



Advisory Circular

AC 183-2(0)

NOVEMBER 2001

AUTHORISED ENGINEERING REPRESENTATIVES (AERs)

CONTENTS

1. References	1	14. Qualification requirements	7
2. Purpose	1	15. Transition arrangements	8
3. Status of this AC	1	16. Further information	8
4. Abbreviations	2		
5. Background	2	1. REFERENCES	
6. Responsibilities of an AER	3	CASR Parts 21 through 35.	
7. Application	4	CASR Part 183.	
8. Selection and appointment	5	Advisory Circulars for CASR Part 11.	
9. Limitations	6	2. PURPOSE	
10. Conditions	6	The purpose of this Advisory Circular	
11. Procedures Manuals	6	(AC 183-2) is to provide assistance to	
12. Audit and renewal	6	applicants seeking authorisation as a	
13. Training	7	Authorised Engineering Representative	
		(AER) of CASA, and to specify the	
		functional scope of the work to be carried	
		out by AERs.	
		3. STATUS OF THIS AC	
		This is the first AC to be issued on this	
		subject.	

Advisory Circulars are intended to provide recommendations and guidance to illustrate a means but not necessarily the only means of complying with the Regulations, or to explain certain regulatory requirements by providing interpretative and explanatory material.

Where an AC is referred to in a 'Note' below the regulation, the AC remains as guidance material.

ACs should always be read in conjunction with the referenced regulations.

4. ABBREVIATIONS

AC	Advisory Circular
AER	Authorised Engineering Representative
AINDT	Australian Institute for Non-Destructive Testing
AOC	Air Operator's Certificate
APMA	Australian Parts Manufacturer Approval
AS	Australian Standard
ATSO	Australian Technical Standard Order
CAAP	Civil Aviation Advisory Publication
CAR	Civil Aviation Regulation
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulation
ESB	Engineering Support Branch
PC	Production Certificate
STC	Supplemental Type Certificate
TC	Type Certificate

5. BACKGROUND

5.1 As part of CASA's policy of empowering industry to conduct specified functions, the regulations allow for the use of authorised representatives. CASR Part 183 provides the authorisation for those representatives.

5.2 This AC provides information on:

- (a) how to apply to CASA to become an Authorised Engineering Representative (AER) who can approve:
 - (i) the type design data associated with the type certification of aircraft and aeronautical products; and
 - (ii) the design of modifications, repairs and related activities;
- (b) the prerequisite qualifications to enable an application to be processed; and
- (c) procedural matters.

5.3 As representatives of CASA, AERs may approve engineering, flight test and process specification data within particular categories under their own or their company's auspices. If unable or unwilling to approve the data, an AER may recommend approval of, and seek approval from, CASA. Also, AERs may make statements of findings of compliance with specific regulations, subject to prescribed limitations as specified by CASA, which will be considered by CASA when issuing Type Certificates (TCs) or Supplemental Type Certificates (STCs). This is done using CASA Form 979 *Statement of Compliance with the Civil Aviation Regulations* or in another form acceptable to CASA.

5.4 This AC prescribes the requirements for the issue of authorisations to individuals, and to persons employed by organisations to act in the capacity of AERs with respect to the type certification requirements for aircraft and aeronautical products under CASR Parts 21 through 35 and modifications and repairs to those products.

5.5 The subclasses of AER are the following:

- (a) structural;
- (b) powerplant;
- (c) mechanical systems and equipment;
- (d) avionic systems and equipment;
- (e) engine;
- (f) propeller;
- (g) flight analysis; and
- (h) flight test pilot.

5.6 This AC should be read in conjunction with Advisory Circulars related to CASR Part 11 *Regulatory Administrative Procedures* which contain many of the formal procedural requirements and responsibilities. The functions that an AER may perform are contained in CASR Part 21 *Certification and airworthiness requirements for aircraft and parts*.

6. RESPONSIBILITIES OF AN AER

6.1 AERs are representatives of CASA and act on behalf of CASA when finding compliance with specific airworthiness regulations. An AER must not permit a company's commercial pressures and interests to influence determinations when performing the compliance-finding function.

6.2 The function of finding compliance with the regulations is separate from the actual preparation of reports, conducting tests, etc. Design and development work is solely the responsibility of the applicant. CASA involvement through AERs is only when a type-certification activity is conducted.

6.3 Any independent checking of data that has been prepared by an AER to support the findings of compliance with regulations is at the discretion of the AER. The criticality of the item and the uniqueness of the analysis are important considerations. These requirements may be discussed with the controlling CASA Engineering Support Branch (ESB) office. Any data submitted to CASA for checking is subject to CASA's priorities and recovery of costs other than for data assessed by CASA as a monitoring or surveillance activity.

6.4 AERs are indemnified by CASA for the actions they undertake on behalf of CASA when finding compliance with the CASRs in accordance with the procedures contained in a Civil Aviation Advisory Publication (CAAP ADMIN (1)) *Delegations and Authorisations*.

6.5 CASA may review data-supporting statements of compliance by an AER in accordance with an agreed certification plan when coordinating a TC or STC project, depending on the knowledge and experience CASA has of the person(s) who approved the data. However, if it is subsequently determined that compliance has not been shown, CASA may take appropriate regulatory action.

7. APPLICATION

7.1 Any person with qualifications and experience as outlined in Section 14 may apply for appointment as an AER (other than a CASA or other government employee). Application for authorisation, whether as an individual or as an employee of an organisation, should be initiated by a letter to the CASA ESB office nearest to the area in which you reside or have your primary place of business. Contact details for these offices are given in AC 11.1 *Advisory Circulars — Guidelines*. The application letter should address the authorisation sought, the qualifications and experience of the applicant, and include the evidence and statements as set out in this AC.

7.2 Applications by prospective independent AERs

As an applicant seeking authorisation on your own behalf, your application must be accompanied by:

- (a) evidence relevant to the qualifications and experience for the authorisation sought, on aircraft or aeronautical products of the type and complexity for which you are seeking authorisation. This could be references from aviation industry organisations (not private persons), such as a design or maintenance organisation, manufacturer, or holder of an Air Operator's Certificate; and
- (b) supplemental statements to substantiate that you meet all of the following:
 - (i) the general qualifications specified in Section 14; and
 - (ii) details and examples of your work regarding your specialised experience appropriate to the function(s) for which authorisation is sought.

7.3 Applications for prospective AERs within organisations

Applications submitted by an organisation on behalf of an employee must be accompanied by:

- (a) evidence relevant to the qualifications and experience of the person for whom the authorisation is sought;
- (b) supplemental statements from the organisation supporting the application which include the name, signature, and title of the person who will carry out the authorised function(s), and substantiate that the person meets all of the following:
 - (i) the general qualifications specified in Section 14; and
 - (ii) details and examples of the applicant's work carried out and any specialised experience of the applicant, appropriate to the function(s) for which authorisation is sought; and
 - (iii) organisation procedures acceptable to CASA which positively ensure that only appropriately qualified persons will carry out the authorised function(s);

- (c) a written statement from the organisation confirming that reference material, tools and equipment belonging to the organisation are available for use by the applicant if he or she becomes an AER.

7.4 Any reference letters provided by aviation industry persons in support of individual AER applicants or to persons within organisations who will carry out authorised functions must:

- (a) identify the period of time the person/applicant has worked directly with CASA or under the direct supervision of other AERs in connection with the type of work for which the authorisation is sought; and
- (b) provide details of the applicant's experience particularly with respect to the engineering functional areas sought.

7.5 Additional information concerning qualification criteria may be obtained from any CASA ESB office.

7.6 Subsequent applications to expand the scope of an AER authorisation are to be submitted to the controlling ESB with any additional supporting data required beyond that of the initial application.

8. SELECTION AND APPOINTMENT

8.1 The controlling CASA ESB office will evaluate an applicant's qualifications and check personal references as appropriate. Additionally, each individual applicant and each person within an organisation who will carry out authorised functions will be subjected to a personal interview prior to appointment.

8.2 Letters and application forms will be acknowledged by the controlling CASA ESB office.

8.3 An application to become an independent AER will be assessed by the CASA ESB as to your proposed performance and the administration procedures to be satisfied such that the authorisation sought may be carried out satisfactorily.

8.4 An application to become an AER within an organisation will be assessed by the CASA ESB who will also assess the organisation's procedures as they relate to the performance and administration of the company's AER(s), in order to be satisfied that the authorisation sought may be carried out satisfactorily within the organisation.

8.5 Upon CASA's satisfactory determination that all of the appropriate requirements are met, the controlling ESB office will prepare, in an approved form, a Certificate of Authorisation, which will identify you as an AER of CASA, either as an individual or as part of an organisation. Authorised functions will be stated on the certificate. However, when space limitations preclude the listing of all authorised functions, the Certificate of Authorisation may reference an attachment that identifies the limits of authority in more detail. The certificate will be issued by the controlling CASA ESB office.

8.6 Organisations who have AERs in their employ must provide each AER with access to a copy of the organisation's procedures relating to that person's authorised function(s) and each person's limitations as appropriate.

8.7 Should the application be unsuccessful, you will be advised as to the reasons why the authorisation has been denied.

8.8 AERs will be issued with a photo identity card which will list the general authorisation(s) given by CASA.

9. LIMITATIONS

9.1 The authorisation may be limited to any definable part of the subject matter of a particular function according to the applicant's qualifications, knowledge and experience.

9.2 In the case of an independent AER, the authorised functions will be limited to products of the type and complexity for which the applicant is qualified.

9.3 In the case of an AER within an organisation, limitations will be prescribed, as appropriate, for each person within the organisation who will carry out the authorised functions. This applies to:

- (a) approved design organisations;
- (b) approved maintenance organisations;
- (c) holders of CASA production approvals, limited (except in the case of products) to products produced under the provisions of their CASA production approval, e.g. Production Certificate (PC), Production under Type Certificate only, Australian Parts Manufacturer Approval (APMA), or Australian Technical Standard Order Authorisation (ATSOA).

10. CONDITIONS

10.1 Conditions may be applied to an authorisation, for example:

- (a) only within the employ of a particular organisation;
- (b) only whilst a member of a particular society or association; or
- (c) necessary in the interests of safety.

11. PROCEDURES MANUALS

11.1 All AERs are to operate in accordance with CASA's *Authorised Engineering Representative Procedures Manual* and are advised to follow the type certification procedures expressed in CASA's ACs and procedures manuals.

11.2 An independent AER is not required to have an individual procedures manual. Note that design procedures are matters for the AER and are not subject to CASA assessment.

11.3 For an AER within an organisation, whether an employee or contractor, the AER will be required to operate within the appropriate sections of the organisation's manual as that manual relates to the performance and administration of the AER function. The organisation must supply a copy of the manual to CASA.

12. AUDIT AND RENEWAL

12.1 Unless otherwise terminated, appointments will be effective for a period not to exceed three years and may be renewed by the controlling CASA ESB office. CASA will notify holders of authorisations prior to 45 days before expiry.

12.2 Prior to consideration being given for re-appointment, an AER must:

- (a) show evidence of activity during the previous appointment; and
- (b) show that he or she has kept abreast of current regulatory policy and documentation.

12.3 A CASA Certificate of Authorisation, will be reissued by the controlling CASA ESB office upon a satisfactory recommendation from the manager of that office.

12.4 CASA will conduct audits on an AER's performance. This may be scheduled towards the end of a certificate renewal period.

13. TRAINING

13.1 CASA will provide or authorise free-of-charge training for all AERs upon appointment and on an on-going basis as necessary. All AERs, or persons who carry out AER functions in an organisation, will operate on a mentoring philosophy with the engineering staff of the CASA ESB office, until such time as it is established that the AER is fully familiar with CASA processes and procedures. AER's will be expected to pay for his/her accommodation expenses and transportation during formal training.

13.2 AER training will normally be limited to familiarisation with CASA's administrative procedures. Training in technical areas will not be provided since an AER applicant must have the necessary technical expertise as a prerequisite for appointment and to be able to maintain that expertise.

13.3 CASA may, on occasions, organise workshops conferences with AERs for a mutual exchange of ideas and knowledge.

14. QUALIFICATION REQUIREMENTS

14.1 A person is eligible to become an AER if the following requirements are met:

(a) Qualifications:

- (i) for engineering authorisations — tertiary qualifications acceptable for Membership of the Institution of Engineers Australia, e.g. a four-year full time engineering degree from a recognised institution;
- (ii) for flight analyst authorisation — appropriate knowledge and experience for the range of activities sought;
- (iii) for flight test pilot –
 - (A) commercial pilot's licence with an instrument rating;
 - (B) a minimum of 2000 hours pilot-in command, with at least 100 hours in the last 12 months;
 - (C) a minimum of 100 hours of appropriate experimental flight testing experience in the same certification category and in a similar type of aircraft for which the AER appointment is sought.

Note: The requirements of (B) and (C) are initial requirements, not annual requirements.

(b) Knowledge and experience:

- (i) Sound knowledge of Australian CARs, CAOs and CASRs, and the requirements and responsibilities of AERs;
- (ii) Successfully completed a tertiary-level airworthiness course, or demonstrates knowledge and experience of the subject matter;
- (iii) Familiarity with CASA engineering approval procedures, including a minimum of 12 months in the last three years working on design certification tasks;
- (iv) For engineering authorisations — a minimum of eight years experience in aeronautical design and directly related fields, including a minimum of 12 months in the last 3 years working on design tasks under the supervision of a design mentor; and
- (v) Possesses any other qualifications or experience necessary to carry out the particular function proposed in the person's application.

Note: If the applicant has an engineering degree or equivalent granted by a college of recognised standing, then each year of successfully completed coursework may be substituted, up to 4 years maximum credit, to meet the 8 year experience requirement of sub-subparagraph 13.1(b)(iv).

14.2 For certain authorisations, the applicant may not be required to hold the formal qualifications or the full extent of the experience mentioned in paragraph 14.1. At the discretion of the CASA ESB Manager, the person may be eligible to become an AER if they can demonstrate experience for the range of activities sought to enable that person to carry out the particular function proposed in the application.

15. TRANSITION ARRANGEMENTS

15.1 When CASR Part 183 is enacted, the following arrangements will apply to existing approval holders under regulation 35 of CARs 1988 and subregulation 21.31(1)(a) of CARs 1998.

15.2 All existing approvals will continue in force for a period of up to 3 years, which is the renewal cycle for authorisations under CASR Part 183. Prior to the end of the 3 year cycle, the approval holder may apply to CASA for a new authorisation as a CASR 183 AER, subject to CASA's renewal process described in Section 12.

15.3 Alternatively, current authorised persons will be entitled to apply to become an AER for regulatory function(s) appropriate to the person's qualifications and experience.

16. FURTHER INFORMATION

16.1 More detailed information on:

- (a) CASA's management of AERs; and
- (b) the functions and responsibilities of AERs;

is contained in CASA's *Authorised Engineering Representative's Procedures Manual* which is published on the CASA website at www.casa.gov.au.