

Advisory Circular

FLIGHT CREW TRAINING 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 concerning flight crew training.

APPLICABILITY

This AC is applicable to an AOC holder operating in accordance with ANR-121.

RELATED REGULATIONS

This AC relates specifically to Regulations 143, 147, 148, 154, 155, 156, 157 and 158 of ANR-121.

RELATED ADVISORY CIRCULARS

- AC 121-9-1 Guidance on Crew Training for ANR-121 Operations
- AC 121-9-5 Safety and Emergency Procedures Training
- AC 121-9-6 Training on Approach and Landing Accidents Reduction (ALAR) and Controlled Flight into Terrain (CFIT) Prevention
- AC 121-9-7 Guidelines for the Design and Implementation of Line Oriented Flight Training (LOFT)
- AC 121-9-8 Training on Crew Resource Management
- AC 121-9-9 Training on Ground Proximity Warning System
- AC 121-9-10 Upset Prevention and Recovery Training

CANCELLATION

This is the first AC on the subject.

EFFECTIVE DATE

This AC is effective from 1 October 2018.

OTHER REFERENCES

Nil.

1 FLIGHT CREW INTRODUCTION AND TRANSITION TRAINING

Notes:

- (i) The “introduction”, “transition” and “upgrade” training segments required in Regulations 154, 155 and 156 of ANR-121 respectively were previously reflected as “conversion” training in the defunct Air Operator Certificate Requirements. “Conversion” is not to be used in these contexts of flight crew training so as to avoid confusion with “conversion” that is typically used for the conversion of a foreign licence to a local licence.
- (ii) The training referred to in the ANR-121 does not include training that leads to a change in the pilot’s rating. For a pilot holding a Singapore pilot licence, such training is to be conducted by a training organisation approved by the Authority for that scope in accordance with the Air Navigation Order (ANO) and Singapore Air Safety Publication (SASP) 10.

1.1 TRAINING PROGRAMME FOR FLIGHT CREW

1.1.1 Introduction and transition trainings must be conducted in accordance with the respective syllabus detailed in the AOC holder’s training programme that is approved by the DGCA under Regulation 143 of ANR-121. The AOC holder should consult CAAS before developing the training programme and syllabus for a new aircraft type. CAAS may advise on the nature and scope of the training to be given, and early consultation will help to prevent difficulties and inconvenience to the AOC holder when the proposed training programme is submitted for approval.

1.1.2 The AOC holder should also refer to the following ACs for guidance on training for the various areas:

- AC 121-9-6 Training on Approach and Landing Accidents Reduction (ALAR) and Controlled Flight into Terrain (CFIT) Prevention
- AC 121-9-7 Guidelines for the Design and Implementation of Line Oriented Flight Training (LOFT)
- AC 121-9-8 Training on Crew Resource Management
- AC 121-9-9 Training on Ground Proximity Warning System
- AC 121-9-10 Upset Prevention and Recovery Training

1.2 MINIMUM EXPERIENCE REQUIREMENTS

1.2.1 The AOC holder must include in its training programme the qualification and experience required of a flight crew member before the crew member undergoes training for:

- (a) a transition to another aircraft type; or
- (b) an upgrade to another role, for example as a pilot-in-command.

1.3 GROUND TRAINING

1.3.1 An AOC holder should ensure that technical training for its personnel are effective. This could be achieved through a properly organised programme, conducted by competent instructors and is supported by training facilities that is fit for purpose, including any necessary mechanical and visual aids. If the aircraft concerned is relatively simple, private study may be adequate if the AOC holder provides suitable manuals and/or study notes. It is important that the time allowed for ground training should be devoted exclusively to that purpose and that trainees should not be taken away from their studies or for normal flying duties. The DGCA or a safety inspector

may examine premises and equipment to be used for ground training, and may be present during the ground training.

1.3.2 For all flight crew, the ground course should cover the survival training as detailed in AC 121-9-5.

1.4 EXAMINATIONS AND TESTS AFTER GROUND TRAINING

1.4.1 Courses of ground instruction for flight crew should incorporate written progress tests at the end of each distinct phase.

1.4.2 The annual emergency and survival test as detailed in AC 121-9-5 should be given before any flying training is started.

1.5 FLYING TRAINING FOR PILOTS

1.5.1 For all pilots undergoing transition or upgrade training, the flying training should be systematic and sufficiently comprehensive to familiarise them with all aspects of normal operation of the aircraft, including the use of all flight deck equipment, and with all emergency drills, procedures, handling techniques and limitations. Pilots on transition flying training should not be scheduled for flying duties on the aircraft types that he/she is currently qualified on.

1.5.2 The “flight handling” sections of the syllabus should include all items required for the appropriate type rating tests (refer SASP 2), and in addition the following items:

- (a) visual “go around” from not more than 200 ft AGL;
- (b) failures of flight director system, including ILS approach without flight director;
- (c) a typical noise abatement procedure;

1.5.3 Each exercise should be practised until a satisfactory standard is achieved. The various take-off, approach, “go around” and landing exercises should be performed at least twice. Records kept by the AOC holder should show the number of times that each exercise was covered.

1.5.4 A pilot undergoing transition training should at some stage be given an exercise in coping with incapacitation of another flight crew member. If the flight crew complement includes a flight engineer, it will be necessary for a pilot to be sufficiently familiar with the flight engineer’s in-flight functions.

1.5.5 A pilot should also be given adequate training in the execution of relevant emergency drills in a flight simulator approved for the purpose. Pilots should also be given practice, during introduction and transition training, in the operation of all radio equipment and aircraft systems.

1.6 ADDITIONAL TRAINING FOR PILOT-IN-COMMAND

1.6.1 Without prejudice to any of the requirements of a particular type rating test, the transition or upgrade training for a pilot-in-command (PIC) should include the following items as may be appropriate to the aircraft type:

- (a) landing with engine(s) inoperative;
- (b) landing without flap or slat, or with restricted flap;
- (c) landing with flying control system malfunction;
- (d) instrument approach and “go around” with flight director malfunction;
- (e) landing at night with one engine inoperative;
- (f) crosswind take-off and landing.

1.6.2 A PIC should also be given practice, normally in a simulator, for the stopping and starting of engines in flight and any emergency drills for situations that would require the PIC's action while the co-pilot is handling the aircraft.

1.7 TESTS AFTER FLYING TRAINING

1.7.1 Before being assigned to line duty in a pilot's seat (whether under supervision or not) the pilot-in-command and co-pilot must be certified by the AOC holder as competent in all the functions and duties covered by the relevant Operator Proficiency Check (OPC). Training in these functions and duties may not be completed in the course of normal operations. All transition flying training must therefore incorporate the OPC described in Regulation 166 of ANR-121.

1.7.2 Unless the aircraft, its handling characteristics and its flight instruments are closely similar to those of a type on which the pilot is already experienced, his transition training should incorporate instrument training, including the appropriate instrument rating tests to be conducted in accordance with SASP2 on the new type. This will normally be expected to be part of a transition programme, regardless of the expiry date of an existing instrument rating.

1.7.3 Before a pilot is assigned to line duty as the PIC or co-pilot, the AOC holder should certify, as a result of an initial Operator Line Check (OLC), that they are competent to execute normal manoeuvres and procedures under supervision.

1.8 FLIGHT UNDER SUPERVISION

1.8.1 After completion of flying training and initial tests, a pilot is to undergo consolidation as required under Regulation 158 of ANR-121. The pilot is to operate a minimum number of sectors and/or flying hours "under supervision".

1.8.2 The "under supervision" period should not be used for the completion of the basic introduction, transition or upgrade syllabus. Its purpose is twofold. Firstly, it will enable the newly introduced/ transitioned/ upgraded pilot to settle down to the duties under the company of an experienced and qualified pilot specially designated for the purpose, and who could provide advice if necessary. Secondly, it will enable the training staff to assess and verify the adequacy of the training, and to ensure that proper operating standards are achieved at the outset, in the course of normal and varied operations.

1.8.3 "Under supervision" means -

(a) for a PIC: flying with an experienced pilot, qualified to act as the PIC and specially designated by the AOC holder to act as a supervising pilot, who may occupy either seats and perform pilot flying or pilot monitoring duties as required by the training syllabus. (Some AOC holders may wish to require the newly introduced/ transitioned/ upgraded PIC to operate a few sectors in the co-pilot's seat and this is acceptable if the supervising pilot is in the PIC's seat);

(b) for a co-pilot: flying in the co-pilot's seat with either:
(i) a qualified PIC, specially designated for the purpose, occupying the PIC's seat, or
(ii) any qualified PIC in the PIC's seat and a supervisory first officer specially designated for the purpose, occupying an additional crew seat in the flight deck.

- 1.8.4 On completion of the sectors under supervision an OLC should be administered.
- 1.8.5 The “under supervision” sectors carried out by a newly qualified captain should be conducted with an experienced supervisory captain acting as co-pilot. The AOC holder may therefore wish to carry out a further period of flying, after the OLC referred to in paragraph 1.8.4, teaming the new captain with a standard crew, and with a suitably qualified pilot, specially designated for the purpose, occupying the jump seat and acting only in an advisory capacity. It should be made clear that in this situation the newly qualified captain is the PIC of the aircraft.
- 1.8.6 If the flight crew complement includes a pilot acting as a Systems Panel Operator, he should, after introduction/ transition/ upgrade training and the initial test in these duties, operate a minimum number of sectors under the supervision of a qualified and specially designated person carried in addition to the flight crew of the aircraft.

1.9 USE OF FLIGHT SIMULATORS FOR TRAINING

- 1.9.1 The extent to which a flight simulator may be used for training will be considered according to individual circumstances as approved by the DGCA.

1.10 FLIGHT ENGINEERS

- 1.10.1 Transition for flight engineers should follow the same general pattern as that of pilots. Newly trained flight engineers should not occupy the flight engineer's seat during take-off and landing on a commercial air transport flight until they have completed all initial competence checks.
- 1.10.2 Flight engineers should operate a minimum number of sectors under the supervision of a suitably qualified and specially designated flight engineer. An OLC report should be made on completion of the sectors under supervision.
- 1.10.3 Flight engineers undergoing transition training should at some stage be given an exercise in coping with incapacitation of another flight crew member.

1.11 VARIANTS OF THE SAME AIRCRAFT TYPE

- 1.11.1 The AOC holder may operate a number of aircraft which, though of the same type, are not identical. They may differ in engines, systems, equipment, flight deck lay-out, operating procedures, performance, or in other respects. In such circumstances the AOC holder must conduct a “differences course” for its crew to ensure that they are adequately trained on each variant.

2 UPGRADE FROM FIRST OFFICER TO PILOT-IN-COMMAND

- 2.1 As required in Regulation 156 of ANR-121, the promotion of a first officer to PIC must be preceded by a planned “upgrading” course. An adequate number of sectors should be flown in the seat as PIC under supervision. There should be a full PIC's OPC and OLC immediately before appointment.

3 TRAINING ON NEW OR SPECIAL EQUIPMENT

- 3.1 Formal training should be given to the flight crew as necessary on new equipment as they are introduced and on special equipment such as storm warning radar, flight

director systems, auto-pilot, Inertial Navigation/Reference System, Global Positioning System, Communications-Navigation-Surveillance (CNS) and Air Traffic Management (ATM) systems and head-up display and/or enhanced vision system for those aircraft so equipped.

4 TRAINING ON SPECIAL OPERATIONS

- 4.1 All approved special operations should be incorporated into the training programme of the flight crew. Guidance may be provided for the respective special operation, such as Ultra Long Range (ULR) operations.

5 SECURITY TRAINING

- 5.1 The AOC holder should refer to requirements from the National Civil Aviation Security Authority.

6 SAFETY AND EMERGENCY PROCEDURES (SEP)

- 6.1 Refer to AC 121-9-5.

7 RECURRENT TRAINING

- 7.1 The AOC holder is reminded that other than Regulation 148 of ANR-121, there are also recurrent training for other areas such as SEP, CRM, Dangerous Goods and security.