

Issue 3, 23 December 2011

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SECTION 1: GENERAL, Basic APM 20 Design**A. General**

- | | |
|--|---|
| 1. a) Type: | APM 20 |
| b) Variant: | Not Applicable |
| 2. Airworthiness Category: | Normal Category |
| 3. Type Certificate Holder: | Issoire-Aviation
Aérodrome d'Issoire
BP1
63500 Issoire
FRANCE |
| 4. Manufacturer: | Issoire-Aviation
Aérodrome d'Issoire
BP1
63500 Issoire
FRANCE |
| 5. (reserved) | |
| 6. DGAC-F Type Certification Date: | 17-May-1999 |
| 7. EASA Type Certification Date: | 1-June-2007 (reissue for EASA) |
| 8. The EASA Type Certificate replaces DGAC-France Type Certificate No.191. | |

B. Certification Basis

- | | |
|---|--|
| 1. Reference Application Date for determining the applicable requirements : | 25-December-1995 |
| 2. (Reserved) | |
| 3. (Reserved) | |
| 4. Certification Basis: | As defined in CRI-A1 |
| 5. Airworthiness Requirements: | JAR-VLA 26 th April 1990 Change 1
with VLA 91/1 and VLA 92/1 amendements |
| 6. Requirements elected to comply: | None |
| 7. EASA Special Conditions: | None |
| 8. EASA Exemptions: | None |
| 9. EASA Equivalent Safety Findings: | CRI-B3 : Spinning (JAR VLA §221). |
| 10. EASA Environmental Standards : | CS 36 (ICAO Annex 16, volume I, Chapter 10)
(refer to Section 3 Note 1) |

C. Technical Characteristics and Operational Limitations

- | | |
|-----------------|---|
| 1. (Reserved) | |
| 2. Description: | Single-engine, composite (mainly carbon-Epoxy), two-place, low-wing airplane, conventional tail, fixed tricycle landing gear. |

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3. Equipment: The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the aircraft for airworthiness certification.
The applicable EASA approved Flight Manual is required for all operations. Included within the Flight Manual is information in the form of supplements which cover installation of optional systems and equipment that are necessary for safe operation of the aircraft.
4. Dimensions: Refer to Airplane Flight Manual
5. Engines: Rotax 912 A2

The EASA type certification standard includes that of Austro control TC N° TW 8/89 , based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.
- 5.1 Engine Limits: Maximum take-off 5800 rpm (80 HP) during 5 minutes
Maximum continuous 5500 rpm (78 HP)
6. Propellers and propeller limits: EVRA type 164/152/116

The propeller has been EASA type certified 8 June 1999 under TC EASA.P.110

Nominal diameter : 1.64 m
Number of blades : 2
Maximum Static RPM at sea level : 2 552 RPM
7. Fluids:
- 7.1 Fuel: Unleaded automobile fuel (DIN 51603,0,NORM 1101) or AVGAS 100LL
- 7.2 Oil: API SF ou SG type (S.A.E. 10W40 for instance)
- 7.3 Coolant: « EVANS NGP+ » or equivalent (Refer to Airplane Maintenance Manual and Airworthiness Directive F-2005-205)
8. Fluid capacities:
- 8.1 Fuel: One structural tank
Total capacity 68 litres
Total usable capacity 65 litres
- 8.2 Oil: Maximum: 3 litres.
9. Air Speeds:
- | | | |
|----------|-------------------------------------|---------------------|
| V_{NE} | (Never Exceed speed) | 135 KIAS (250 km/h) |
| V_d | (Maximum design speed) | 150 KIAS (277 km/h) |
| V_{NO} | (Maximum structural cruising speed) | 108 KIAS (200 km/h) |
| V_A | (Manoeuvring speed) | 108 KIAS (200 km/h) |
| V_{FE} | (Maximum Flap Extended) | 81 KIAS (150 km/h) |
10. Maximum Operating Altitude: Refer to Airplane Flight Manual
11. Operational Capability: Day VFR
12. Maximum Masses:
- | | |
|------------------|--------|
| Maximum Takeoff: | 634 kg |
| Maximum Landing: | 634 kg |

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If modification FM25-09 is installed :

Maximum Takeoff:	655 kg
Maximum Landing:	655 kg

13. Centre of Gravity Range:

Forward Limit:	20% of cma aft of datum at 634 kg (at 655 kg if mod FM25-09 is installed)
Aft Limit:	26.3% of cma aft of datum at 634 kg (at 655 kg if mod FM25-09 is installed)

Cma = 1.105 m

Straight line variation between points given.

- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|------------|------|----------|------|------------|----------|-------------------------|-------|----------|--|------|----------|----------------------------|----|----------|--|------|----------|-------------------------|----|--------|--|----------|------------|--|---------|----------|
| 14. Datum: | Wing leading edge at 1.96 m for aircraft centerline. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15. Design Limit Load Factors: | <table> <tr> <td>Flaps up</td> <td>+3.8</td> </tr> <tr> <td></td> <td>-1.9</td> </tr> <tr> <td>Flaps down</td> <td>+2</td> </tr> <tr> <td></td> <td>-0</td> </tr> </table> | Flaps up | +3.8 | | -1.9 | Flaps down | +2 | | -0 | | | | | | | | | | | | | | | | | | | |
| Flaps up | +3.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | -1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flaps down | +2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | -0 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16. Levelling Means: | Fuselage edge at canopy rail junction at 6°25 pitch down attitude. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17. Minimum Flight Crew: | 1 (Pilot) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18. Maximum Passenger Seating Capacity: | Two at Station +0.22 to 0.28 m | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19. Baggage / Cargo compartment: | Maximum baggage compartment 20 kg at +1.020 m. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20. Wheels and Tires: | Refer to Airplane Flight Manual | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21. Control Surface movements: | <table> <tr> <td>Elevator:</td> <td>Up</td> <td>25° ± 2°</td> </tr> <tr> <td></td> <td>Down</td> <td>15° ± 2°</td> </tr> <tr> <td>Rudder relative to fin:</td> <td>Right</td> <td>30° ± 2°</td> </tr> <tr> <td></td> <td>Left</td> <td>30° ± 2°</td> </tr> <tr> <td>Ailerons relative to wing:</td> <td>Up</td> <td>25° ± 2°</td> </tr> <tr> <td></td> <td>Down</td> <td>15° ± 2°</td> </tr> <tr> <td>Flaps relative to wing:</td> <td>Up</td> <td>0/-4 °</td> </tr> <tr> <td></td> <td>Take-off</td> <td>12.5° ± 2°</td> </tr> <tr> <td></td> <td>Landing</td> <td>25° ± 2°</td> </tr> </table> | Elevator: | Up | 25° ± 2° | | Down | 15° ± 2° | Rudder relative to fin: | Right | 30° ± 2° | | Left | 30° ± 2° | Ailerons relative to wing: | Up | 25° ± 2° | | Down | 15° ± 2° | Flaps relative to wing: | Up | 0/-4 ° | | Take-off | 12.5° ± 2° | | Landing | 25° ± 2° |
| Elevator: | Up | 25° ± 2° | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Down | 15° ± 2° | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rudder relative to fin: | Right | 30° ± 2° | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Left | 30° ± 2° | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ailerons relative to wing: | Up | 25° ± 2° | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Down | 15° ± 2° | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flaps relative to wing: | Up | 0/-4 ° | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Take-off | 12.5° ± 2° | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Landing | 25° ± 2° | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22. Serial Numbers Eligible: | from 001 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

D. Operating and Service Instructions

Maintenance Manual MDE 01 with section 4 approved by DGAC-F : Issue 2 dated on January 1999 or all further EASA approved version.

Aircraft Flight Manual MDV 01 approved by DGAC-France : Issue 1 dated on January 1999 or all further EASA approved version. If modification FM25-09 is installed, Aircraft Flight Manual MDV 01 approved by EASA : Issue 1 revision 4 dated on December 2009 or all further EASA approved version.

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SECTION 2: GENERAL, Basic APM 30 Design**A. General**

- | | |
|----------------------------------|---|
| 1. a) Type: | APM 30 |
| b) Variant: | Not Applicable |
| 2. Airworthiness Category: | Normal Category |
| 3. Type Certificate Holder: | Issoire-Aviation
Aérodrome d'Issoire
BP1
63500 Issoire
FRANCE |
| 4. Manufacturer: | Issoire-Aviation
Aérodrome d'Issoire
BP1
63500 Issoire
FRANCE |
| 5. (reserved) | |
| 6. (reserved) | |
| 7. EASA Type Certification Date: | 1-June-2007 |
| 8. (reserved) | |

B. Certification Basis

- | | |
|---|---|
| 1. Reference Application Date for determining the applicable requirements : | 8 th April 2005 |
| 2. (Reserved) | |
| 3. (Reserved) | |
| 4. Certification Basis: | As defined in CRI-A1 |
| 5. Airworthiness Requirements: | CS-VLA Original revision |
| 6. Requirements elected to comply: | None |
| 7. EASA Special Conditions: | CRI-A2 third seat
CRI-A3 night VFR |
| 8. EASA Exemptions: | None |
| 9. EASA Equivalent Safety Findings: | CRI-D1 Emergency exits |
| 10. EASA Environmental Standards : | CS 36 (ICAO Annex 16, volume I, Chapter 10) |

C. Technical Characteristics and Operational Limitations

- | | |
|-----------------|---|
| 1. (Reserved) | |
| 2. Description: | Single-engine, composite (mainly carbon-Epoxy), three-place, low-wing airplane, conventional tail, fixed tricycle landing gear. |

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3. Equipment: The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the aircraft for airworthiness certification.
- The applicable EASA approved Flight Manual is required for all operations. Included within the Flight Manual is information in the form of supplements which cover installation of optional systems and equipment that are necessary for safe operation of the aircraft.
4. Dimensions: Refer to Airplane Flight Manual
5. Engines: Rotax 912 S2
- The EASA type certification standard includes that of Austro Control TC N° TW 9-ACG, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.
- 5.1 Engine Limits: Maximum take-off 5800 rpm (100 HP) during 5 minutes
Maximum continuous 5500 rpm (93HP)
6. Propellers and propeller limits: EVRA model 182/171/1005
- The propeller has been EASA type certified 20 April 2007 under TC EASA.P.110.
- Nominal diameter : 1.82 m
Number of blades : 2
Maximum Static RPM at sea level : 2 386 RPM
7. Fluids:
- 7.1 Fuel: Unleaded automobile fuel (DIN 51603 NORM 1101) or AVGAS 100LL
- 7.2 Oil: API SG type (S.A.E. 10W40 for instance)
- 7.3 Coolant: « BASF Glysantin Antikorrosion » or equivalent (Refer to Airplane Flight Manual)
8. Fluid capacities:
- 8.1 Fuel: One structural tank
Total capacity 72litres
Total usable capacity 69 litres
- 8.2 Oil: Maximum: 3 litres
9. Air Speeds:
- | | | |
|----------|-------------------------------------|---------------------|
| V_{NE} | (Never Exceed speed) | 143 KIAS (265 km/h) |
| V_{NO} | (Maximum structural cruising speed) | 113 KIAS (210 km/h) |
| V_A | (Manoeuvring speed) | 113 KIAS (210 km/h) |
| V_{FE} | (Maximum Flap Extended) | 95 KIAS (176 km/h) |
10. Maximum Operating Altitude: Refer to Airplane Flight Manual
11. Operational Capability: Day & night VFR

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12. Maximum Masses:

Maximum Takeoff:	708 kgs
Maximum Landing:	708 kgs

If modification FM25-09 is installed :

Maximum Takeoff:	736 kg
Maximum Landing:	736 kg

13. Centre of Gravity Range:

- | | |
|-------------------------|---|
| (1) Forward Limit: | 15% of cma aft of datum at 502 kg |
| (2) Intermediate limit: | 16.7% of cma aft of datum at 667 kg (at 695 kg if mod FM25-09 is installed) |
| (3) Intermediate limit: | 19% of cma aft of datum at 708 kg (at 736 kg if mod FM25-09 is installed) |
| (4) Aft Limit: | 26.5% of cma aft of datum at 708 kg (at 736 kg if mod FM25-09 is installed) |

Cma = 1.105 m

Straight line variation between points given.

14. Datum: Wing leading edge at 1.96 m for aircraft centerline.

15. Design Limit Load Factors:	Flaps up	+3.8
		-1.9
	Flaps down	+2
		-0

16. Levelling Means: Fuselage edge at canopy rail junction at 6°25 pitch down attitude.

17. Minimum Flight Crew: 1 (Pilot)

18. Maximum Passenger Seating Capacity:	Two at Station +0.202 to 0.226 m
	One at station +1.018 to 1.033

19. Baggage / Cargo compartment: Maximum baggage compartment 20 kg at +1.020 m

20. Wheels and Tires: Refer to Airplane Flight Manual

21. Control Surface movements:	Elevator:	Up	25° ± 2°
		Down	15° ± 2°
	Rudder relative to fin:	Right	30° ± 2°
		Left	30° ± 2°
	Ailerons relative to wing:	Up	25° ± 2°
		Down	15° ± 2°
	Flaps relative to wing:	Up	0/-4 °
		Take-off	12.5° ± 2°
		Landing	25° ± 2°

22. Serial Numbers Eligible: from 001

D. Operating and Service Instructions

EASA approved Maintenance Manual MDE 02 : Original Issue dated May 2007 or all further EASA approved version.

EASA approved Aircraft Flight Manual MDV 02 : Issue 2 dated on May 2007 or all further EASA approved version. If modification FM25-09 is installed, Aircraft Flight Manual MDV 02 approved by EASA : Issue 2 revision 1 dated on October 2009 or all further EASA approved version.

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SECTION 3: CHANGE RECORD

Issue 1: June 1, 2007. Original Issue

Issue 2: October 22, 2009. This issue corrects APM20 coolant and baggage/cargo compartment arm.

Issue 3: December 23, 2011. This issue incorporates the modification FM25-09 which increases the Maximum Takeoff Weight of the APM20 and APM30 models.

Note : FM25-09 is applied to all Aircraft delivered after SN°29.