

# Advisory Circular

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## SAFETY AND EMERGENCY PROCEDURES TRAINING

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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, the requirement for safety and emergency procedures (SEP) training to be included as part of the training programme for crew members.

### APPLICABILITY

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

### RELATED REGULATIONS

This AC relates specifically to regulations 143, 146, 150, 162, 164, 168 and 173 of ANR-121.

### RELATED ADVISORY CIRCULARS

- AC 119-3-2 Aircraft Leasing
- AC 121-9-1 Guidance on Crew Training for ANR-121 Operations
- AC 121-9-2 Flight Crew Training for ANR-121 Operations
- AC 121-9-3 Cabin Crew Training for ANR-121 Operations
- AC 121-8-2 Cabin safety for Airbus A380 aircraft

### CANCELLATION

This AC supercedes AC 121-9-5(Rev 0). In this Revision 1, guidance is inserted for the AOC holder on the detecting and management of communicable disease, and on the use of an aircraft virtual tool. Other editorial changes are also made.

**EFFECTIVE DATE**

This AC is effective from 30 June 2020.

**OTHER REFERENCES**

- ICAO Document 10002 Cabin Crew Safety Training Manual
- ICAO 9481 N/928 – Emergency Response Guidance for Aircraft Incidents Involving Dangerous for dangerous goods emergency

# **1 GENERAL**

## **1.1 REQUIREMENTS AND REFERENCES**

- 1.1.1 Pursuant to regulation 150 of ANR-121, this AC indicates the arrangements considered necessary for SEP training of crew members.
- 1.1.2 Further details and references on training requirements and standards can be found in ICAO Document 10002 Cabin Crew Safety Training Manual.
- 1.1.3 As a reminder, the SEP training programmes for crew and the training of SEP Training instructors and SEP Check Examiners are to be incorporated in the AOC holder's Training Manual (or Part D of the Operations Manual).
- 1.1.4 The AOC holder should also refer to AC 121-8-2 for additional guidance with regard to emergency evacuation training for an Airbus A380 aircraft.

## **1.2 CREW CO-ORDINATION AND COMBINED TRAINING**

- 1.2.1 Successful management of aircraft emergencies depends heavily upon effective co-ordination and two-way communication between the flight crew and cabin crew.
- 1.2.2 The AOC holder should ensure combined training is provided for flight crew and cabin crew. The scope of training that all crew must receive prior to operating commercial air transport aircraft is covered in paragraphs 3 (Introduction Training), 5 (Aircraft Type Training) and 7 (Recurrent Training) of this AC.
- 1.2.3 Additional training that cabin crew must receive is listed in paragraphs 4, 6 and 8. Flight crew should also be made aware of such additional training provided to cabin crew.
- 1.2.4 Particular emphasis should be placed on the provision of joint practice in aircraft evacuations so that all who are involved are familiar with the duties performed by other crew members before, during and after the evacuation. The importance of effective co-ordination and two-way communication between flight and cabin crew in various abnormal and emergency situations should also be stressed. Emphasis should also be placed on co-ordination and communication within the crew in normal operational situations including the use of correct terminology, common language and effective use of communications equipment.
- 1.2.5 Cabin crew should also be trained to identify unusual situations that might occur inside the cabin, as well as any activity outside the aircraft that could affect the safety of aircraft and/or passengers. They should also be able to effectively communicate such information to the flight crew.
- 1.2.6 When combined training cannot be arranged, instructors of the AOC holders should adopt the role of flight crew or cabin crew, as appropriate.
- 1.2.7 To facilitate training and to promote consistency in the training of standardised drills and procedures, it is essential that there is effective liaison between flight crew and cabin crew training departments.

## **1.3 TRAINING SYLLABUS**

1.3.1 A detailed emergency and survival training and, testing syllabus is to be specified in the Training Manual. The syllabus should clearly define the introduction training, aircraft type training, recurrent training, the annual emergency and survival test and the 24-month periodic practical training.

#### 1.4 SEP TRAINING INSTRUCTORS

1.4.1 According to regulation 146 of ANR-121, the process of appointing SEP training instructors will be subject to approval by the DGCA. For the purpose of the SEP training, this includes the appointment of:

- (a) a suitably qualified person to manage cabin safety training and testing;
- (b) any instructor to provide training for the crew; and
- (c) any instructor to provide training for instructors mentioned in (a) and (b).

1.4.2 The DGCA may consider the following as acceptable for an SEP training instructor:

- (a) a minimum of one-year experience as a current operating crew member of the AOC holder and, has performed duties in a supervisory capacity or has previous experience as a safety training instructor. The experience should be acquired within the last 5 years; or
- (b) a candidate who does not meet the experience requirements in 1.4.2(a) but possesses other relevant aviation experience or appropriate qualification may be considered provided the AOC holder's proposed training programmes would assimilate the candidate into the role of an instructor and are acceptable to the DGCA.

1.4.3 When conducting instructor training (referred to in paragraph 1.4.1(c)), the instructor trainer should have at least current knowledge, ability and recent experience as an instructor.

1.4.4 For a newly appointed instructor with less than two years of experience, the instructor should be required to:

- (a) undergo a check at least once every 12 months on the competency to continue as an instructor by either:
  - (i) one of the AOC holder's SEP Check examiners approved by CAAS;
  - (ii) a CAAS authorised officer; or
  - (iii) a CAAS appointed SEP Check examiner; and
- (b) carry out a minimum of two observation flight sectors on the AOC holder's flight within the last 12 months; or in the case of cargo aeroplane or aeroplane types that CAAS may consider appropriate, a minimum of two training sessions on an actual aeroplane in lieu of the two observation flight sectors.

1.4.5 An instructor with more than two years of experience should be required to:

- (a) undergo a check at least once every 24 months on the competency as an instructor by either:

- (i) one of the AOC holder's SEP Check examiners approved by CAAS;
  - (ii) a CAAS authorised officer; or
  - (iii) a CAAS Appointed SEP Check examiner; and
- (b) carry out a minimum of two observation flight sectors on the AOC holder's flight within the last 24 months; or in the case of cargo aeroplane or aeroplane types that CAAS may consider appropriate, a minimum of two training sessions on an actual aeroplane in lieu of the two observation flight sectors.

1.4.6 The AOC holder should maintain the records of its instructors, which include:

- (a) training records;
- (b) training classes conducted;
- (c) observation flights; and
- (d) checks carried out by a CAAS authorised officer or a CAAS Appointed SEP Check examiner.

1.4.7 As required in regulation 146 of ANR-121, an AOC holder must seek approval for its process for appointing training instructors. The AOC holder should propose a process that:

- (a) specifies the means to ensure trainee instructors meet the minimum qualifications in paragraph 1.4.2;
- (b) includes the training programme for the trainee instructors, including training on the use of approved training apparatus;
- (c) ensures that instructors providing the instructor training are qualified and have the required approvals to control and supervise the use of training apparatus. Refer to AC 121-9-1 for guidance on approval for use of approved apparatus;
- (d) specifies that assessment of trainee instructors may only be conducted by SEP Check examiners acceptable to the DGCA. The DGCA may specify upon approval of the appointment process that such assessment be conducted by CAAS authorised officers, or CAAS Appointed SEP Check examiner; and
- (e) includes any follow-up process to seek DGCA's approval for a newly qualified instructor to use certain approved training apparatus. In the case of a trainee instructor being assessed by CAAS authorised officers or CAAS appointed SEP Check examiner, the assessment for approval to use the training apparatus may be done concurrently.

## 1.5 SEP CHECK EXAMINER

1.5.1 As required in regulation 173 of ANR-121, an AOC holder must seek an approval from the DGCA for the appointment of SEP Check examiners who will conduct competency testing and practical assessment of the crew. The training of an SEP Check examiner should be included in the AOC holder's training programme and it should:

- (a) specify the selection criteria of candidates to become an SEP Check examiner;
  - (b) specify the assessment process for nominating an SEP Check examiner; and
  - (c) determine an appropriate scope and tenure that an SEP Check examiner may be nominated for.
- 1.5.2 The AOC holder may seek the DGCA's concurrence of the candidates prior to commencement of training. The DGCA may consider a candidate as suitable if the candidate:
- (a) has at least 1 year of current experience as a qualified instructor with the AOC holder; and
  - (b) has been approved to use the training apparatus that would be required for the conduct of the examination.
- 1.5.3 The experience level of the AOC holder's nominated SEP Check examiner may be taken into account when determining the scope and tenure of the appointment. The DGCA may approve the appointment of a new SEP Check examiner with a tenure of up to one year, and that of a more experienced SEP Check Examiner with a tenure of up to 2 years.
- 1.6 SUPERVISION OF INSTRUCTORS AND EXAMINERS
- 1.6.1 Competency checks of instructors and examiners, by a CAAS authorised officer, will be included during SEP training inspections.
- 1.7 RECORDS OF EMERGENCY AND SURVIVAL TRAINING AND TESTS
- 1.7.1 Records should be maintained to show trainees' attendance for each training and include information about the results of tests. The records should incorporate certificates indicating the competence of trainees to perform the duties on which they have been tested. The AOC holder may consult the DGCA on the form of records and certificates that are to be maintained.
- 1.7.2 The training record system should also be able to display the validity and expiry dates of written tests and practical assessments of all crew members. There should also be an effective system to guard against crew being rostered for duty when their practical assessments and tests are overdue. The annual emergency and survival test is valid for 12 months.
- 1.7.3 Records of all introduction training, aircraft type training, recurrent training, practical assessments and testing of all crew should be made available when requested by the DGCA.
- 1.7.4 To facilitate inspection by the CAAS authorised officers, all crew should carry their certificate of proficiency issued by the AOC holder whenever they are operating a flight.
- 1.8 SEP TRAINING OF CREW TO OPERATE A LEASED AIRCRAFT
- 1.8.1 An AOC holder under the situations stated below will be responsible for the operational control of the leased aircraft and the operation of this leased aircraft is to comply with

the applicable Singapore regulations (particularly ANR-119, and ANR-121 or ANR-135), including the training and competency of the crew operating the leased aircraft:

- (a) the operator (lessee) dry-leases in an aircraft from another operator (lessor).
- (b) the operator (lessor) wet or damp leases-out an aircraft to another operator (lessee), i.e. when the lessor operator provides full or partial crew with the leased-out aircraft.

Refer to AC 119-3-2 for more guidance on the responsible operator for various types of aircraft lease.

1.8.2 When the AOC holder is responsible as described in paragraph 1.8.1, the AOC holder should submit a training programme to the DGCA as part of the leasing application. The training programme should cover:

- (a) coordination and communication between crew, especially when personnel provided by lessee or lessor are mixed;
- (b) operation of that particular leased aircraft, in terms of safety and emergency procedures;
- (c) checking and testing requirements; and
- (d) retention of training records.

1.8.3 The AOC holder should also provide necessary training records and information of the crew who may be operating on this leased aircraft for the DGCA's assessment of the proposed training programme for the crew.

## **2 PURPOSE AND PROVISION OF SEP TRAINING**

### **2.1 PURPOSE**

2.1.1 The purpose of emergency and survival training, practical assessments and testing is to provide crew with the knowledge, skills and confidence needed to ensure that they are able to deal efficiently with different types of emergency and survival situations.

### **2.2 ARRANGEMENTS**

2.2.1 The AOC holder should ensure that organised courses of instruction are conducted by qualified instructors on the use of all emergency and survival equipment, and on all emergency procedure and drills, including aircraft emergency evacuation.

### **2.3 TRAINING AID**

2.3.1 Suitable training aids should be provided to enhance the presentations in both classroom and practical instruction sessions. If online or virtual training is used, the same considerations may apply, subject to the effectiveness of the training aids.

### **2.4 NUMBER OF TRAINEE PER INSTRUCTOR**

2.4.1 In order to provide for sufficient supervision and control during training, the maximum number of trainees per class should not exceed 25. A class of 20 trainees or fewer

may be conducted with one instructor; however, two instructors should be provided if the class size exceeds 20 trainees. The AOC holder should ensure that suitable classroom training facilities are provided.

- 2.4.2 A maximum of 10 trainees per instructor is recommended for the conduct of practical instruction such as hands-on and role play exercises. This is to allow better supervision of the training. The AOC holder may propose the appropriate ratio for certain courses by taking into consideration the types of hands-on exercises on safety and emergency equipment versus group simulated exercises which are particularly productive in gauging competency standards of the crew on emergency evacuation procedures.

## 2.5 BEFORE FLYING ON AIRCRAFT

- 2.5.1 Before flying training is commenced on an actual aircraft, as required in regulation 150 of ANR-121, every crew member must have successfully completed the introduction SEP training, including the practical assessments and tests as described in this AC.

## 3 INTRODUCTION TRAINING - ALL CREW

### 3.1 GENERAL

- 3.1.1 The introduction SEP training should be a part of the training programme for all new crew. Each crew member should be trained in the following subjects that are of a generic nature and not necessarily related to a specific aircraft type.

### 3.2 CREW CO-ORDINATION

- 3.2.1 The AOC holder should refer to paragraphs 1.2.4 and 1.2.5 for guidance on crew co-ordination.

### 3.3 AEROMEDICAL AND FIRST AID TOPICS

- 3.3.1 Instruction should be given on medical topics such as:

- (a) first aid procedures appropriate to the aircraft type, i.e. its size and the number of flight crew carried;
- (b) guidance on the avoidance of food poisoning, with emphasis on the choice of a pre-flight meal and the importance of the pilot-in-command and co-pilot eating different food at different times during the flight, especially on long sectors;
- (c) the possible dangers associated with the contamination of the skin or eyes by aviation fuel and other fluids and their immediate treatment;
- (d) the recognition and treatment of hypoxia and hyperventilation; and
- (e) first aid associated with survival training appropriate to the route operated (e.g. polar, desert and jungle).
- (f) the recognition of the signs and symptoms of a communicable disease during embarkation and during flight, and the assessment, management and necessary follow-up actions of suspect cases of communicable disease. The crew training for a suspected case discovered during flight should minimally cover the following areas:



- (i) keeping the pilot-in-command, and other crew members, informed and updated on the situation in the cabin;
- (ii) knowledge and use of universal precaution kits e.g. the proper use of protective equipment for crew, disinfection products to use for cleaning up spilled body fluids;
- (iii) methods of gathering information from the ill passenger or from his/her companions;
- (iv) the know-how to take body temperature with a thermometer if available, or by other means if not available;
- (v) management of face mask provision to an ill passenger, and/or to other passengers, and/or to one or more cabin crew;
- (vi) how to advise and manage the ill passenger who displays gastrointestinal symptoms (e.g. vomiting, diarrhoea);
- (vii) how to coordinate the procedure of isolating a lavatory for the use of the ill passenger, if possible; and
- (viii) knowledge on when and where to move a passenger suspected of having a communicable disease.

3.3.2 Flight crew who operate on aircraft where cabin crew need not be carried should undertake training in basic first aid that is to include the use and contents of first aid and medical kits and in cardiopulmonary resuscitation (CPR).

### 3.4 FIRE AND SMOKE TRAINING

3.4.1 Practical fire and smoke training should be conducted under the supervision of an instructor who has the knowledge, ability and experience to conduct such training.

3.4.2 Both theoretical and practical training should be given. The training is to provide:

- (a) an appreciation for the chemistry of fire as a preliminary consideration to determine the suitability of extinguishing agents for particular fire situations, the techniques of applying extinguishing agents, and if practical, the consequences of misapplication and their use in a confined space; and
- (b) a demonstration or video on fire extinguishers being used on various types of fires that should be related to typical aircraft interior equipment (e.g. galley fires, fires in lavatories, upholstery, passenger service units, portable electronic devices and electrical installations).

### 3.5 WATER SURVIVAL TRAINING

3.5.1 Where flotation equipment is carried, a comprehensive wet drill to cover all ditching procedures should be conducted for all crew. This wet drill is to include, as appropriate, practical session or demonstration of the actual donning and inflation of a life-jacket, together with a demonstration or video of the inflation of life-rafts and/or slide-rafts. All crew would have to board a life raft or a similar flotation equipment from the water whilst wearing their uniform or similar attire with a life-jacket identical to that being

carried on the aircraft. Cabin crew who are required as first responders in such an emergency are to be trained to complete the exercise independently. The training should include the use of all survival equipment carried on board the life raft or flotation equipment and any additional survival equipment carried separately on board the aircraft.

- 3.5.2 An AOC holder conducting intensive offshore helicopter operations should carry out the wet drills annually. Consideration should be given to the provision of further training such as underwater escape training.

### 3.6 SURVIVAL TRAINING

- 3.6.1 Survival training, including the use of any survival equipment carried, appropriate to the areas of operation, e.g. polar, desert, jungle or sea, should be included in the AOC holder's training programme.

### 3.7 HUMAN FACTORS

- 3.7.1 Training should address the physiological effects on the human body of flying, the problems associated with pressure change and hypoxia and the need for restrictions on underwater diving. Training should include information on flight time limitations, the effects of operating for extended periods of time and the effects of time zone changes. Operational limitations should include illness, use of alcohol and drugs, blood donations etc. Advice should be given on general health care, especially whilst operating overseas, and the need for preventive medicine such as immunisation, when operating to areas of potential disease or viral infection.

### 3.8 AERODROME EMERGENCY SERVICES

- 3.8.1 The operational procedures for ground-based emergency services at aerodromes should be discussed.

### 3.9 CABIN CREW SERVICE DUTIES

- 3.9.1 Cabin crew should also receive training for their normal flying duties, including the location and use of all cabin and galley equipment and on necessary safety precautions to be taken to prevent injuries when using such equipment.

## **4 INTRODUCTION TRAINING - ADDITIONAL ITEMS FOR CABIN CREW**

### 4.1 GENERAL

- 4.1.1 Cabin crew should be trained in the following additional subjects that are generic and not necessarily related to a specific aircraft type.

### 4.2 DISCIPLINE AND RESPONSIBILITIES

- 4.2.1 An AOC holder should ensure that its cabin crew receive training on:
- (a) the importance of performing their duties in accordance with the operations manual;
  - (b) continuing competence and fitness to operate as a cabin crew member with special regard to fatigue;

- (c) general understanding of the aviation regulations relating to cabin crew;
- (d) general knowledge of relevant aviation terminology, phases of flight and parts of the aircraft;
- (e) pre-flight briefing of cabin crew and the provision of necessary safety information with regard to their specific duties;
- (f) the importance of ensuring that relevant documents and manuals are kept up to date with amendments provided by the AOC holder;
- (g) the importance of identifying when cabin crew members have the authority and responsibility to initiate an evacuation and other emergency procedures; and
- (h) the importance of safety duties and responsibilities, and the need to respond promptly and effectively to emergency situations.

#### 4.3 FIRST AID

4.3.1 Instruction should be given on first aid and the use of first aid kits, including awareness on the administration of relevant drugs and epinephrine auto-injectors, if carried. The following subjects should be covered:

- (a) haemorrhage;
- (b) wounds;
- (c) fractures, dislocations and sprains;
- (d) burns;
- (e) care of the unconscious;
- (f) shock;
- (g) heart attacks;
- (h) stroke, epilepsy;
- (i) rescue breathing and cardiopulmonary resuscitation for infants and adults;
- (j) use of therapeutic oxygen and oxygen sets;
- (k) poisoning;
- (l) emergency childbirth;
- (m) choking;
- (n) stress reactions and allergic reactions;
- (o) air sickness;
- (p) asthma; and

- (q) diabetes.

Note: Crew should demonstrate their proficiency in rescue breathing and cardiopulmonary resuscitation using a dummy specifically designed for the purpose.

#### 4.4 FIRE AND SMOKE TRAINING

4.4.1 It is particularly important that cabin crew be given theoretical and practical training in dealing with emergency situations involving fire and smoke in the cabin. The training is to include:

- (a) the responsibility of cabin crew to deal promptly with emergencies involving fire and smoke. Emphasis should be placed on the importance of identifying the actual source of the fire;
- (b) communication procedures with the flight deck to inform the flight crew immediately when fire or smoke is discovered and to keep them updated as the situation develops, where the importance of crew co-ordination and communication is to be emphasised; and
- (c) procedures to ensure that passengers are aware of the no-smoking areas and to obey no-smoking signs. Frequent and systematic checking of lavatories and the smoke detectors and other areas which are not part of the seating accommodation are also to be conducted.

#### 4.5 ABUSIVE PASSENGERS

4.5.1 The AOC holder should give advice to cabin crew on the management of passengers who become abusive; this often arises from excessive consumption of alcohol or the effects of medication/drugs, or a combination of both.

#### 4.6 SEAT ALLOCATION

4.6.1 Cabin crew should be given training on the importance of correct seat allocation with particular emphasis on the seating of passengers with special needs and the necessity of seating able-bodied passengers adjacent to unsupervised exits.

#### 4.7 PROHIBITED AND DANGEROUS ITEMS

4.7.1 Cabin crew should be given training in aspects of the carriage of prohibited and dangerous goods and the handling of in-flight dangerous goods incident.

#### 4.8 FATIGUE RISK MANAGEMENT

4.8.1 Cabin crew should be familiarised with the AOC holder's fatigue risk management scheme and the statutory requirements regarding crew fatigue risk management (see Part 2 Division 11 of ANR-121).

#### 4.9 AIRCRAFT SAFETY ON THE RAMP

4.9.1 Training should be given in the following areas:

- (a) Selection and implementation of appropriate rapid disembarkation or evacuation measures;
- (b) The need for an external means of disembarkation to be available from the time an aircraft comes on a stand until it departs, excluding periods when there are no persons on board;
- (c) The need to ascertain the availability of an aerobridge or steps before deciding the best method to use;
- (d) Specific procedures for alerting of emergency services when an incident occurs during routine embarkation/disembarkation of passengers and when passengers are on board and the aircraft is parked; and
- (e) Emergency procedures for the rapid disembarkation of occupants of an out of service aircraft should the need arise.

#### 4.10 PASSENGER BRIEFINGS

4.10.1 Training and practice should be provided for conducting the pre-flight briefing of passengers in normal and emergency situations, including impact landings on ground or water (ditching), demonstrating the brace position and the briefing of able-bodied passengers on how to operate the emergency exits.

4.10.2 Training should also be given for the conduct of pre-flight safety briefings to handicapped passengers.

#### 4.11 CABIN BAGGAGE AND CABIN CLUTTER

4.11.1 Cabin crew should be instructed that cabin baggage, service items and other objects are only to be stowed in designated areas such that they are restrained from forward, lateral and vertical movement. They must not be stowed in such a way as to obstruct or damage emergency equipment or exits. Training is to include the areas of the cabin that are approved for the stowage of cabin baggage or other items and the areas where it would be unsafe to do so.

#### 4.12 BRACE POSITIONS

4.12.1 Training and practice should be given in the correct brace positions for both crew and passengers. Such training should take into account different seating configurations and orientation.

#### 4.13 EVACUATION PROCEDURE AND EMERGENCY SITUATIONS

4.13.1 Training on emergency evacuation is to include the recognition of particular types of emergency situations. A cabin crew needs to recognise when exits are unusable or when evacuation equipment become unserviceable and to act accordingly to overcome these problems. Circumstances might arise, such as the incapacitation of the flight crew, where these drills need to be initiated by cabin crew.

4.13.2 Cabin crew should be trained to deal with the following specific emergency situations:

- (a) An emergency on take-off or landing and ditching;
- (b) An in-flight fire, with particular emphasis on establishing the fire source;

- (c) Sudden decompression, including the donning of portable oxygen equipment; and
- (d) Severe turbulence.

#### 4.14 CROWD CONTROL

4.14.1 The AOC holder should provide comprehensive training on the practical application of all aspects of crowd control techniques in various emergency evacuation situations. The training should also emphasise the need for cabin crew to be assertive and, at times, aggressive during an emergency evacuation. The training scenarios should be as realistic as possible and should include, as a minimum:

- (a) communication between flight crew and cabin crew and use of all communications equipment, including the difficulties of co-ordination in a smoke-filled environment;
- (b) verbal commands;
- (c) the physical contact that may be needed to direct passengers out of an exit and on to a slide;
- (d) the re-direction of passengers away from unusable exits;
- (e) the re-direction of passengers to usable exits and/or to under-used (dried-up) exits, even if usable exits have to be by-passed;
- (f) the marshalling of passengers away from the aircraft;
- (g) the evacuation of disabled passengers; and
- (h) authority and leadership.

4.14.2 The executive order to initiate an emergency evacuation is to be given by the pilot-in-command in English (e.g. "Evacuate, Evacuate"). Cabin crew of a particular nationality, if carried on board where passenger demography so requires, should be able to repeat the evacuation order and commands in their native language if the need arises (e.g. Japanese, Korean, Bahasa Indonesia).

#### 4.15 PILOT INCAPACITATION

4.15.1 All cabin crew should be given training in recognising the signs of subtle incapacitation and practise the ways in which they can be of help in the event of pilot incapacitation. The cabin crew should also be taught on the principle of pilot incapacitation drills which includes the following:

- (a) the need to use the pilot's oxygen equipment;
- (b) fastening and unfastening pilot's seat harness and, in the case of inertia and harness, locking and unlocking the inertia device; and
- (c) using pilot's sliding seat mechanism; and "locking" the pilot in his seat rather than on removing him from the seat, which may not in the event be possible.

## **5 AIRCRAFT TYPE TRAINING – ALL CREW**

### **5.1 GENERAL**

- 5.1.1 An AOC holder should ensure that comprehensive training is given on the operating procedures and the location and use of all emergency and survival equipment to be carried on the aircraft, and that all emergency training is related to the aircraft type, series and configuration to be operated. The relevant aircraft type training must be given to all newly employed crew as part of their introduction training and to those who are transiting to a new aircraft type as part of their transition training.

Note: The actual use of safety equipment and training of operating procedures need not be repeated for crew who are still currently flying with the AOC holder and have covered the same type of safety equipment and procedures in previous training provided by the AOC holder.

### **5.2 EMERGENCY AND SURVIVAL EQUIPMENT**

- 5.2.1 Training must be given on the location and use of all emergency and survival equipment together with the relevant drills and procedures. The following must be included:

- (a) emergency exits including its normal operation;
- (b) escape slides and, where non self-supporting slides are carried, the use of any associated ropes;
- (c) life-rafts and slide-rafts, including the equipment attached to and/or carried in the raft;
- (d) life-jackets, infant life-jackets and/or flotation cots;
- (e) drop-out oxygen and its manual deployment;
- (f) emergency and therapeutic oxygen;
- (g) protective breathing equipment and protective clothing;
- (h) fire extinguishers;
- (i) fire axes;
- (j) portable lights including torches;
- (k) emergency lighting systems, including floor proximity lighting systems;
- (l) communications equipment, including megaphones;
- (m) cabin crew stations;
- (n) survival packs, including their contents;
- (o) pyrotechnics;

- (p) first aid kits, medical kits and their contents;
- (q) toilet compartment smoke detector systems;
- (r) evacuation alarm systems; and
- (s) non-mandatory or special equipment fitted or carried.

5.2.2 Before a crew commences line flying, the AOC holder will familiarise the crew on the aircraft's cabin safety features and the location and complement of its safety equipment via a visit to an actual aircraft, that is of the type that the crew is being trained for.

5.2.3 CAAS may approve the AOC holder to use an aircraft virtual tool in lieu of a visit to an actual aircraft to train a crew described in paragraph 5.2.4 –

- (a) if the aircraft virtual tool is one that depicts an actual cabin configuration of the AOC holder's aircraft type, in terms of aircraft safety features, the location and the complement of safety equipment, egress from various compartments such as flight deck and crew rest areas, and all equipment as specified in paragraph 5.2.1;
- (b) if the aircraft virtual tool provides a similar representation of the drills and procedures as if it were a visit to an actual aircraft; and
- (c) if the AOC holder's gap analysis and Qualitative Safety Risk Assessment (QSRA) show that the safety risk levels are acceptable in accordance with the AOC holder's SMS.

5.2.4 The aircraft virtual tool described in paragraph 5.2.3 may only be used in lieu of a visit to an actual aircraft for –

- (a) a cabin crew who –
  - (i) has at least one year of current operational experience; and
  - (ii) is not being trained –
    - (A) from a narrow-body aircraft type to a wide-body aircraft type;
    - (B) from an aircraft type with a single passenger deck to one with double passenger deck;
    - (C) from an aircraft type by one aircraft manufacturer to one that is by another aircraft manufacturer; or
    - (D) on an aircraft type new to the AOC holder, unless approved by the DGCA;

and

- (b) a flight crew who –
  - (i) has at least –



- (A) one year of current operational experience with the AOC holder;  
or
  - (B) at least operational experience of more than 1 year within the last 5 years with another Singapore AOC holder; and
- (ii) is not being trained –
- (A) from a narrow-body aircraft type to a wide-body aircraft type; or
  - (B) from an aircraft type with a single passenger deck to one with double passenger deck.

### 5.3 FIRE TRAINING

5.3.1 Training should be given on extinguishing a fire, representative of an interior aircraft fire using the relevant type of fire extinguisher carried on the aircraft. Emphasis should be placed on the characteristics of different types of extinguishers, including their effective range and duration and the effectiveness of their use on differing types of fires.

### 5.4 PROTECTIVE BREATHING EQUIPMENT AND PROTECTIVE CLOTHING

5.4.1 Crew members should be trained on the use of protective breathing equipment and if applicable protective clothing. Donning and wearing of such equipment and clothing should be practised in an enclosed, simulated smoke-filled environment.

## 6 AIRCRAFT TYPE TRAINING - ADDITIONAL ITEMS FOR CABIN CREW

### 6.1 PRACTICAL TRAINING

6.1.1 The following are the minimum levels of training necessary to satisfy the relevant requirements for cabin crew aircraft type training:

- (a) during exit operation training, each trainee operates and opens all exits in normal and emergency mode in accordance with the approved training programme;
- (b) during ditching and evacuation drills (if required), each trainee operates and opens the exits in applicable emergency mode in accordance with the approved training programme;
- (c) other practical training each trainee should undergo include the following:
  - (i) attach escape slide fittings in the appropriate places;
  - (ii) descend an escape slide from a height representative of the aircraft main deck sill height (not required for subsequent type training unless sill height is significantly higher);
  - (iii) locate and operate a megaphone;
  - (iv) remove a life-raft from stowage and position it in the launching area, if practicable, or participates in a simulation of such an exercise;

- (v) locate and remove from stowage an aircraft first aid kit and a fire extinguisher;
  - (vi) handle and is trained on the use of each type of fire extinguisher carried on the aircraft;
  - (vii) practice the donning of oxygen masks carried in the aircraft; and
  - (viii) be familiarised with the use of the aircraft public address (PA) and interphone system.
- (d) each trainee should also view a demonstration of the following:
- (i) an escape rope being used as a means of emergency evacuation;
  - (ii) the inflation or release, as applicable, of an escape slide;
  - (iii) inflation of a life-raft;
  - (iv) the survival equipment contained in the life-raft;
  - (v) the contents and use of the first aid kit, medical kit, universal precaution kit, response kit and application of guidance in ICAO 9481 N/928 – Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods;
  - (vi) administering supplemental crew and passenger oxygen by portable equipment; and
  - (vii) the use of each type of fire extinguishers carried on the aircraft on various types of fire including simulated electrical, cabin furnishing and galley fires. The demonstration should also show the effect of misapplication of agents.

## 6.2 PILOT INCAPACITATION

6.2.1 All cabin crew should be given training on the following, specific to the aircraft type:

- (a) use of pilot's oxygen equipment;
- (b) fastening and unfastening pilot's seat harness and in the case of inertia reel harness, locking and unlocking the inertia device; and
- (c) using the pilot's sliding seat mechanism. Training is to be given with the seat occupant simulated physically collapsed. Emphasis to be placed on 'locking' the pilot in his seat rather than removing on him from the seat, which may not in the event be possible.

## 6.3 PASSENGER BRIEFING ON SELF HELP EXITS

6.3.1 Training and practice should be given to cabin crew on briefing the passengers on the items required in regulation 18 of ANR-121, including the operations of self-help exits applicable to the aircraft type.

## 6.4 CABIN BAGGAGE AND CABIN CLUTTER

- 6.4.1 Training should include the areas of the cabin that are designated for the stowage of cabin baggage or other items and the areas where it would be unsafe to do so.

## 6.5 BRACE POSITIONS

- 6.5.1 Training and practice should be given in the correct brace position for both cabin crew and passenger taking into account different seating configurations and orientation applicable to the aircraft type.

## 6.6 SUPERNUMERARY SECTORS

- 6.6.1 As required by regulation 162 of ANR-121, upon completion of emergency and survival training and prior to operating as a crew member, the cabin crew member has to operate a minimum of two supernumerary sectors on the aircraft type the crew is to operate in. The supernumerary cabin crew is in addition to the normal crew complement, except under the situations described in paragraph 6.6.2.

Note: Subject to the DGCA's approval, the requirements of paragraph 6.6.1 above may not be repeated for crew who are still currently flying with the operator and have covered or trained in similar procedures in previous training provided by the same operator.

- 6.6.2 The operating experience required by regulation 162 of ANR-121 should be acquired under the supervision of an appropriately qualified instructor when all the crew members are new in relation to:

- (a) the aircraft type; or
- (b) the AOC holder.

## 7 RECURRENT TRAINING - ALL CREW

- 7.1 An AOC holder should ensure that an organised course of recurrent training is provided for all crew to prepare for the SEP Checks (SEPC) required in regulation 168 of ANR-121. Such training will have the additional advantage of allowing crew to discuss recent incidents, difficulties and emergencies which have been experienced. If none has arisen, the operator should discuss possible scenarios with emphasis on the actions to be taken. Time should be allocated for this purpose. This discussion is particularly important when a cabin crew is assigned to more than one type of aircraft.

- 7.2 The recurrent training should also include the following scope:

- (a) knowledge on human performance as related to cabin safety duties including flight crew-cabin crew coordination;
- (b) reinforcement of Crew Resource Management; and
- (c) first aid.

- 7.3 Practical training in fulfilment of regulation 150 of ANR-121 should be conducted in a practical and reasonable manner to reflect the actual movements and operations assigned to the respective crew member during evacuation and other emergencies. A

crew member should be assessed on the proficiency in carrying out emergency duties. Such practical training should include the use of emergency and life-saving equipment required to be carried, such as life jackets, life rafts, evacuation slides, emergency exits, portable fire extinguishers, oxygen equipment/masks, protective breathing equipment, first-aid, medical and universal precaution kits. Touch drills for opening emergency exits are acceptable.

7.4 Recurrent training for each crew member should include practical training at least once every 24 months on the following:

- (a) the normal and emergency operation and actual opening of all emergency exits used for crew and passenger evacuation;
- (b) the use of fire extinguishers to extinguish a fire under conditions that would be representative of an aircraft interior fire with each type of fire extinguisher carried on board the aircraft except that, in the case of Halon extinguishers, an alternative extinguishing agent may be used;
- (c) the donning and use of protective breathing equipment by each crew member in an enclosed, simulated smoke-filled environment; and
- (d) the boarding of a dinghy or raft from the water whilst wearing a life jacket.

## **8 RECURRENT TRAINING – ADDITIONAL ITEMS FOR CABIN CREW**

8.1 Cabin crew should show a satisfactory knowledge of crowd control techniques, and if applicable, their role in the event of pilot incapacitation. Cabin crew should also undertake first aid training and appropriate written test.

8.2 In addition to the practical training required under paragraph 7.4, each cabin crew member should undergo recurrent training annually which includes practical training on the following:

- (a) the use of an emergency exit and emergency evacuation slide representative to the highest of the aircraft main deck sill height operated by the cabin crew;
- (b) the use of each type of extinguishers carried on board the aircraft;
- (c) practical rescue breathing and cardiopulmonary resuscitation using a dummy specifically designed for the purpose;
- (d) the boarding of a slide raft or life raft with a life jacket;
- (e) the use of first-aid, medical and universal precaution kits and the response kit; and
- (f) the application of guidance for dangerous goods emergency in ICAO 9481 N/928.