

# Advisory Circular

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## GUIDANCE ON CREW COMPETENCY FOR ANR-121 OPERATIONS

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### GENERAL

Advisory Circulars (ACs) are issued by the Director-General of Civil Aviation (DGCA) from time to time to provide practical guidance or certainty in respect of the statutory requirements for aviation safety. ACs contain information about standards, practices and procedures acceptable to CAAS. An AC may be used, in accordance with section 3C of the Air Navigation Act (Cap. 6) (ANA), to demonstrate compliance with a statutory requirement. The revision number of the AC is indicated in parenthesis in the suffix of the AC number.

### PURPOSE

This AC provides guidance to demonstrate compliance with, and information related to, requirements regarding crew competency for operations under ANR-121.

### APPLICABILITY

This AC is applicable for the AOC holder operating in accordance with ANR-121.

### RELATED REGULATIONS

This AC relates specifically to Division 10 in Part 2 of ANR-121.

### RELATED ADVISORY CIRCULARS

- AC 121-9-5 Safety and Emergency Procedures Training

**CANCELLATION**

This is the first AC issued on the subject.

**EFFECTIVE DATE**

This AC is effective from 1 October 2018.

**OTHER REFERENCES**

Nil

## **GUIDANCE 121REG166      GUIDANCE FOR REGULATION 166 OF ANR-121 – OPERATOR PROFICIENCY CHECK (OPC)**

Note: Operator Proficiency Check (OPC) is the “Base Check” used in AOCR previously.

### **1      GENERAL**

- 1.1 The Operator Proficiency Check (OPC) provides a means for a test and an opportunity for the practice of emergency drills and procedures which rarely arise in normal operations. The OPC can also be generally regarded as continuation training.
- 1.2 The AOC holder should follow the recommendations and advice issued by the DGCA regarding the conduct of OPC, including the stopping of engines in an aircraft in flight.
- 1.3 AN AOC holder may schedule the revalidation or renewal of a pilot’s aircraft type or class rating (to be conducted by an AFE) and an OPC (to be conducted by a check pilot) in a same training session. When doing so, the AOC holder should segregate the check items so that the check pilot, who may also be an AFE, is able to apply the appropriate capacity for various check items. For example, a check pilot who is also an AFE may conduct the OPC and, aircraft and instrument rating revalidation at the same time. The check pilot should be signing off the OPC items in the capacity of the AOC holder’s check pilot, while signing off the aircraft and instrument rating check items in the capacity of an AFE on behalf of the DGCA.

### **2      OPERATOR PROFICIENCY CHECK**

- 2.1 The scope of the practice and check may be divided into three main categories, as follows:
  - (a) Emergency manoeuvres in instrument flight conditions
  - (b) Emergency procedures including, as appropriate:
    - (i) engine fire;
    - (ii) propeller or engine overspeed;
    - (iii) fuselage fire (pilot-operated system of control);
    - (iv) engine failure before V1;
    - (v) emergency operation of undercarriage and flap;
    - (vi) pressurisation failure;
    - (vii) fuel dumping;
    - (viii) engine relight;
    - (ix) hydraulic failure;
    - (x) electrical failure;
    - (xi) malfunction of engine or engine control;
    - (xii) in the case of aircraft with two or more flight crew, coping with incapacitation of a member of the flight crew - this check should be carried out annually, i.e. on alternate OPCs;
    - (xiii) action to be taken following an ACAS or GPWS or windshear warning.

Some of these items may be covered by 'touch drills' and if the check is conducted in an aircraft (rather than in a simulator) they are normally best attended to on the ground.

- (c) a supplementary questionnaire on technical matters and operating procedures which, although not falling within the category of emergencies, are matters on which a pilot should be tested at regular intervals. Some of the items may also be covered in the course of an Operator Line Check. Typical items to be covered include:
- (i) recognition and diagnosis of aircraft system faults for which there are no set drills;
  - (ii) radio failure procedures;
  - (iii) use of operations manuals including flight guides;
  - (iv) familiarity with latest amendments to operations manuals, and latest issues of information circulars, and instructions to aircraft crew;
  - (v) mass & balance of aircraft, including loading of aircraft;
  - (vi) Aircraft performance calculation;
  - (vii) knowledge of internal and external check lists;
  - (viii) aircraft equipment such as FMS, navigation systems, flight directors, weather radar, etc.;
  - (ix) additional precautions for winter operations, anti-icing procedures and operations from contaminated runways;
  - (x) noise abatement procedures;
  - (xi) engine failure during stages of flight other than on take-off, especially critical stages such as during noise abatement, during a SID or flight over high ground, or during the approach.

A check pilot should assess the pilot's technical and operational knowledge either through a quiz or other suitable means. The AOC holder should maintain an up-to-date list of assessment topics that a check pilot will use on a particular OPC. The items covered should be recorded to assist check pilots in covering the full list in the course of two or three successive checks. The OPC should give the pilots experience in the simulator of common occurrences such as maximum cross wind takeoffs and landings, wind shear associated with typhoons and microburst, adverse weather operations, demanding operations specific to the AOC holder, etc.

- 2.2 Pilots-in-command who may be required to handle the aircraft from the right hand seat should be checked in that seat. Provided such a pilot-in-command has completed a full left hand seat OPC, and it is still valid, the right hand seat OPC may be abbreviated to a minimum of:
- (a) an engine failure on take-off;
  - (b) an asymmetric "go around" from decision height; and
  - (c) an asymmetric landing.

### 3 PROFICIENCY IN INSTRUMENT APPROACH

- 3.1 Paragraph 2.1 advises that the pilot demonstrates manoeuvres and procedures including the use of instruments and equipment. The pilot should therefore be tested to his proficiency in using instrument approach systems of the type in use at the aerodrome of intended landing and any alternate aerodrome, and in using all the pilot interpreted aids provided in the aircraft they operate. The tests may be carried out in flight (without passenger or cargo) in under actual or simulated instrument flight conditions, or in a Flight Simulation Training Device approved for the purpose.

- 3.2 A separate test or record to cover this requirement may not be necessary, if the AOC holder manages to incorporate this into the pilot's OPC or Operator Line Check (OLC), or is satisfied that this scope has been adequately covered in the pilot's Instrument Rating Test.
- 3.3 On many aircraft, the interpretation of instruments is the same for VOR as for ILS. In these circumstances, provided there is a record of an initial test as to competence on a VOR approach and provided the pilot remains in regular practice at ILS approaches and en-route use of VOR, the separate annual VOR approach test may be dispensed with.

**GUIDANCE 121REG167      GUIDANCE FOR REGULATION 167 OF ANR-121 – OPERATOR LINE CHECK**

Note: Operator Line Check (OLC) is the "Line Check" used in AOCR previously.

- 1 The annual Operator Line Check is not intended to determine competence on any particular route. It is a test of a pilot's ability to perform satisfactorily a complete line operation from start to finish, including pre-flight and post-flight procedures and use of the equipment provided. The route chosen should be such as to give adequate representation of the scope of a pilot's operations.
- 2 The AOC holder should assess the ability of a pilot-in-command to manage the operation and take correct command decisions.
- 3 As the check pilot may have to act as substitute for either pilot-in-command or co-pilot, the check pilot should be fully qualified to operate at any crew station over which he/she acts in an examining capacity.

**GUIDANCE 121REG168      GUIDANCE FOR REGULATION 168 OF ANR-121 – SAFETY AND EMERGENCY PROCEDURES CHECKS**

Note: Safety and Emergency Procedure Check (SEPC) is the "Annual Emergency Survival Test" used in the AOCR previously.

- 1 A SEPC should include a test on the crew member's knowledge of the location and use of emergency survival equipment and, the appropriate drills and procedures related to the aircraft type and cover every series and configuration. Appropriate written tests and practical competency assessments that include first aid topics should be conducted.
- 2 Every cabin crew member should also undertake first aid recurrent training and pass an appropriate written test during the SEPC.
- 3 The AOC holder should make a distinction between this SEPC (a test including practical competency assessments) and the recurrent practice required in Regulation 150 of ANR-121. Training records should be reflected accordingly.

**GUIDANCE 121REG169      GUIDANCE FOR REGULATION 169 OF ANR-121 – AREA, ROUTE AND AERODROME COMPETENCE**

- 1      The Route and Aerodrome Competence (RAEC) qualification of a pilot-in-command may be in relation to specific routes and aerodromes, or specified areas of operation or groups of routes. The AOC holder may issue a “RAEC certificate” (or the like) to a pilot to signifying the pilot’s competence in the route or aerodrome, or area.
- 2      For a RAEC based on specific routes and aerodromes, the pilot-in-command should have conducted at least one flight over one route segment and one or more landings at aerodromes representative of the operations to be flown. Each pilot-in-command should have made an actual approach into each aerodrome of landing on the route, accompanied by a pilot who is qualified for the aerodrome, as a member of the flight crew or as an observer on the flight deck, unless:
  - (a)      the approach to the aerodrome is not over difficult terrain and the instrument approach procedures and aid available are similar to those with which the pilot is familiar, and a margin approved by the DGCA is added to the normal operating minima, or there is reasonable certainty that approach and landing can be made in visual meteorological conditions; or
  - (b)      the descent from the initial approach altitude can be made by day in visual meteorological conditions; or
  - (c)      the AOC holder qualifies the pilot-in-command to land at the aerodrome concerned by means of an adequate pictorial presentation; or
  - (d)      The aerodrome concerned is adjacent to another aerodrome at which the pilot-in-command is currently qualified to land.
- 3      For a RAEC based on areas of operations or groups of routes, the AOC holder should be aware that there may be a risk that a pilot-in-command, on the basis of his general experience, could be certified as competent to operate without restriction to an aerodrome which presents special problems and clearly requires route experience or special briefing however great the pilot-in-command’s general experience may be. It is important, therefore, that the certificate issued by the AOC holder should indicate positively the aerodromes to which the pilot-in-command is permitted to operate.
- 4      To avoid reproducing a long list of aerodromes in each pilot-in-command’s RAEC (or “area and airfields competence”) certificate, an AOC holder may find it convenient to maintain as part of the operations manual a list of “straight forward” aerodromes to which any experienced pilot-in-command could operate without restriction. For certification purposes, reference to the list would suffice. No aerodrome should be classified as unrestricted unless it is also included in the AOC holder’s flight guide and has an established instrument approach procedure.
- 5      Any aerodrome not included in the AOC holder’s unrestricted list, to which a pilot-in-command is considered competent to go, should be named in the certificate which should include a brief but clear indication of the manner in which competence has been established. To ensure consistency in certification, the AOC holder adopting the area method should also indicate in the manual the general nature of the special requirements to be met before a pilot-in-command can be considered competent at a “restricted” aerodrome. It is not practicable in this publication to specify in a manner appropriate to all circumstances the detailed requirements to be met before a pilot-in-command can be considered competent to operate to an aerodrome in a ‘restricted’

category. Ultimately the decision must rest on the good judgment and integrity of the AOC holder and the measure of responsibility with which he/she approaches the problem.

- 6 The following are among the factors that the AOC holder may wish to take into account in deciding whether a pilot-in-command can be considered competent for a particular flight:
  - (a) The imposition of special aerodrome operating minima (if operations are also confined to daylight) could in some circumstances render prior experience of the aerodrome unnecessary – and enable the pilot-in-command to get aerodrome experience in the course of normal operations.
  - (b) There are aerodromes at which a combination of special aerodrome operating minima, prohibition of night landings and special pre-flight briefing on local conditions could be considered adequate for a first visit;
  - (c) In general, a pilot-in-command should not be considered competent to operate to an aerodrome at which nearby mountainous terrain makes the installation of an instrument approach aid impracticable, unless after an initial visit under supervision, he/she has within the preceding twelve months flown there as pilot-in-command or co-pilot;
  - (d) Competence to operate into a complex terminal area could sometimes, subject to acceptable general experience, be established in a flight trainer equipped for the purpose. If the complexity of ATC clearances and special characteristics of the local R/T were a factor, the use of tape recordings might be necessary.
  - (e) In certain circumstances it may be permissible for the AOC holder to base his decision that a pilot-in-command is competent for a particular flight on the fact that he/she will have a co-pilot with suitable general experience in addition to recent experience of the particular route and aerodrome. This procedure should be adopted only in exceptional circumstances, and the co-pilot concerned should be named in the certificate which should include details of his relevant experience;
  - (f) A pilot-in-command whose experience is limited, say, to the Pacific and the Far East cannot be considered competent for flights in a completely different environment such as Europe or the North Atlantic.
- 7 The use of audio/visual means to familiarise pilots-in-command with aerodrome approaches may be approved.
- 8 If the AOC holder relies in any particular instance on the verbal briefing of a pilot-in-command, it should be given by a person who is qualified to operate on the route or the aerodrome in question: the pilot-in-command should follow this by briefing his co-pilot before the flight commences.
- 9 All certificates raised in respect of a pilot-in-command's area and airfields competence should be signed on the AOC holder's behalf by a qualified official of appropriate status.

- 10 In a small undertaking the chief pilot or other person in charge should know in detail the experience and general competence of each of his pilots and can be expected to arrange for special route familiarisation and to raise additional certificates where necessary. For larger organisations, a system of control that does not depend upon personal knowledge will be necessary in order to prevent a pilot-in-command being rostered for a flight not covered by his certificate.

**GUIDANCE 121REG171 GUIDANCE FOR REGULATION 171 OF ANR-121 – CHECK PILOT QUALIFICATIONS**

- 1 According to Regulation 171 of ANR-121, the AOC holder is required to establish a process for selecting and assigning suitably qualified check pilots to conduct each type of checks. The qualification of check pilots conducting the various checks should be clearly established.
- 2 Further to the requirements in Regulation 171 of ANR-121, the check pilot who is to conduct –
- (a) **Operator Proficiency Check**, should have the following qualifications:
- (i) hold a valid Flying Instructor (FI) Rating for the specific aircraft type;
  - (ii) be an operational commander of Captain rank;
  - (iii) have at least 5,000 hours of total flying experience;
  - (iv) have at least 1,000 hours of flying experience as pilot-in-command (PIC) of which, 500 hours shall be on the specific aircraft type; and
  - (v) have at least 500 hours of instructional experience of which, 300 hours shall be on the specific aircraft type.
- (b) **Initial Operator Line Check**, should have similar qualifications as those for OPC.
- 3 The AOC holder should also establish a formal training programme for check pilots and ensure that the potential check pilots undergo such a programme before assigning these pre-defined duties to them.

**GUIDANCE 121REG172 GUIDANCE FOR REGULATION 172 OF ANR-121 – FLIGHT INSTRUCTORS AND CHECK PILOT COMPETENCY CHECKS**

- 1 To fulfil the requirement of Regulation 172(1) of ANR-121, CAAS expects the AOC holder to have at least one supervisory instructor for five or more instructors. Similarly, the ratio applies for check pilots, including AFE-cum-check pilots.
- 2 The supervisory AFE (who supervises the AOC holder's pool of AFEs) mentioned in paragraph 1 should be a senior AFE (SAFE) appointed in accordance to SASP 7.



**GUIDANCE 121REG173      GUIDANCE FOR REGULATION 173 OF ANR-121 – SEP CHECK EXAMINERS**

- 1 For the purpose of conducting SEPC, the Safety and Emergency Procedure (SEP) Check examiner should:
  - (a) have a minimum one year of experience as a safety training instructor with the AOC holder;
  - (b) be an instructor conducting instructor training (referred to AC 121-9-5), at least the current knowledge, ability and recent experience as an instructor;
  - (c) be familiar with the types of operations conducted by the AOC holder;
  - (d) be trained to the required standards of assessing crews' competency and required standards of invigilating skills; and
  - (e) have operated to the level of assessment that he/she is to conduct.
- 2 In nominating a candidate as a SEP Check examiner for the approval by the DGCA, the AOC holder should submit details of the candidate, including his/her curriculum vitae and evidence of satisfying the criteria in paragraph 1.
- 3 A SEP Check examiner may be appointed after passing an appointment check conducted by a CAAS authorised officer or a CAAS Appointed SEP Check examiner
- 4 The appointment of a SEP Check examiner is typically valid for two years, subject to:
  - (a) him/her passing competency checks that may be conducted by a CAAS authorised officer, or a CAAS Appointed SEP Check examiner, at any time during his/her tenure; and
  - (b) him/her being current as a SEP instructor and in possession of a valid user approval to use and control the AOC holder's emergency training apparatus that is used for the safety training of the AOC holder's crew (see AC 121-9-5)

**GUIDANCE 121REG177      GUIDANCE FOR REGULATION 177 OF ANR-121 – COMPETENCY AND TESTING RECORDS**

- 1 The details of the test or assessment to be recorded for OPC and OLC should include, where applicable, the number of times each test was conducted.
- 2 The records to be maintained for SEPC and SEP Check examiners include:
  - (a) training records
  - (b) examinations and practical assessments conducted
  - (c) checks as carried out by CAAS authorised officers or CAAS Appointed SEP Check examiners.
- 3 The AOC holder should track the status of various tests for crew members such that the crew member would not be assigned for duty with an expired or invalidated check, and for an effective rostering or scheduling that caters for the appropriate revalidation or renewal.
- 4 The AOC holder should issue appropriate documentation, such as proficiency cards or certificates (as referred to for RAEC), to each crew member that indicates the status and validity of his proficiency or competency so as to facilitate inspection by CAAS. The AOC holder should instruct every crew member to carry his/her certificate of proficiency or competency issued by the AOC holder whenever he/she is operating a flight.