Operating and Service Instructions

1. Flight Manual

For Model EA500 aircraft serial number 500-000001 through 500-000262, 500-000266 & 500-000267 must be operated according to the FAA approved Airplane Flight Manual (AFM), Document No. 06-122204, Rev. 4 or later FAA approved revision, including EASA

	approved AFM Supplement, Document No. 06-122953-EASA01, or later EASA approved revision. For Model EA500 aircraft serial number 500-000001 through 500-000262, 500-000266 & 500-000267 modified by MB500-99-003 must be operated according to the FAA approved Airplane Flight Manual (AFM), Document No. 06-122204, Rev. 4 or later FAA approved revision and AFM Supplements 06-121770-08 Integrated Flight Management System (IFMS) Version 2.5+, Original Issue, or later FAA approved Version and AFM Supplement 06-121770-07, Anti-Skid Braking System (ABS), Revision 2 or later FAA approved revision. For Model EA500 aircraft serial number 500-000001 through 500-000262, 500-000266 & 500-000267 modified by MB500-99-001, or MB500-99-002, or MB500-99-004 must be operated according to the FAA approved Airplane Flight Manual (AFM), Document No. 06-123844, Rev. 1 (including TR 03) or later FAA approved revision. For Model EA500 aircraft serial numbers 550-0263 through 550-0265, 550-0268 through 550-0280, 550-0282 through 550-0284 which incorporate Eclipse FAA approved Modification Bulletin, MB 550-99-001 and Model EA500 aircraft serial numbers 550-1001 and higher must be operated according to the FAA approved Airplane Flight Manual (AFM), Document No. 06-123841, Rev. 0 (including TR 06) or later FAA approved revision. Model EA500 aircraft serial number 500-000001 through 500-000262, 500-000266 & 500-000267 must be operated commercially according to EASA approved AFM Supplement, part number 06-122953-EUOPS 01, Original Issue (or later EASA approved revision). Model EA500 aircraft serial numbers 550-0263 through 550-0265, 550-0268 through 550-0280, 550-0282 through 550-0284 which incorporate Eclipse FAA approved Modification Bulletin, MB 550-99-001 and Model EA500 aircraft serial numbers 550-1001 and higher must be operated commercially according to EASA approved AFM Supplement, part number 06-123841-EUOPS, Original Issue (or later EASA approved revision).
2. Maintenance Manual	For Model EA500 aircraft serial number 500-000001 through 500-000262, 500-000266 & 500-000267 Aircraft Maintenance Manual, part number 06-117751, Rev 19 (or later approved revision) and EASA AMM Supplement, part number 06-122713 (latest approved revision). See EASA AMM Supplement for Airworthiness Limitations for inspections, mandatory retirement life information and other requirements for continued airworthiness. Airworthiness Limitations shall not be changed without the approval of the EASA. For Model EA500 aircraft serial numbers 550-0263 through 550-0265, 550-0268 through 550-0280, 550-0282 through 550-0284 which incorporate Eclipse FAA approved Modification Bulletin, MB 550-99-001 and Model EA500 aircraft serial numbers 550-1001 and

	higher Aircraft Maintenance Manual, part number 06-123838, Rev 0 (or later approved revision) and EASA AMM Supplement, part number 06-123838-EASA (latest approved revision). See EASA AMM Supplement for Airworthiness Limitations for inspections, mandatory retirement life information and other requirements for continued airworthiness. Airworthiness Limitations shall not be changed without the approval of the EASA.
3. Structural Repair Manual	Document "EA500 Structural Repair Manual" part number 06-117755 latest revision.
4. Weight and Balance Manual	See Note 1
5. Illustrated Parts Catalogue	Document "EA500 Illustrated Part Catalog" part number 06-117752 latest revision.

A.V. Operational Suitability Data (OSD)

1. Master Minimum Equipment List (MMEL)	E814-MM-0002 latest approved revision
2. Flight Crew Data (FCD)	E810-OSD-0002 latest approved revision

A.VI. Notes

Note 1. Current weight and balance information, including list of equipment included in certificated empty weight, and loading instructions are provided for each airplane at the time of original certification. (See Limitations Section of Approved Airplane Flight Manual for Kinds of Operation List.)

Note 2. For Model EA500 aircraft serial number 500-000001 through 500-000262, 500-000266 & 500-000267 prior to export to and registration in EASA Member States, the following Eclipse Aerospace Service Bulletin must be incorporated in an EA500 aircraft, either during the production build prior to original certification or as a modification in a fielded aircraft:

- Eclipse Aerospace Service Bulletin, "EASA Configuration Definition for Aircraft to be exported to and registered in EASA Member States", SB 500-04-001, latest revision.

For Model EA500 aircraft serial numbers 550-0263 through 550-0265, 550-0268 through 550-0280, 550-0282 through 550-0284 which incorporate Eclipse FAA approved Modification Bulletin, MB 550-99-001 and Model EA500 aircraft serial numbers 550-1001 and higher prior to export to and registration in EASA Member States, the following Eclipse Aerospace Service Bulletin must be incorporated in an EA500 aircraft, either during the production build prior to original certification or as a modification in a fielded aircraft:

- Eclipse Aerospace Service Bulletin, "Configuration Definition for Aircraft to be exported to and registered in EASA Member States", MB 550-04-001, latest revision.

Note 3. For Model EA500 aircraft serial number 500-000001 through 500-000262, 500-000266 & 500-000267 prior to export to and registration in EASA Member States, the following FAA Airworthiness Directives (ADs) must be complied with:

- 2007-24-12 (dated 27/11/07) Inspect the fuel filter adaptors for primer and/or paint in the surround. Aircraft effectivity: S/N 500-000039 to 500-000062

- 2008-02-04 (dated 26/2/08) Pitot system. Aircraft effectivity: S/N 500-000001 to 500-000064

- 2008-16-15 (dated 07/08/08) Throttle lever. Aircraft effectivity: All S/N.

- 2008-19-01 (dated 29/9/08) Airplane Flight Manual (AFM). Aircraft effectivity: S/N 500-000001 to 500-

	000189 with affected Harco Labs, Inc pitot/angle of attack (AOA) probe P/Ns 100435-39, 100435-39-001, 100435-40, and 100435-40-001.
• 2011-06-06 R1 (dated 20/12/11)	Engine - Airplane Flight Manual (AFM) and Maximum Operating Altitude Limitation – Introduction. Aircraft effectivity: All S/N
• 2010-20-24 (dated 07/10/2010)	Electronic Flight Information System (EFIS) and Airplane Flight Manual - Modification / Amendment. Aircraft effectivity: (1) SNs 000105 through 000112, 000116 through 000119, 000121 through 000122, and 000125 through 000260; (2) SNs 000039 through 000104, 000113 through 000115, 000120, and 000123 through 000124, that incorporate Avionics Upgrade to AVIO NG Configuration for ETT Configured Aircraft per any revision level of Eclipse SB 500-99-002; and (3) SNs 000001 through 000038, that incorporate Performance Enhancement & Drag Reduction Modification per any revision level of Eclipse SB 500-99-001 and Avionics Upgrade to AVIO NG Configuration for ETT Configured Aircraft per any revision level of Eclipse SB 500-99-002.

For Model EA500 aircraft serial numbers 550-0263 through 550-0265, 550-0268 through 550-0280, 550-0282 through 550-0284, which incorporate Eclipse FAA, approved Modification Bulletin, MB 550-99-001 and Model EA500 aircraft serial numbers 550-1001 and higher prior to export to and registration in EASA Member States, the following FAA Airworthiness Directives (AD's) must be complied with:

• 2008-16-15 (dated 07/08/08)	Throttle lever. Aircraft effectivity: All S/N
• 2011-06-06 R1 (dated 20/12/11)	Engine - Airplane Flight Manual (AFM) and Maximum Operating Altitude Limitation – Introduction. Aircraft effectivity: All S/N

Note 4. FAA Memorandum ACE-05-35 is modified by and superseded by EASA CRI F-09, Battery Endurance Requirements, and CRI B-02, Engine Control (at switched off electrical power).

Note 5. Deleted

Note 6. For aircraft serial number 500-000001 through 500-000262, 500-000266 & 500-000267 EASA approved Airworthiness Limitations for inspection time limits and maintenance checks are included in the EASA Aircraft Maintenance Manual (AMM) Supplement, part number 06-122713 (latest approved revision).

For aircraft serial numbers 550-0263 through 550-0265, 550-0268 through 550-0280, 550-0282 through 550-0284 which incorporate Eclipse FAA approved Modification Bulletin, MB 550-99-001 and Model EA500 aircraft serial numbers 550-1001 and higher EASA approved Airworthiness Limitations for inspection time limits and maintenance checks are included in the EASA Aircraft Maintenance Manual (AMM) Supplement, part number 06-123838-EASA (latest approved revision).

Note 7. The Eclipse EA500 is Aircraft Group approved for Reduced Vertical Separation Minimum (RVSM). All airplanes are equipped with RVSM capable dual air data system, pilot and co-pilot Primary Flight Displays, and Autopilot.

Each operator must obtain RVSM operating approval.

Note 8. The Eclipse EA500 incorporates integrated avionics systems using software-based line replaceable units (LRUs) which share a digital signal transmission bus. The avionics configuration of the Eclipse EA500 as delivered from production is critical to the proper operation of the cockpit instrumentation system. Modification to the LRU software supplied with the Eclipse EA500, replacement of an LRU with a different LRU, addition of new LRU, or alteration of an LRU interface could adversely affect the airworthiness of the certified product. Accordingly, no changes to the integrated avionics system can be made without coordination with EASA.

Note 9. For Model EA500 aircraft serial number 500-000001 through 500-000262, 500-000266 & 500-000267 must be maintained according to:

- Aircraft Maintenance Manual (AMM), No. 06-117751, latest revision
- Structural Repair Manual (SRM), No. 06-117755, latest revision
- Wiring Diagram Manual (WDM), No. 06-117753, latest revision
- Fault Isolation Manual (FIM), No. 06-117754, latest revision

For Model EA500 aircraft serial numbers 550-0263 through 550-0265, 550-0268 through 550-0280, 550-0282 through 550-0284 which incorporate Eclipse FAA approved Modification Bulletin, MB 550-99-001 and Model EA500 aircraft serial numbers 550-1001 and higher must be maintained according to:

- Aircraft Maintenance Manual (AMM), No. 06-123838, latest revision
- Structural Repair Manual (SRM), No. 06-117755, latest revision
- Wiring Diagram Manual (WDM), No. 06-117753, latest revision
- Fault Isolation Manual (FIM), No. 06-117754, latest revision

Note 10. Any modification or changes in cockpit configuration which may affect aircrew workload, cockpit noise level or day/night operational capabilities must be approved by EASA.

Note 11. All pilots operating an Eclipse Aerospace EA500 that is registered in an EASA Member State must be trained and qualified in accordance with the Eclipse Aerospace training program or equivalent training program that is Accepted/Approved by the Joint Operations Evaluation Board (JOEB) or Civil Aviation Authority having jurisdiction.

Note 12. The Eclipse Model EA500 fuselage incorporates a specialized joining process and structural optimization that may not be compatible with traditional repair methodologies. Incorporation of repairs using traditional methods could adversely affect airworthiness. Accordingly, major repairs to fuselage structure that are not listed in EAI Structural Repair Manual (SRM) No. 06-117755 must be coordinated with EASA.

SECTION ADMINISTRATIVE

I. Acronyms & Abbreviations

- CAI Certification Action Item
- CRI Certification Review Item
- IFR Instrumental Flight Rules
- VFR Visual Flight Rules

II. Type Certificate Holder Record

Up to	Type Certificate Holder
28 Oct 2009	Eclipse Aviation Corporation 2503 Clark Carr Loop SE Albuquerque, New Mexico 87106 United States of America
08 Dec 2020	Eclipse Aerospace, Inc. (a subsidiary of ONE Aviation) 2503 Clark Carr Loop SE Albuquerque, New Mexico 87106 United States of America
Present	Eclipse Aerospace, Inc. (a subsidiary of AML Global Eclipse) 43W514 US Route 30 Sugar Grove, IL 60554 United States of America

III. Change Record

Issue	Date	Changes	TC Issue No. & Date
Issue 01	21 Nov 2008	Initial Issue	Initial Issue, 21 Nov 2008
Issue 02	28 Oct 2009	Added and changed company names	
Issue 03	21 May 2010	AFM Supplement for commercial operations added	
Issue 04	21 Dec 2012	Section III.12: reference to Note 5 deleted; Section III.14: CG diagram; Section IV: AFM approval clarification; Section V: Note 5 deleted; Editorial Changes; TC Holder address update	
Issue 05	20 Nov 2015	Template update and changes due to EASA P/N 0010037102: – Section A.II – 2.5: added ELOS F-30 – Section A.II – 2.7: added OSD Certification Basis – Section A.III – updated para 1, 3 and 19 to include new S/Ns – Section A.IV – updated to include new S/Ns – Section A.V – new section for the Operational Suitability Data (OSD) – Section A.VI – Note 2, 3 and 9 updated to include new S/Ns. Added Note 11	
Issue 06	18 Mar 2016	Section A.V – included reference to FCD document (EASA P/N 0010040046) Changes due to EASA P/N 0010042129: – Section A.III – updated para 3 and 19 to include new Modification Bulletins and S/N batches. – Section A.IV – updated to include new Modification Bulletins and S/N batches. – Sections A.IV and A.VI - Updated EASA AMM Supplement	
Issue 07	12 Apr 2016	Section A.IV – updated to include mandatory Temporary Revisions for the FAA Approved AFMs (according to the EASA Approval #10057615). Header and Footer format fix.	
Issue 08	19 Apr 2021	Updated TCH address after becoming subsidiary of AML Global Eclipse Group	

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