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| ENG 1.4.015 |  CAAI | ENG Handbook |
| Airplane Flight Manual Approval | | Revision 0 |
| | | 09 DEC 2014 |

1. Objective

The objective of this procedure is to define:

- 1.1. The information contained in the AFM that must be approved by CAAI.
- 1.2. The information contained in the AFM, which is not approved by CAAI.
- 1.3. CAAI's method and activity in approving the applicable "CAAI Approved" Parts of the AFM.

2. General

- 2.1. Regulation 1 of the Air Navigation Regulations (Procedures for Documentation of Aircraft and Aircraft parts), 1977 – hereinafter – the ANR.DOC)) defines the relevant airworthiness requirements – the standards with which the design data of an aircraft must comply. An applicant for a Type Certificate, Supplemental Type certificate, Provisional Type Certificate, or Certificate of airworthiness in the 'experimental' category must demonstrate compliance of the design data with applicable airworthiness requirements, as part of the certification process (e.g. reg. 5, 8, 9 etc. of ANR.DOC).
- 2.2. In accordance with ICAO recommendations regarding the adoption of airworthiness standards issued by other member states whenever possible in order to foster uniformity and harmonization of standards, the CAAI has adopted airworthiness codes approved and used by the FAA (for aeroplanes, rotorcraft and manned free balloons), EASA (for Gliders), and the UK CAA (for Ultralight aircraft) in ANR.DOC . These different codes of airworthiness are listed in the abovementioned "airworthiness requirements" definition in ANR.DOC reg. 1, and serve as the

| | | |
|--|--|--------------|
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| | | 09 DEC 2014 |

standards against which the CAAI shall evaluate any application for the certificates mentioned in section paragraph 2.1 above.

2.3. Part of the airworthiness requirements listed above is the requirement for an aircraft AFM. Each of these codes of airworthiness requirements requires the applicant for the abovementioned certificates to furnish the CAAI with an Aircraft Flight Manual containing operating limitations, normal and abnormal procedures and emergency procedures necessary for safe operation, performance information and loading information, as applicable. The following sections (listed by aircraft type) from the airworthiness codes listed in the "airworthiness requirements" contain the provisions requiring the applicant to provide the CAAI with an AFM, and the minimum information that must be contained in the AFM and approved by the CAAI :

- 2.3.1. For Aircraft certified under FAA FAR Part 23 - section 23.1581 through 23.1589;
- 2.3.2. For Aircraft certified under FAA FAR Part 25 - section 25.1581 through 25.1587;
- 2.3.3. For Rotorcraft certified under FAA FAR Part 27 - section 23.1581 through 23.1589;
- 2.3.4. For Rotorcraft certified under FAA FAR Part 29 - section 29.1581 through 25.1589;
- 2.3.5. For Manned Free Balloons certified under FAA FAR Part 31- section 31.81;
- 2.3.6. For Gliders certified under EASA CS22 - section 22.1581 through 23.1589;
- 2.3.7. For Ultralight aircraft certified under Section S of BCAR – S1581, S1583, S1585;

| | | |
|--|--|--------------|
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| | | 09 DEC 2014 |

2.3.8. For Light Sport Aircraft certified under Consensus Standard – ASTM F2746: Standard Specification for Pilot's Operating Handbook for Light Sport Airplane.

2.3.9. **CAAI Approved Information:** Each part of the Airplane Flight Manual containing information prescribed in the airworthiness requirements listed above, according to the aircraft's type and certification, must be approved by the CAAI.

2.4. **CAAI Unapproved Information:** the following additional information , which need not be approved by CAAI, must be included in the AFM -

2.4.1.1 Aircraft systems description;

2.4.1.2 Weight and Balance and loading instruction (except Weights and C.G. limitations which are presented in the Limitations Section).

2.4.1.3 Any other information included in the AFM by the Applicant.

2.5. Further guidance regarding AFM content, structure and format: the following documents describe the means acceptable to the CAAI - but not the only means - for demonstrating compliance with the applicable regulation(s) for the specific airplane categories:

2.5.1. In the case of Transport Category airplanes type certificated under FAR 25, FAA Advisory Circular AC 25.1581-1 identifies the information that must be provided in the AFM and provides guidance as to the form and content of the approved portion of an AFM.

2.5.2. Likewise, General Aviation Manufacturer's Association (GAMA) Specification No. 1 provides similar guidance for AFMs of airplanes certificated in the 'normal, utility, acrobatic and commuter' categories under FAR 23.

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|--|--|--------------|
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| Airplane Flight Manual Approval | | Revision 0 |
| | | 09 DEC 2014 |

3. References

- 3.1. Regulatory requirements:
 - 3.1.1. 14CFR Parts 23, 25, 27, 29 sections xx.1581 through xx.1589;
 - 3.1.2. 14CFR Part 31 section 31.81;
 - 3.1.3. EASA CS22 sections 22.1581 through 22.1589;
 - 3.1.4. UK BCAR Section S – S1581, S1583, S1585;
 - 3.1.5. ASTM F2746: Standard Specification for Pilot's Operating Handbook for Light Sport Airplane.
- 3.2. Guidance material:
 - 3.2.1. FAA Advisory Circular AC 25.1581-1;
 - 3.2.2. General Aviation Manufacturer's Association (GAMA) Specification No. 1.

4. Method

- 4.1. The AFM shall be furnished by the applicant to be reviewed by CAAI Engineering Department.
- 4.2. Additional documents to be furnished by the applicant and used in the CAAI review for specific cases:
 - 4.2.1. In the case of an STC, amended TC, Experimental Certificate of Airworthiness, or other modification to an existing aircraft, the submitted AFM will be reviewed in context of the aircraft's original approved AFM, TCDS, and other documents as applicable.
 - 4.2.2. In case of a foreign TC validation, the AFM approval of the state of original certification will also be reviewed.
- 4.3. CAAI approvable sections of the AFM shall be approved by the Head of Engineering Department - using CAAI Form # KA-130.

| | | |
|--|--|--------------|
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- 4.4. Upon receipt of the AFM for CAAI approval, The AFM shall be reviewed by the CAAI Engineering test pilot or flight sciences engineer, who shall verify that: -
 - 4.4.1. The AFM format complies with the requirements listed in the applicable documents as referenced in section 3 of this procedure (including the guidance provided in FAA AC and GAMA specification, where applicable);
 - 4.4.2. The AFM contains a means for recording the Incorporation of revisions and amendments;
 - 4.4.3. Each part of the AFM that is CAAI approved is segregated, identified and clearly distinguished from each unapproved part of the AFM;
 - 4.4.4. The units used in the AFM are the same as those marked on the appropriate instruments and placards. Multiple scales may be used on AFM charts to show different units;
 - 4.4.5. All AFM operational airspeeds, unless otherwise specified, are presented as Indicated Airspeeds.
- 4.5. Changes to AFM - Approval of changes to an AFM shall be handled in the same manner as the approval of original manuals.
 - 4.5.1. Each revised page must bear a revision date or symbol, so that revisions may be properly identified.
 - 4.5.2. Changes to AFM submitted by other than the TC Holder, can be accomplished by a new AFM or by the addition of an AFM Supplement, approved by the process described herein for AFMs.
- 4.6. Changes to the limitation section of the AFM resulting from an introduction of Design Changes to a Type Certificate Aircraft.

| | | |
|--|--|--------------|
| ENG 1.4.015 |  CAAI | ENG Handbook |
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- 4.6.1. The limitations section of the AFM must be amended whenever a design change affecting that section has been introduced.
- 4.6.2. The amendment may be effected by a Service Bulletin or by an Airworthiness Directive (AD).
- 4.6.3. Notification to FAA and other Foreign Certifying Authorities: Whenever the design change was not processed as an AD, CAAI shall ensure that such changes are provided to the applicable FAA Directorates, and to any other relevant foreign certifying authority for further processing by that authority, as detailed in CAAI procedure ENG 4.0.016 Introduction of Design Changes to Type Certificated Aircraft.
- 4.7. Additional appendixes of AFM (where applicable)
 - 4.7.1. Configuration Deviation List (CDL)
 - 4.7.1.1 Aircraft certificated under the relevant provisions of FAR 25 or CAR 4b and intended for use under the operating rules of chapters 8, 12 and 13 of Air navigation Regulations (operation of aircraft and ruels of flight), 1981 may be approved for operations with missing secondary airframe and engine parts under an amendment to the Type Certificate. These missing elements are documented in a Configuration Deviation List (CDL), which is then incorporated into the AFM as a separate appendix.
 - 4.7.1.2 The applicant’s developed CDL must be reviewed and approved by the Engineering department and coordinated with the Aircraft Inspection Branch and Operations Department. The CDL will be incorporated into the AFM as a separate appendix.
 - 4.7.1.3 The CDL Appendix to the AFM will:
 - 4.7.1.3.1. Clearly define “that the limitations in the basic manual must be followed except as noted in this Appendix”.

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|--|--|--------------|
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- 4.7.1.3.2. Include any and all flight operations restrictions or limitations, as applicable, associated with each missing secondary airframe and engine parts.
- 4.7.1.3.3. Itemize the configuration deviations in a standardized format, which will be approved by the CAAI Engineering Department.
- 4.7.1.3.4. Clearly indicate that a placard of the associated limitation(s) will be affixed in the cockpit, in clear view of the pilot-in-command, and other appropriate crew member(s).
- 4.7.1.3.5. Indicate that no more than one part itemized on the CDL may be missing for continuing flight, unless consideration has been given for the effects of specific combinations of missing items, and these designated combinations are provided for on the CDL.

4.7.2. Least-Risk Bomb Location

In accordance with ICAO's safety guidance for transport category aircraft, the AFM will specify a least-risk location on the airplane, which shall be identified, where a bomb or other explosive device may be placed, to minimize the effects on the airplane in the case of detonation.

5. Task Outcomes

- 5.1. The applicant shall be notified of any findings/rejections/required corrections.
- 5.2. The AFM approval process is finalized upon CAAI Engineering Department Manager's signing the AFM cover page.
- 5.3. Future Activities
- 5.4. A copy of the signed cover page is retained in CAAI files.