
ADVISORY CIRCULAR

Subject: PREREQUISITES FOR ACCEPTANCE BY THE PRESIDENT OF CHIEF DESIGNER	Date: 2016-09-01	AC Number: 172-02	Version: 2.0
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NOTE: THIS ADVISORY CIRCULAR IS PUBLISHED TO PROVIDE REGULATORY INFORMATION AND DESCRIBE ACCEPTABLE MEANS OF COMPLIANCE WITH THE GENERAL AUTHORITY OF CIVIL AVIATION REGULATIONS (GACAR).

CHAPTER 1 – BACKGROUND

1.1 Purpose

This AC provides guidance and information on the prerequisites and process for acceptance by the President of the appointment of a Chief Designer of an Instrument Flight Procedure design organisation holding a certificate under GACAR Part 172.

1.2 Applicability

This Advisory Circular is applicable to all instrument flight procedure design organisations required to obtain and maintain a certificate under the provisions of GACAR Part 170 and Part 172.

1.3 Cancellation

This is the first official version of this Advisory Circular and it cancels no other Advisory Circulars.

1.4 Related Regulatory Provisions

GACAR Parts 1, 5, 7, 97, 170,172, 183 and 199.

1.5 Related Reading Material

- (a) Advisory Circular AC172-01;
- (b) ICAO Annexes 2, 4, 11 and 15;
- (c) ICAO PANS-OPS Doc 8168 Volume II (Construction of Visual and Instrument Flight Procedures);
- (d) ICAO Template Manual for Holding, Reversal and Racetrack Procedures, (Doc 9371);
- (e) ICAO Required Navigation Performance Authorization Required Procedure Design Manual (Doc 9905)
- (f) ICAO Collision Risk Manual (CRM) (Doc 9274);
- (g) ICAO Quality Assurance Manual for Flight Procedure Design (Doc 9906):
 - (1) Volume 1 – Flight Procedure Design Quality Assurance System;
 - (2) Volume 2 – Flight Procedure Designer Training;
 - (3) Volume 3 – Flight Procedure Design Software Validation;
 - (4) Volume 4 – Flight Procedures Design Construction (to be developed);
 - (5) Volume 5 – Validation of Instrument Flight Procedures; and
 - (6) Volume 6 – Flight Validation Pilot Training and Evaluation;
- (h) ICAO Instrument Flight Procedures Construction Manual (Doc 9368);
- (i) ICAO Continuous Descent Manual of Procedure (Doc 9931);
- (j) ICAO Performance Based Navigation Manual (Doc 9613); and
- (k) ICAO Manual on All Weather Operations (Doc 9365).

1.6 Definitions of Terms Used in this Advisory Circular

Affected parties should refer to Subpart A of GACAR Part 1 for a full listing of defined terms used in the new GACAR and specifically those related to safety management. This Advisory Circular introduces several additional definitions to aid in a common understanding of the ideas presented in this document. In cases where the definitions in this document differ from an identical term defined in GACAR Part 1, the definition in GACAR Part 1 will prevail when interpreting regulatory requirements.

1.7 Approval

This Advisory Circular has been approved for publication by the Assistant President, Safety, Security and Air Transport (SS&AT) Sector of the General Authority of Civil Aviation.

CHAPTER 2 - APPROVAL OF APPOINTMENT OF CHIEF DESIGNER

2.1 Background

2.1.1 The holder of a procedure design certificate is required under GACAR Part 172 to appoint a Chief Designer and that appointment must be accepted by the President. This AC sets out the information that is required to enable GACA SS&AT to consider an application for acceptance and the method GACA SS&AT may use to assess an application.

2.2 Applications

2.2.1 An application may be made by an instrument flight procedure design organisation that is the holder of a procedure design certificate, or has applied for a procedure design certificate.

2.2.2 The application, in writing, must include:

- The name of the instrument flight procedure design organisation
- The name of the person appointed as Chief Designer
- Details of the Chief Designer's relevant qualifications and experience.

2.2.3 The application must address all relevant requirements of GACA Part 172, and in particular should specifically detail the manner in which the certificate holder will ensure that the Chief Designer's functions and duties are performed.

2.3 Acceptance Process

2.3.1 GACA SS&AT will consider an application for approval in two stages.

2.3.2 An initial assessment will be made of the written application. If it is determined from that assessment that the Chief Designer possesses appropriate qualifications and experience, GACA SS&AT will proceed to the second stage, which will be an interview.

2.4 Assessment

2.4.1 GACA SS&AT will assess the Chief Designer's qualifications & experience in the following areas:

QUALIFICATIONS	
Basic qualification	Evidence of completion of an approved PANS-OPS course must be provided.
Advanced training	Evidence of advanced training must be provided. It is expected that a person appointed as Chief Designer will have completed a number of advanced or refresher courses after gaining the initial qualification. Details of attendance and participation in relevant conferences including papers presented etc., should be included.
RELEVANT EXPERIENCE	

Procedure design

Details of the Chief Designer's procedure design experience should be detailed.

The Chief Designer must demonstrate experience in the design of each type of procedure for which he/she will be responsible. Experience shall be assessed by GACA SS&AT as sufficient for the Chief Designer to competently fulfil the duties and function of a Chief Designer.

It is expected that the experience required for a Chief Designer to achieve competency would not normally be less than 2 years full-time experience in procedure design involving the design of a considerable number of individual procedures.

The assessment of design experience relative to a particular type of procedure will take into account the number of approaches that an "experienced" designer is likely to design in the normal course of his/her duties. For example, the number of ILS designs that an "experienced" designer may have completed may be limited, but, taken in the context of the designer's overall experience, may be assessed as satisfactory. Similarly a designer may be "experienced" in new types of procedures that because of their recent development only a relatively small number of procedures have been designed.

Design of procedures in other countries, and to other design criteria (e.g. TERPS), may be taken into account in the assessment of the Chief Designer's overall experience, but GACA SS&AT must be satisfied that the Chief Designer possesses detailed knowledge and experience in PANS-OPS procedures and design rules & procedures applicable in Saudi Arabia.

In the case of a Chief Designer who has extensive experience but limited recent experience GACA SS&AT may take into consideration appropriate recent training or other measures that the Chief Designer has taken to ensure that he is fully conversant with current procedure design and has adequate recent "hands-on" design experience.

Supervision & Management	The role of Chief Designer involves accepting responsibility for the work of other persons, including designers, and the effective management of an organisation and design work. A Chief Designer must demonstrate design experience in a supervisory role and/or equivalent supervisory or management experience in a related industry.
Relevant operational experience	It is expected that a Chief Designer will possess experience in a relevant operational environment enabling them to apply design criteria with due regard to operational circumstances. Suitable experience will include experience as an instrument rated pilot, or navigator on IFR operations. In cases where the Chief Designer does not have such experience, evidence must be produced to satisfy GACA SS&AT that equivalent other experience has been gained which enables the Chief Designer to properly fulfil all the duties of Chief Designer.
KNOWLEDGE (<i>the following criteria will normally be assessed during an interview</i>)	
Current procedure design practices	A Chief Designer must demonstrate a high standard of detailed knowledge in respect of instrument flight procedure design.
Saudi Arabian Operations	A Chief Designer must demonstrate a thorough knowledge of Saudi Arabian operating rules & procedures as contained in the GACARs and associated documents.
GACAR Part 172	The Chief Designer must demonstrate a thorough knowledge of GACAR Part 172 – Instrument Flight Procedure Design, including the requirements for: <ul style="list-style-type: none"> ·Staff qualifications & minimum experience ·Supervision of staff ·Recency
PANS-OPS	Detailed knowledge in the principles and practice of design in accordance with the rules contained in ICAO Doc 8168 is required.
Navigation Systems	A Chief Designer must demonstrate a thorough understanding of the principles of operation of relevant ground and space-based navigation systems.

<p>Company operating procedures.</p>	<p>At interview the Chief Designer must demonstrate that he is fully conversant with the organisation's operations manual. In general it is expected that except, in matters of detail, the Chief Designer can demonstrate this knowledge without reference to the operations manual.</p> <p>The Chief Designer must demonstrate detailed knowledge of all company operating procedures including:</p> <ul style="list-style-type: none"> ·Data management & control ·Verification of designs ·Record keeping ·Environmental requirements ·Publishing standards ·Validation requirements ·Procedure maintenance
<p>Company safety management system</p>	<p>A Chief Designer must demonstrate a high standard of knowledge of and a commitment to the principle of a Safety Management System.</p> <p>The Chief Designer must have a thorough knowledge of the company safety management system and be able to discuss action appropriate to typical safety management issues.</p>
<p>Responsibilities as Chief Designer</p>	<p>The Chief Designer must have a thorough understanding of the responsibilities of a Chief Designer. The assessment will include the ability of the Chief Designer to manage staff, including unqualified persons and support staff, and to conduct periodic assessment of staff competence.</p>

2.5 Acceptance

2.5.1 If GACA SS&AT accepts an appointment the applicant will be advised in writing and the Chief Designer will be issued a notice of acceptance of appointment. The notice of acceptance will contain:

- The name of the person accepted by the President as Chief Designer;
- The name of the organisation holding a procedure design certificate in respect of which the appointment is made;
- Any conditions that the President may impose.

2.5.2 The acceptance is not transferable.

2.5.3 The acceptance will remain valid unless withdrawn by GACA SS&AT, a person ceases to occupy

the position of Chief Designer, or the Chief Designer ceases to be employed by the procedure design certificate holder specified in the notice of approval.

2.5.4 An appointment as Chief Designer will normally apply in respect of a single instrument flight procedure design organisation. i.e., a person may not be the Chief Designer for more than one certificate holder.

2.6 Rejection of Application

2.6.1 GACA SS&AT will notify the applicant in writing if an appointment is not accepted. The advice will state the qualification, experience, or knowledge areas that have been assessed as unsatisfactory.

2.6.2 An unsuccessful applicant may re-apply if additional evidence can be provided to rectify any deficiency in the original application.