

**PART 8— IMPLEMENTING STANDARDS**

**FEDERATED STATES OF MICRONESIA**

**2001**

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## Contents

<b>PART 8—IMPLEMENTING STANDARDS</b> .....	IS: 8-i
IS: 8.2.1.5 Inoperative Instruments and Equipment.....	IS: 8-1
IS: 8.8.1.7 Instrument Approach Operating Minima.....	IS: 8-1
IS: 8.8.1.9 Category II and III Manual.....	IS: 8-2
IS: 8.8.1.28 Interception of civil aircraft.....	IS: 8-2
IS: 8.8.2.11 Universal Aviation Signals.....	IS: 8-6
IS: 8.8.3.4 Table of Cruising Levels.....	IS: 8-8
IS: 8.10.1.9 Company Procedures Indoctrination.....	IS: 8-10
IS: 8.10.1.10 Initial Dangerous Goods Training.....	IS: 8-11
IS: 8.10.1.12 Initial Crew Resource Management Training.....	IS: 8-13
IS: 8.10.1.13 Initial Emergency Equipment Drills.....	IS: 8-15
IS: 8.10.1.14(b) Initial Aircraft Ground Training—Flight crew.....	IS: 8-19
IS: 8.10.1.14 (c) Initial Aircraft Ground Training - Cabin Crew members.....	IS: 8-27
IS: 8.10.1.15(d) Initial Aircraft Ground Training —Flight Operations Officer.....	IS: 8-31
IS: 8.10.1.15 Initial Aircraft Flight Training.....	IS: 8-33
IS: 8.10.1.16 Initial Specialised Operations Training.....	IS: 8-40
IS: 8.10.1.17 Aircraft Differences.....	IS: 8-40
IS: 8.10.1.20 Aircraft and Instrument Proficiency Check— Pilot.....	IS: 8-41
IS: 8.10.1.22 Pairing of Low Experience Crew Members.....	IS: 8-42
IS: 8.10.1.24 Competence Checks—Cabin Crew members.....	IS: 8-42
IS: 8.10.1.33 Recurrent Training—Flight crew.....	IS: 8-44
IS: 8.10.1.34 Recurrent Normal and Emergency Training—Cabin Crew members.....	IS: 8-50
IS: 8.10.1.35 Recurrent Training—Flight Operations Officer.....	IS: 8-53
IS: 8.10.1.37 Flight Instructor Training.....	IS: 8-53
IS: 8.10.1.40 Check Airman Training.....	IS: 8-55
IS: 8.11.1.2 Duty and Rest Periods.....	IS: 8-57

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**IS: 8.2.1.5 INOPERATIVE INSTRUMENTS AND EQUIPMENT**

- (a) This implementing standard authorises flight operations with inoperative instruments and equipment installed in situations where no master minimum equipment list (MMEL) is available and no MEL is required for the specific aircraft operation under these regulations.
- (b) The inoperative instruments and equipment may not be—
  - (1) Part of the VFR-day instruments and equipment prescribed in Part 7;
  - (2) Required on the aircraft's equipment list or the operations equipment list for the kind of flight operation being conducted;
  - (3) Required by Part 7 for the specific kind of flight operation being conducted; or
  - (4) Required to be operational by an airworthiness directive.
- (c) To be eligible for these provisions, the inoperative instruments and equipment shall be—
  - (1) Determined by the PIC not to be a hazard to safe operation;
  - (2) Deactivated and placarded *Inoperative*; and

*Note: If deactivation of the inoperative instrument or equipment involves maintenance, it must be accomplished and recorded in accordance with Part 5.*

- (3) Removed from the aircraft, the flight deck control placarded and the maintenance recorded in accordance with Part 5.

14 CFR: 91.213(b)(d), 121.628(b), 91.9

*Note: The required instruments and equipment for specific operations are listed in Part 7.*

**IS: 8.8.1.7 INSTRUMENT APPROACH OPERATING MINIMA**

- (a) Each operator establishing aerodrome-operating minima shall have its method for determining such minima approved by the Authority.
- (b) Each operator's method for determining aerodrome-operating minima shall accurately account for —
  - (1) The type, performance and handling characteristics of the aircraft;
  - (2) The composition and experience of the flight crew;
  - (3) The dimensions and characteristics of the runways selected for use;
  - (4) Aircraft equipment used for navigation and aircraft control during the approach to landing and the missed approach;
  - (5) Obstacles in the approach and missed approach areas and the obstacle clearance altitude/height for the intended instrument approach procedures;
  - (6) The means used to determine and report meteorological conditions; and

- (7) The obstacles in the climb out areas and the necessary clearance margins.
- (8) The adequacy and performance of the available visual and non-visual ground aids.
- (9) The declared distances, for helicopters.

ICAO Annex 6, Part I: 4.2.7.2  
ICAO Annex 6, Part III, Section II: 2.2.7.2

#### IS: 8.8.1.9 CATEGORY II AND III MANUAL

- (a) *Application for approval.* An applicant for approval of a Category II or III manual or an amendment to an approved Category II manual shall submit the proposed manual or amendment to the Authority. If the application requests an evaluation programme, it shall include the following:
  - (1) The location of the aircraft and the place where the demonstrations are to be conducted.
  - (2) The date the demonstrations are to commence (at least 10 days after filing the application).
- (b) *Contents.* Each Category II or III manual must contain:
  - (1) The registration mark, make, and model of the aircraft to which it applies.
  - (2) A maintenance programme.
  - (3) The procedures and instructions related to recognition of DH, use of runway visual range (RVR) information, approach monitoring, the decision region (the region between the middle marker and the decision height), the maximum permissible deviations of the basic ILS indicator within the decision region, a missed approach, use of airborne low approach equipment, minimum altitude for the use of the autopilot, instrument and equipment failure warning systems, instrument failure, and other procedures, instructions, and limitations that may be found necessary by the Authority.

ICAO Annex 6, Part I: 4.2.7.3  
ICAO Annex 6, Part III, Section II: 2.2.7.3  
14 CFR: Part 91, Appendix A

*Note: Category II approval is required prior to obtaining Category III approval.*

#### IS: 8.8.1.28 INTERCEPTION OF CIVIL AIRCRAFT

- (a) Federated States of Micronesia shall observe the following principles regarding the interception of civil aircraft.
  - (1) Interception of civil aircraft will be undertaken only as a last resort.
  - (2) If undertaken, an interception will be limited to determining the identity of the aircraft, unless it is necessary to return the aircraft to its planned track, direct it beyond the boundaries of national airspace, guide it away from a prohibited, restricted or danger area or instruct it to effect a landing at a designated aerodrome.
  - (3) Practice interception of civil aircraft will not be undertaken.
  - (4) Navigational guidance and related information will be given to an intercepted aircraft by radiotelephony, whenever radio contact can be established.

- (5) In the case where an intercepted civil aircraft is required to land in the territory overflowed, the aerodrome designated for the landing is to be suitable for the safe landing of the aircraft type concerned.

*Note: In the unanimous adoption by the 25th Session (Extraordinary) of the ICAO Assembly on 10 May 1984 of Article 3 bis to the Convention on International Civil Aviation, the Contracting States have recognised that "every State must refrain from resorting to the use of weapons against civil aircraft in flight."*

- (b) Federated States of Micronesia shall ensure that:
  - (1) A standard method has been established and made available to the public for the manoeuvring of aircraft intercepting a civil aircraft that is designed to avoid any hazard for the intercepted aircraft.
  - (2) Provision is made for the use of secondary surveillance radar, where available, to identify civil aircraft in areas where they may be subject to interception.
- (c) The PIC of an aircraft that is intercepted by another aircraft shall immediately:
  - (1) Follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with the specifications in item (e) below.
  - (2) Notify, if possible, the appropriate air traffic services unit.
  - (3) Attempt to establish radio communication with the intercepting aircraft or with the appropriate intercept control unit. By making a general call on the emergency frequency 121.5 MHz, giving the identity of the intercepted aircraft and the nature of the flight; and if no contact has been established and if practicable, repeating this call on the emergency frequency 243 MHz.
  - (4) If equipped with SSR transponder, select Mode A, Code 7700, unless otherwise instructed by the appropriate air traffic services unit.
- (d) If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signals, the PIC of the intercepted aircraft shall request immediate clarification while continuing to comply with the visual instructions given by the intercepting aircraft.
- (e) If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by radio, the PIC of the intercepted aircraft shall request immediate clarification while continuing to comply with the radio instructions given by the intercepting aircraft.
- (f) Radio communication during interception. If radio contact is established during interception but communication in a common language is not possible, the PIC of each involved aircraft shall attempt to convey instructions, acknowledgement of instructions and essential information by using the phrases and pronunciations in the table below and transmitting each phrase twice:

Phrases for use by INTERCEPTING aircraft			Phrases for use by INTERCEPTED aircraft		
Phrase	Pronunciation 1	Meaning	Phrase	Pronunciation 1	Meaning
CALL SIGN	<u>KOL</u> SA-IN	What is your call sign?	CALL SIGN (call sign) <sup>2</sup>	<u>KOL</u> SA-IN (call sign)	My call sign is (call sign)
FOLLOW	<u>FOL</u> -LO	Follow me	WILCO	<u>VILL</u> -KO	Understood Will comply
DESCEND YOU LAND	DEE- <u>SEND</u> <u>YOU LAAND</u>	Descend for landing Land at this aerodrome	CAN NOT REPEAT	<u>KANN</u> NOTT <u>REE-PEET</u>	Unable to comply Repeat your instruction
PROCEED	PRO- <u>SEED</u>	You may proceed	AM LOST MAYDAY HIJACK <sup>3</sup> LAND. (place name)	<u>AM LOSST</u> <u>MAYDAY</u> <u>HI-JACK</u> LAAND (place name)	Position unknown I am in distress I have been hijacked I request to land at (place name)
			DESCEND	DEE- <u>SEND</u>	I require descent
<p>1. In the second column, syllables to be emphasised are underlined.</p> <p>2. The call sign required to be given is that used in radiotelephone, communications with air traffic services units and corresponding to the aircraft identification in the flight plan.</p> <p>3. Circumstances may not always permit, nor make desirable, the use of the phrase "HIJACK".</p>					

- (g) The following signals shall be used by the pilots of each involved aircraft in the event of interception. Signals initiated by intercepting aircraft and responses by intercepted aircraft.

Series	INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
1	<p>DAY or NIGHT — Rocking aircraft and flashing navigational lights at irregular intervals (and landing lights in the case of a helicopter) from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft (or to the right if the intercepted aircraft is a helicopter) and, after acknowledgement, a slow level turn, normally to the left, (or to the right in the case of a helicopter) on the desired heading.</p> <p><i>Note: Meteorological conditions or terrain may require the intercepting aircraft to reverse the positions and direction of turn given above in Series 1.</i></p> <p><i>Note: If the intercepting aircraft is not able to keep pace with the intercepting aircraft, the latter is expected to fly a series of race-track patterns and to rock the aircraft each time it passes the intercepted aircraft.</i></p>	<p>You have been intercepted. Follow me.</p>	<p>DAY or NIGHT - Rocking aircraft. flashing navigational lights at irregular intervals and following.</p>	<p>Understood, will comply.</p>
2	<p>DAY or NIGHT — An abrupt break-away manoeuvre from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.</p>	<p>You may proceed.</p>	<p>DAY or NIGHT - Rocking the aircraft.</p>	<p>Understood, will comply.</p>
3	<p>DAY or NIGHT — Lowering landing gear (if fitted), showing steady landing lights and overflying runway in use or, if the intercepted aircraft is a helicopter, overflying the helicopter landing area. In the case of helicopters, the intercepting helicopter makes a landing approach, coming to hover near the landing area.</p>	<p>Land at this aerodrome.</p>	<p>DAY or NIGHT - Lowering landing gear (if fitted), showing steady landing lights and following the intercepting aircraft and, if, after overflying the runway in use or helicopter landing area, landing is considered safe, proceeding to land.</p>	<p>Understood, will comply.</p>

(h) Signals initiated by intercepted aircraft and responses by intercepting aircraft.

Series	INTERCEPTED Aircraft Signals	Meaning	INTERCEPTING Aircraft Responds	Meaning
4	DAY or NIGHT — Raising landing gear (if fitted) and flashing landing lights while passing over runway in use or helicopter landing area at a height exceeding 300 m (1,000 ft) but not exceeding 600 m (2,000 ft) (in the case of a helicopter, at a height exceeding 50 m (170 ft) but not exceeding 100 m (330 ft) above the aerodrome level, and continuing to circle runway in use or helicopter landing area. If unable to flash landing lights, flash any other lights available.	Aerodrome you have designated is inadequate.	DAY or NIGHT — If it is desired that the intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear (if fitted) and uses the Series 1 signals prescribed for intercepting aircraft. If it is decided to release the intercepted aircraft, the intercepting aircraft uses the Series 2 signals prescribed for intercepting aircraft.	Understood, follow me. Understood, you may proceed.
5	DAY or NIGHT — Regular switching on and off of all available lights but in such a manner as to be distinct from flashing lights.	Cannot comply.	DAY or NIGHT — Use Series 2 signals prescribed for intercepting aircraft.	
6	DAY or NIGHT — Irregular flashing of all available lights.	In distress.	DAY or NIGHT — Use Series 2 signals prescribed for intercepting aircraft.	Understood

.ICAO Annex 2: Appendix 1: 2.1; 2.2; Appendix 2, 2.0; 3.0 and Table 2.1

### IS: 8.8.2.11 UNIVERSAL AVIATION SIGNALS

(a) Distress signals. The following signals, used either together or separately, mean that grave and imminent danger threatens, and immediate assistance is requested:

*Note: None of the provisions in this section shall prevent the use, by an aircraft in distress, of any means at its disposal to attract attention, make known its position and obtain help.*

*Note: For full details of telecommunication transmission procedures for the distress and urgency signals, see ICAO Annex 10, Volume II, Chapter 5.*

*Note: For details of the search and rescue visual signals, see ICAO Annex 12.*

- (1) A signal made by radiotelegraphy or by any other signalling method consisting of the group SOS ( · · · — — — · · · in the Morse Code).
- (2) A signal sent by radiotelephony consisting of the spoken word MAYDAY.
- (3) Rockets or shells throwing red lights, fired one at a time at short intervals.
- (4) A parachute flare showing a red light.

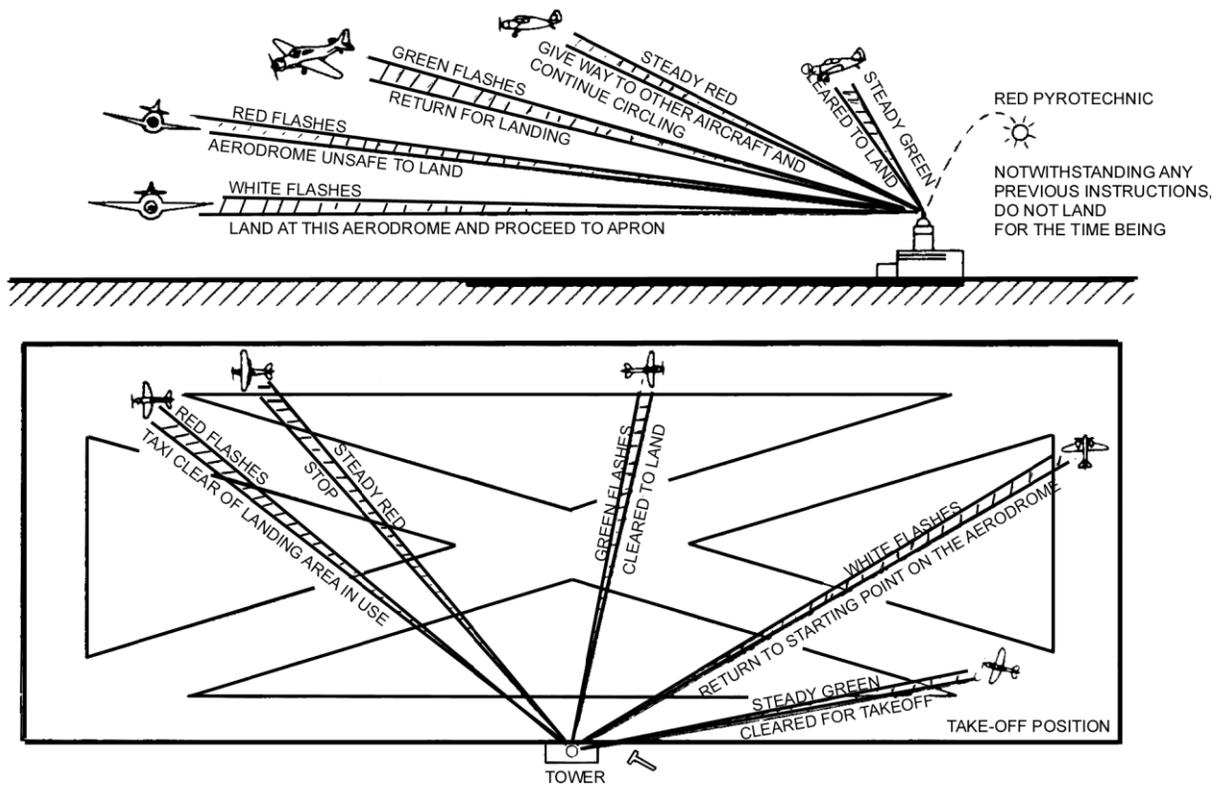
*Note: Article 41 of the ITU Radio Regulations (Nos. 3268, 3270 and 3271 refer) provides information on the alarm signals for actuating radiotelegraph and radiotelephone auto-alarm systems: 3268 The radiotelegraph alarm signal consists of a series of twelve dashes sent in one minute, the duration of each dash being four seconds and the duration of the interval between consecutive dashes one second. It may be transmitted by hand but its transmission by means of an automatic instrument is recommended. 3270 The radiotelephone alarm signal consists of two substantially sinusoidal audio frequency tones transmitted alternately. One tone shall have a frequency of 2 200 Hz and the other a frequency of 1 300 Hz, the duration of each tone being 250 milliseconds. 3271 The radiotelephone alarm signal, when generated by automatic means, shall be sent continuously for a period of at least thirty seconds but not exceeding one minute; when generated by other means, the signal shall be sent as continuously as practicable over a period of approximately one minute.*

- (b) The following signals, used either together or separately, mean that an aircraft wishes to give notice of difficulties which compel it to land without requiring immediate assistance:
  - (1) The repeated switching on and off of the landing lights; or
  - (2) The repeated switching on and off of the navigation lights in such manner as to be distinct from flashing navigation lights.
- (c) The following signals, used either together or separately, mean that an aircraft has a very urgent message to transmit concerning the safety of a ship, aircraft or other vehicle, or of some person on board or within sight:
  - (1) A signal made by radiotelegraphy or by any other signalling method consisting of the group XXX.
  - (2) A signal sent by radiotelephony consisting of the spoken words PAN, PAN.
- (d) Visual signals used to warn an unauthorised aircraft. By day and by night, a series of projectiles discharged from the ground at intervals of 10 seconds, each showing, on bursting, red and green lights or stars will indicate to an unauthorised aircraft that it is flying in or about to enter a restricted, prohibited, or danger area, and that the aircraft is to take such remedial action as may be necessary.
- (e) Signals for aerodrome traffic. Aerodrome controllers shall use and pilots shall obey the following light and pyrotechnic signals:

Light		From Aerodrome Control to:	
		Aircraft in flight	Aircraft on the ground
Directed towards aircraft concerned (See Figure 1.1)	Steady green.	Cleared to land.	Cleared for takeoff.
	Steady red.	Give way to other aircraft and continue circling.	Stop
	Series of green flashes.	Return for landing*.	Cleared to taxi.
	Series of red flashes.	Aerodrome unsafe, do not land.	Taxi clear of landing area in use.
	Series of white flashes	Land at this aerodrome and proceed to apron*.	Return to starting point on the aerodrome
	Red pyrotechnic	Notwithstanding any previous instructions, do not land for the time being	

\* Clearances to land and to taxi will be given in due course.

Figure 8.1



(f) Pilots shall acknowledge aerodrome controller signals as follows:

(1) When in flight—

(i) During the hours of daylight by rocking the aircraft's wings.

*Note: This signal should not be expected on the base and final legs of the approach.*

(ii) During the hours of darkness by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

(2) When on the ground—

(i) During the hours of daylight by moving the aircraft's ailerons or rudder.

(ii) During the hours of darkness by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

(g) Aerodrome authorities shall use the following visual ground signals during the following situations:

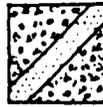
- (1) *Prohibition of landing.* A horizontal red square panel with yellow diagonals (Figure 8.2) when displayed in a signal area indicates that landings are prohibited and that the prohibition is liable to be prolonged.

Figure 8.2



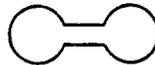
- (2) *Need for special precautions while approaching or landing.* A horizontal red square panel with one yellow diagonal (Figure 8.3) when displayed in a signal area indicates that owing to the bad state of the manoeuvring area, or for any other reason, special precautions must be observed in approaching to land or in landing.

Figure 8.3



- (3) *Use of runways and taxiways.*
- (i) A horizontal white dumb-bell (Figure 8.4) when displayed in a signal area indicates that aircraft are required to land, take off and taxi on runways and taxiways only.

Figure 8.4



- (ii) The same horizontal white dumb-bell as in Figure 8.4, but with a black bar placed perpendicular to the shaft across each circular portion of the dumb-bell (Figure 8.5) when displayed in a signal area indicates that aircraft are required to land and take off on runways only, but other manoeuvres need not be confined to runways and taxiways.

Figure 8.5



- (4) *Closed runways or taxiways.* Crosses of a single contrasting colour, yellow or white (Figure 8.6), displayed horizontally on runways and taxiways or parts thereof indicate an area unfit for movement of aircraft.

Figure 8.6

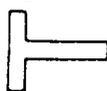


- (5) *Directions for landing or takeoff.*

- (i) A horizontal white or orange landing T (Figure 8.7) indicates the direction to be used by aircraft for landing and rake-off, which shall be in a direction parallel to the shaft of the T towards the cross arm.

*Note: When used at night, the landing T is either illuminated or outlined in white coloured lights.*

**Figure 8.7**



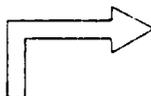
- (ii) A set of two digits (Figure 8.8) displayed vertically at or near the aerodrome control tower indicates to aircraft on the manoeuvring area the direction for takeoff, expressed in units of 10 degrees to the nearest 10 degrees of the magnetic compass.

**Figure 8.8**



- (6) *Right-hand traffic.* When displayed in a signal area, or horizontally at the end of the runway or strip in use, a right-hand arrow of conspicuous colour (Figure 8.9) indicates that turns are to be made to the right before landing and after takeoff.

**Figure 8.9**



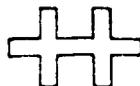
- (7) *Air traffic services reporting office.* The letter C displayed vertically in black against a yellow background (Figure 8.10) indicates the location of the air traffic services reporting office.

**Figure 8.10**



- (8) *Glider flights in operation.* A double white cross displayed horizontally (Figure 8.11) in the signal area indicates that the aerodrome is being used by gliders and that glider flights are being performed.

**Figure 8.11**



- (h) The following marshalling signals shall be used from a signalman to an aircraft.

*Note: These signals are designed for use by the signalman, with hands illuminated as necessary to facilitate observation by the pilot, and facing the aircraft in a position:*

- (1) For fixed-wing aircraft, the signalman shall be positioned forward of the left-wing tip within view of the pilot and, for helicopters, where the signalman can best be seen by the pilot.

Note: The meaning of the relevant signals remains the same if bats, illuminated wands or torchlights are held.

Note: The aircraft engines are numbered, for the signalman facing the aircraft, from right to left (i.e. No. 1 engine being the port outer engine).

Note: Signals marked with an asterisk are designed for use to hovering helicopters.

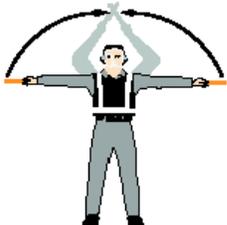
- (2) Prior to using the following signals, the signalman shall ascertain that the area within which an aircraft is to be guided is clear of objects which the aircraft might otherwise strike.

Note: The design of many aircraft is such that the path of the wing tips, engines and other extremities cannot always be monitored visually from the flight deck while the aircraft is being manoeuvred on the ground.

	<p><b>1. Wingwalker/guide</b></p> <p>Raise right hand above head level with wand pointing up; move left-hand wand pointing down toward body. Note.— This signal provides an indication by a person positioned at the aircraft wing tip to the pilot/ marshaller/ push-back operator that the aircraft movement on/off a parking position would be unobstructed.</p>
	<p><b>2. Identify gate</b></p> <p>Raise fully extended arms straight above head with wands pointing up.</p>
	<p><b>3. Proceed to next signalman or as directed by tower/ground control</b></p> <p>Point both arms upward; move and extend arms outward to sides of body and point with wands to direction of next signalman or taxi area.</p>
	<p><b>4. Straight ahead</b></p> <p>Bend extended arms at elbows and move wands up and down from chest height to head.</p>

	<p><b>5 a). Turn left (from pilot's point of view)</b></p> <p>With right arm and wand extended at a 90-degree angle to body, make "come ahead" signal with left hand. The rate of signal motion indicates to pilot the rate of aircraft turn.</p>
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	<p><b>5 b). Turn right (from pilot's point of view)</b></p> <p>With left arm and wand extended at a 90-degree angle to body, make "come ahead" signal with right hand. The rate of signal motion indicates to pilot the rate of aircraft turn.</p>
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	<p><b>6 a). Normal stop</b></p> <p>Fully extend arms and wands at a 90-degree angle to sides and slowly move to above head until wands cross.</p>
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	<p><b>6 b). Emergency stop</b></p> <p>Abruptly extend arms and wands to top of head, crossing wands.</p>
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	<p><b>7 a). Set brakes</b></p> <p>Raise hand just above shoulder height with open palm. Ensuring eye contact with flight crew, close hand into a fist. Do not move until receipt of "thumbs up" acknowledgement from flight crew.</p>
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	<p><b>7 b). Release brakes</b></p> <p>Raise hand just above shoulder height with hand closed in a fist. Ensuring eye contact with flight crew, open palm. Do not move until receipt of "thumbs up" acknowledgement from flight crew.</p>
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	<p><b>8 a). Chocks inserted</b></p> <p>With arms and wands fully extended above head, move wands inward in a “jabbing” motion until wands touch. Ensure acknowledgement is received from flight crew.</p>
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	<p><b>8 b). Chocks removed</b></p> <p>With arms and wands fully extended above head, move wands outward in a “jabbing” motion. Do not remove chocks until authorized by flight crew.</p>
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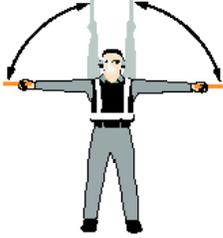
	<p><b>9. Start engine(s)</b></p> <p>Raise right arm to head level with wand pointing up and start a circular motion with hand; at the same time, with left arm raised above head level, point to engine to be started.</p>
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	<p><b>10. Cut engines</b></p> <p>Extend arm with wand forward of body at shoulder level; move hand and wand to top of left shoulder and draw wand to top of right shoulder in a slicing motion across throat.</p>
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	<p><b>11. Slow down</b></p> <p>Move extended arms downwards in a “patting” gesture, moving wands up and down from waist to knees.</p>
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	<p><b>12. Slow down engine(s) on indicated side</b></p> <p>With arms down and wands toward ground, wave either <i>right</i> or <i>left</i> wand up and down indicating engine(s) on <i>left</i> or <i>right</i> side respectively should be slowed down.</p>
	<p><b>13. Move back</b></p> <p>With arms in front of body at waist height, rotate arms in a forward motion. To stop rearward movement, use signal 6 a) or 6 b).</p>
	<p><b>14 a). Turns while backing (for tail to starboard)</b></p> <p>Point left arm with wand down and bring right arm from overhead vertical position to horizontal forward position, repeating right-arm movement.</p>
	<p><b>14 b). Turns while backing (for tail to port)</b></p> <p>Point right arm with wand down and bring left arm from overhead vertical position to horizontal forward position, repeating left-arm movement.</p>
	<p><b>15. Affirmative/all clear</b></p> <p>Raise right arm to head level with wand pointing up or display hand with "thumbs up"; left arm remains at side by knee.</p>

	<p><b>16. Hover</b></p> <p>Fully extend arms and wands at a 90-degree angle to sides.</p>
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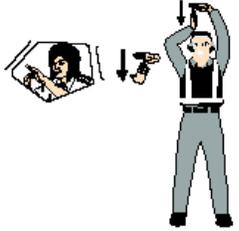
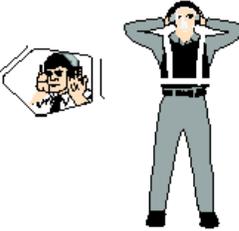
	<p><b>17. Move upwards</b></p> <p>Fully extend arms and wands at a 90-degree angle to sides and, with palms turned up, move hands upwards. Speed of movement indicates rate of ascent.</p>
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	<p><b>18. Move downwards</b></p> <p>Fully extend arms and wands at a 90-degree angle to sides and, with palms turned down, move hands downwards. Speed of movement indicates rate of descent.</p>
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	<p><b>19 a). Move horizontally left (from pilot's point of view)</b></p> <p>Extend arm horizontally at a 90-degree angle to right side of body. Move other arm in same direction in a sweeping motion.</p>
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	<p><b>19 b). Move horizontally right (from pilot's point of view)</b></p> <p>Extend arm horizontally at a 90-degree angle to left side of body. Move other arm in same direction in a sweeping motion.</p>
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	<p><b>20. Land</b></p> <p>Cross arms with wands downwards and in front of body.</p>
	<p><b>21. Fire</b></p> <p>Move right-hand wand in a “fanning” motion from shoulder to knee, while at the same time pointing with left-hand wand to area of fire.</p>
	<p><b>22. Hold position/stand by</b></p> <p>Fully extend arms and wands downwards at a 45-degree angle to sides. Hold position until aircraft is clear for next manoeuvre.</p>
	<p><b>23. Dispatch aircraft</b></p> <p>Perform a standard salute with right hand and/or wand to dispatch the aircraft. Maintain eye contact with flight crew until aircraft has begun to taxi.</p>
	<p><b>24. Do not touch controls (technical/servicing communication signal)</b></p> <p>Extend right arm fully above head and close fist or hold wand in horizontal position; left arm remains at side by knee.</p>

	<p><b>25. Connect ground power (technical/servicing communication signal)</b></p> <p>Hold arms fully extended above head; open left hand horizontally and move finger tips of right hand into and touch open palm of left hand (forming a "T"). At night, illuminated wands can also be used to form the "T" above head.</p>
	<p><b>26. Disconnect power (technical/servicing communication signal)</b></p> <p>Hold arms fully extended above head with finger tips of right hand touching open horizontal palm of left hand (forming a "T"); then move right hand away from the left. Do not disconnect power until authorized by flight crew. At night, illuminated wands can also be used to form the "T" above head.</p>
	<p><b>27. Negative (technical/servicing communication signal)</b></p> <p>Hold right arm straight out at 90 degrees from shoulder and point wand down to ground or display hand with "thumbs down"; left hand remains at side by knee.</p>
	<p><b>28. Establish communication via interphone (technical/servicing communication signal)</b></p> <p>Extend both arms at 90 degrees from body and move hands to cup both ears.</p>
	<p><b>29. Open/close stairs (technical/servicing communication signal)</b></p> <p>With right arm at side and left arm raised above head at a 45-degree angle, move right arm in a sweeping motion towards top of left shoulder. <i>Note.— This signal is intended mainly for aircraft with the set of integral stairs at the front.</i></p>

- (i) Signals from the pilot of an aircraft to a signalman.
  - (1) The PIC or CP shall use the following signals when communicating with a signalman:

*Note: These signals are designed for use by a pilot in the cockpit with hands plainly visible to the signalman, and illuminated as necessary to facilitate observation by the signalman.*

*Note: The aircraft engines are numbered in relation to the signalman facing the aircraft, from right to left (i.e. No. 1 engine being the port outer engine).*

- (2) *Brakes engaged:* Raise arm and hand, with fingers extended, horizontally in front of face, then clench fist.
- (3) *Brakes released.* Raise arm, with fist clenched, horizontally in front of face, then extend fingers.

*Note: The moment the fist is clenched or the fingers are extended indicates, respectively, the moment of brake engagement or release.*

- (4) *Insert chocks:* Arms extended, palms outwards, move hands inwards to cross in front of face.
- (5) *Remove chocks:* Hands crossed in front of face, palms outwards, move arms outwards.
- (6) *Ready to start engine(s).* Raise the appropriate number of fingers on one hand indicating the number of the engine to be started.

*ICAO Annex 2: Appendix 1: Sections: 1, 3, 4, & 5*

#### **IS: 8.8.3.4 TABLE OF CRUISING LEVELS**

- (a) The cruising levels at which a flight or a portion of a flight is to be conducted shall be in terms of:
  - (1) Flight levels, for flights at or above the lowest usable flight level or, where applicable, above the transition altitude;
  - (2) Altitudes, for flights below the lowest usable flight level or, where applicable, at or below the transition altitude.
- (b) The PIC shall observe the following cruising levels in areas where, on the basis of regional air navigation agreement and in accordance with conditions specified therein, a vertical separation minimum (VSM) of 300 m (1,000 ft) is applied between FL 290 and FL 410 inclusive:\*

TRACK**											
From 000 Degrees to 179 Degrees***						From 180 Degrees to 359 Degrees***					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
FL	Altitude Meters	Feet	FL	Altitude Meters	Feet	FL	Altitude Meters	Feet	FL	Altitude Meters	Feet
-90	—	—	—	—	—	0	—	—	—	—	—
10	300	1000	—	—	—	20	600	2000	—	—	—
30	900	3000	35	1050	3500	40	1200	4000	45	1350	4500
50	1500	5000	55	1700	5500	60	1850	6000	65	2000	6500
70	2150	7000	75	2300	7500	80	2450	8000	85	2600	8500
90	2750	9000	95	2900	9500	100	3050	10000	105	3200	10500
110	3350	11000	115	3500	11500	120	3650	12000	125	3800	12500
130	3950	13000	135	4100	13500	140	4250	14000	145	4400	14500
150	4550	15000	155	4700	15500	160	4900	16000	165	5050	16500
170	5200	17000	175	5350	17500	180	5500	18000	185	5650	18500
190	5800	19000	195	5950	19500	200	6100	20000	205	6250	20500
210	6400	21000	215	6550	21500	220	6700	22000	225	6850	22500
230	7000	23000	235	7150	23500	240	7300	24000	245	7450	24500
250	7600	25000	255	7750	25500	260	7900	26000	265	8100	26500
270	8250	27000	275	8400	27500	280	8550	28000	285	8700	28500
290	8850	29000				300	9150	30000			
310	9450	31000				320	9750	32000			
330	10050	33000				340	10350	34000			
350	10650	35000				360	10950	36000			
370	11300	37000				380	11600	38000			
						400	12200	40000			
410	12500	41000				430	13100	43000			
450	13700	45000				470	14350	47000			
490	14950	49000				510	15550	51000			
etc.	etc.	etc.				etc.	etc.	etc.			

\*Except when, on the basis of regional air navigation agreements, a modified table of cruising levels based on a nominal vertical separation minimum of 300 m (1,000 ft) is prescribed for use, under specified conditions, by aircraft operating above FL 410 within designated portions of the airspace.

\*\*Magnetic track, or in polar areas at latitudes higher than 70 degrees and within such extensions to those areas as may be prescribed by the appropriate ATS authorities, grid tracks as determined by a network of lines parallel to the Greenwich Meridian superimposed on a polar stereographic chart in which the direction towards the North Pole is employed as the Grid North.

\*\*\*Except where, on the basis of regional air navigation agreements, from 090 to 269 degrees and from 270 to 089 degrees is prescribed to accommodate predominant traffic directions and appropriate transition procedures to be associated therewith are specified.

- (c) The PIC shall observe the following cruising levels in other areas not specified in item (a) above.

TRACK**											
From 000 Degrees to 179 Degrees***						From 180 Degrees to 359 Degrees***					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
FL	Altitude Meters	Feet	FL	Altitude Meters	Feet	FL	Altitude Meters	Feet	FL	Altitude Meters	Feet
-90	—	—	—	—	—	0	—	—	—	—	—
10	300	1000	—	—	—	20	600	2000	—	—	—
30	900	3000	35	1050	3500	40	1200	4000	45	1350	4500
50	1500	5000	55	1700	5500	60	1850	6000	65	2000	6500
70	2150	7000	75	2300	7500	50	2450	8000	85	2600	8500
90	2750	9000	95	2900	9500	100	3050	10000	105	3200	10500
110	3350	11000	115	3500	11500	120	3650	12000	125	3800	12500
130	3950	13000	135	4100	13500	140	4250	14000	145	4400	14500
150	4550	15000	155	4700	15500	160	4900	16000	165	5050	16500
170	5200	17000	175	5300	17500	180	5500	18000	185	5650	18500
190	5800	19000	195	5900	19500	200	6100	20000	205	6250	20500
210	6400	21000	215	6550	21500	220	6700	22000	225	6850	22500
230	7000	23000	235	7150	23500	240	7300	24000	245	7450	24500
250	7600	25000	255	7750	25500	260	7900	26000	265	8100	26500
270	8250	27000	275	8100	27500	280	8550	28000	285	8700	28500
290	8850	29000	300	9150	30000	310	9450	31000	320	9750	32000
330	10050	33000	340	10350	34000	350	10650	35000	360	10950	36000
370	11300	37000	380	11600	38000	390	11900	39000	400	12200	40000
410	12500	41000	420	12500	42000	430	13100	43000	440	13400	44000
450	13700	45000	460	14000	46000	470	14350	47000	480	14650	48000
490	14950	49000	500	15250	50000	510	15550	51000	520	15850	52000
etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.

\*\*Magnetic track, or in polar areas at latitudes higher than 70 degrees and within such extensions to those areas as may be prescribed by the appropriate ATS authorities, grid tracks as determined by a network of lines parallel to the Greenwich Meridian superimposed on a polar stereographic chart in which the direction towards the North Pole is employed as the Grid North.

\*\*\*.Except where, on the basis of regional air navigation agreements, from 090 to 269 degrees and from 270. to 089 degrees is prescribed to accommodate predominant traffic directions and appropriate transition procedures to be associated therewith are specified.

*Note: Guidance material relating to vertical separation is contained in ICAO Doc 9574, Manual on the Implementation of a 300 m (1,000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive. The system of flight levels is prescribed in ICAO Doc 8168, Procedures for Air Navigation Services.*

ICAO Annex 2: 3.1.1; Appendix 3

**IS: 8.10.1.9 COMPANY PROCEDURES INDOCTRINATION**

- (a) Each AOC holder shall ensure that all operations personnel are provided company indoctrination training that covers the following areas:

- (1) AOC holder's organisation, scope of operation, and administrative practices as applicable to their assignments and duties.
- (2) Appropriate provisions of these regulations and other applicable regulations and guidance materials.
- (3) Contents of the AOC holder's certificate and operations specifications (not required for cabin crew).
- (4) AOC holder policies and procedures.
- (5) Crew member and flight operations officer duties and responsibilities.
- (6) AOC holder testing programme for alcohol and narcotic psychoactive substances.
- (7) Applicable crew member manuals.
- (8) Appropriate portions of the AOC holder's Operations Manual.

14 CFR: 121.415(a)

**IS: 8.10.1.10 INITIAL DANGEROUS GOODS TRAINING**

- (a) Each AOC holder shall establish, maintain, and have approved by the Authority, staff training programmes, as required by the Technical Instructions.
 

*ICAO Annex 18: Chapter 10*
- (b) Each AOC holder not holding a permanent approval to carry dangerous goods shall ensure that—
  - (1) Staff who are engaged in general cargo handling have received training to carry out their duties in respect of dangerous goods which covers as a minimum, the areas identified in Column 1 of Table 1 to a depth sufficient to ensure that an awareness is gained of the hazards associated with dangerous goods and how to identify such goods.
  - (2) Crew members, passenger handling staff, and security staff employed by the AOC holder who deal with the screening of a passengers and their baggage, have received training which covers as a minimum, the areas identified in Column 2 of Table 1 to a depth sufficient to ensure that an awareness is gained of the hazards associated with dangerous goods, how to identify them and what requirements apply to the carriage of such goods by passengers.

**Table 1**

<b>Areas Of Dangerous Goods Training</b>	<b>1</b>	<b>2</b>
General Philosophy	x	x
Limitations On Dangerous Goods In Air Transport	x	x
Package Marking And Labelling	x	x
Dangerous Goods In Passengers Baggage		x
Emergency Procedures		x

*Note: x indicates an area to be covered.*

- (c) Each AOC holder holding a permanent approval to carry dangerous goods shall ensure that:
  - (1) Staff who are engaged in the acceptance of dangerous goods have received training and are qualified to carry out their duties which covers as a minimum, the areas identified in Column 1 of Table 2 to a depth sufficient to ensure the staff can take decisions on the acceptance or refusal of dangerous goods offered for carriage by air.
  - (2) Staff who are engaged in ground handling, storage and loading of dangerous goods have received training to enable them to carry out their duties in respect of dangerous goods which covers as a minimum, the areas identified in Column 2 of Table 2 to a depth sufficient to ensure that an awareness is gained of the hazards associated with dangerous goods, how to identify such goods and how to handle and load them.
  - (3) Staff who are engaged in general cargo handling have received training to enable them to carry out their duties in respect of dangerous goods which covers as a minimum, the areas identified in Column 3 of Table 2 to a depth sufficient to ensure that an awareness is gained of the hazards associated with dangerous goods, how to identify such goods and how to handle and load them.
  - (4) Flight crew members have received training which covers as a minimum, the areas identified in Column 4 of Table 2 to a depth sufficient to ensure that an awareness is gained of the hazards associated with dangerous goods and how they should be carried on an aircraft.
  - (5) Passenger handling staff; security staff employed by the operator who deal with the screening of passengers and their baggage; and crew members other than flight crew members, have received training which covers as a minimum, the areas identified in Column 5 of Table 2 to a depth sufficient to ensure that an awareness is gained of the hazards associated with dangerous goods and what requirements apply to the carriage of such goods by passengers or, more generally, their carriage on an aircraft.
- (d) Each AOC holder shall ensure that all staff who require dangerous goods training receive recurrent training at intervals of not longer than 2 years.
- (e) Each AOC holder shall ensure that records of dangerous goods training are maintained for all staff trained in accordance with paragraph (d).
- (f) Each AOC holder shall ensure that its handling agent's staff are trained in accordance with the applicable column of Table 1 or Table 2

Table 2

Areas Of Training	1	2	3	4	5
General Philosophy	x	x	x	x	x
Limitations On Dangerous Goods In The Air Transport	x	x	x	x	x
Classification And List Of Dangerous Goods	x	x		x	
General Packing Requirements And Packing Instructions	x				
Packaging Specifications Marking	x				
Package Marking And Labelling	x	x	x	x	x
Documentation From The Shipper	x				
Acceptance Of Dangerous Good, Including The Use Of A Checklist	x				
Loading, Restrictions On Loading And Segregation	x	x	x	x	
Inspections For Damage Or Leakage And Decontamination Procedures	x	x			
Provision Of Information To Commander	x	x		x	
Dangerous Goods In Passengers' Baggage	x			x	x
Emergency Procedures	x	x		x	x

Note: x indicates an area to be covered.

- (g) An AOC holder shall provide dangerous goods training manuals which contain adequate procedures and information to assist personnel in identifying packages marked or labelled as containing hazardous materials including—
- (1) Instructions on the acceptance, handling, and carriage of hazardous materials.
  - (2) Instructions governing the determination of proper shipping names and hazard classes.
  - (3) Packaging, labelling, and marking requirements.
  - (4) Requirements for shipping papers, compatibility requirements, loading, storage, and handling requirements.
  - (5) Restrictions.

*ICAO Doc 9284, Technical Instructions for the Safe Transport of Dangerous Goods by Air, Part 1, Chapter 4  
14 CFR: 121.1001 - 1005  
JAR-OPS: 1.1220  
JAR-OPS 3: 3.1220*

**IS: 8.10.1.12 INITIAL CREW RESOURCE MANAGEMENT TRAINING**

- (a) Each AOC holder shall ensure that the flight operations officers and all aircraft crew members have CRM training as part of their initial and recurrent training requirements.
- (b) A CRM training programme shall include—

**Implementing Standard: Part 8 - Operations**

- (1) An initial indoctrination/awareness segment;
  - (2) A method to provide recurrent practice and feedback; and
  - (3) A method of providing continuing reinforcement.
- (c) Curriculum topics to be contained in an initial CRM training course include—
- (1) Communications processes and decision behaviour.
  - (2) Internal and external influences on interpersonal communications.
  - (3) Barriers to communication.
  - (4) Listening skills.
  - (5) Decision-making skills.
  - (6) Effective briefings.
  - (7) Developing open communications.
  - (8) Inquiry, advocacy, and assertion training.
  - (9) Crew self-critique.
  - (10) Conflict resolution.
  - (11) Team building and maintenance.
  - (12) Leadership and followership training.
  - (13) Interpersonal relationships.
  - (14) Workload management.
  - (15) Situational awareness.
  - (16) How to prepare, plan and monitor task completions.
  - (17) Workload distribution.
  - (18) Distraction avoidance.
  - (19) Individual factors.
  - (20) Stress reduction.

*ICAO Doc 9376, Preparation of an Operations Manual, para. 4.17.2-4.17.4, Chapter 4 Attachment K  
FAA AC 120-51E*

**IS: 8.10.1.13 INITIAL EMERGENCY EQUIPMENT DRILLS**

- (a) Each aircraft crew member shall accomplish emergency training during the specified training periods, using those items of installed emergency equipment for each type of aircraft in which he or she is to serve.
- (b) During initial training, each aircraft crew member shall perform the following one-time emergency drills—
  - (1) Protective Breathing Equipment (PBE)/Firefighting Drill.
    - (i) Locate source of fire or smoke (actual or simulated fire).
    - (ii) Implement procedures for effective crew co-ordination and communication, including notification of flight crew members about fire situation.
    - (iii) Don and activate installed PBE or approved PBE simulation device.
    - (iv) Manoeuvre in limited space with reduced visibility.
    - (v) Effectively use the aircraft's communication system.
    - (vi) Identify class of fire.
    - (vii) Select the appropriate extinguisher.
    - (viii) Properly remove extinguisher from securing device.
    - (ix) Prepare, operate and discharge extinguisher properly.
    - (x) Utilise correct firefighting techniques for type of fire.
  - (2) Emergency Evacuation Drill.
    - (i) Recognise and evaluate an emergency.
    - (ii) Assume appropriate protective position.
    - (iii) Command passengers to assume protective position.
    - (iv) Implement crew co-ordination procedures.
    - (v) Ensure activation of emergency lights.
    - (vi) Assess aircraft conditions.
    - (vii) Initiate evacuation (dependent on signal or decision).
    - (viii) Command passengers to release seatbelts and evacuate.
    - (ix) Assess exit and redirect, if necessary; to open exit, including deploying slides and commanding helpers to assist.
    - (x) Command passengers to evacuate at exit and run away from aircraft.

**Implementing Standard: Part 8 - Operations**

- (xi) Assist special need passengers, such as handicapped, elderly, and persons in a state of panic.
- (xii) Actually exit aircraft or training device using at least one of the installed emergency evacuation slides.

*Note: The crew member may either observe the aeroplane exits being opened in the emergency mode and the associated exit slide/raft pack being deployed and inflated, or perform the tasks resulting in the accomplishment of these actions.*

- (c) Each aircraft crew member shall accomplish additional emergency drills during initial and recurrent training, including actual performance of the following emergency drills—

- (1) Emergency Exit Drill.

- (i) Correctly preflight each type of emergency exit and evacuation slide or slideraft (if part of cabin crew member's assigned duties).
- (ii) Disarm and open each type of door exit in normal mode.
- (iii) Close each type of door exit in normal mode.
- (iv) Arm each type of door exit in emergency mode.
- (v) Open each type of door exit in emergency mode.
- (vi) Use manual slide inflation system to accomplish or ensure slide or slideraft inflation.
- (vii) Open each type of window exit.
- (viii) Remove escape rope and position for use.

- (2) Hand Fire Extinguisher Drill.

- (i) Preflight each type of hand fire extinguisher.
- (ii) Locate source of fire or smoke and identify class of fire.
- (iii) Select appropriate extinguisher and remove from securing device.
- (iv) Prepare extinguisher for use.
- (v) Actually operate and discharge each type of installed hand fire extinguisher.

*Note: Fighting an actual or a simulated fire is not necessary during this drill.*

*Note: The discharge of Halon extinguishing agents during firefighting drills is not appropriate, unless a training facility is used that is specifically designed to prevent harm to the environment from the discharged Halon. When such facilities are not used, other fire extinguishing agents that are not damaging to the environment should be used during the drills.*

- (vi) Utilise correct firefighting techniques for type of fire.

- (vii) Implement procedures for effective crew co-ordination and communication, including notification of flight crew members about the type of fire situation.
- (3) Emergency Oxygen System Drill.
  - (i) Preflight and operation of portable oxygen devices.
  - (ii) Actually operate portable oxygen bottles, including masks and tubing.
  - (iii) Verbally demonstrate operation of chemical oxygen generators or installed oxygen supply system.
  - (iv) Prepare for use and operate oxygen device properly, including donning and activation.
  - (v) Administer oxygen to self, passengers, and to those persons with special oxygen needs.
  - (vi) Utilise proper procedures for effective crew co-ordination and communication.
  - (vii) Manually open each type of oxygen mask compartment and deploy oxygen masks.
  - (viii) Identify compartments with extra oxygen masks.
  - (ix) Implement immediate action decompression procedures.
  - (x) Reset oxygen system, if applicable.
  - (xi) Preflight and operation of PBE.
  - (xii) Activate PBE.

*Note: Several operators equip their aircraft with approved PBE units that have approved storage pouches fastened with two metal staples at one end. However, considerations of practicality and cost compel operators to use a less durable storage pouch that lacks the staple fasteners for training purposes. As a result, pilots and cabin crew members have been surprised that opening the pouch furnished on board requires more force than opening the training pouch. The Authority should require crew member training that includes the appropriate procedures for operating PBE. In those cases where pouches with staples are used for storage of the PBE unit, special emphasis in training should highlight the difference between the training pouch and the onboard pouch. The training pouch may be easy to open, but the approved, onboard pouch may require as much as 28 pounds of force to overcome the 2 staple fasteners.*

- (4) Flotation Device Drill.
  - (i) Preflight flotation device, if appropriate.
  - (ii) Don and inflate life vests.
  - (iii) Remove and use flotation seat cushions, as installed.
  - (iv) Demonstrate swimming techniques using a seat cushion, as installed.
- (5) Ditching Drill, if applicable.

*Note: During a ditching drill students shall perform the "prior to impact" and "after impact" procedures for a ditching, as appropriate to the specific operator's type of operation.*

- (i) Implement crew co-ordination procedures, including briefing with captain to obtain pertinent ditching information and briefing cabin crew members.
  - (ii) Co-ordinate time frame for cabin and passenger preparation.
  - (iii) Adequately brief passengers on ditching procedures.
  - (iv) Ensure cabin is prepared, including the securing of carry-on baggage, lavatories, and galleys.
  - (v) Demonstrate how to properly deploy and inflate sliderafts.
  - (vi) Demonstrate how to properly deploy and inflate liferafts, if applicable.
  - (vii) Remove, position, attach sliderafts to aircraft.
  - (viii) Inflate rafts.
  - (ix) Use escape ropes at overwing exits.
  - (x) Command helpers to assist.
  - (xi) Use slides and life vests or seat cushions as flotation devices.
  - (xii) Remove appropriate emergency equipment from aircraft.
  - (xiii) Board rafts properly.
  - (xiv) Initiate raft management procedures (i.e., disconnecting rafts from aircraft, applying immediate first aid, rescuing persons in water, salvaging floating rations and equipment, deploying sea anchor, tying rafts together, activating or ensuring operation of emergency locator transmitter).
  - (xv) Initiate basic survival procedures (i.e., removing and utilising survival kit items, repairing and maintaining raft, ensuring protection from exposure, erecting canopy, communicating location, providing continued first aid, providing sustenance).
  - (xvi) Use heaving line to rescue persons in water.
  - (xvii) Tie sliderafts or rafts together.
  - (xviii) Use life line on edge of slideraft or life raft as a handhold.
  - (xix) Secure survival kit items.
- (d) Each aircraft crew member shall accomplish additional emergency drill requirements during initial and recurrent training including observing the following emergency drills—
- (1) Liferaft Removal and Inflation Drill, if applicable.
    - (i) Removal of a liferaft from the aircraft or training device.

- (ii) Inflation of a liferaft.
- (2) Slideraft Transfer Drill.
  - (i) Transfer of each type of slideraft pack from an unusable door to a usable door.
  - (ii) Disconnect slideraft at unusable door.
  - (iii) Redirect passengers to usable slideraft.
  - (iv) Installation and deployment of slideraft at usable door.
- (3) Slide and Slideraft Deployment, Inflation, and Detachment Drill.
  - (i) Engage slide girt bar in floor brackets, if applicable.
  - (ii) Arm slide for automatic inflation.
  - (iii) Inflate slides with and without quick-release handle (manually and automatically).
  - (iv) Disconnecting slide from the aircraft for use as a flotation device.
  - (v) Arm sliderafts for automatic inflation.
  - (vi) Disconnecting slideraft from the aircraft.
- (4) Emergency Evacuation Slide Drill:
  - (i) Open armed exit with slide or slideraft deployment and inflation.
  - (ii) Egress from aircraft via the evacuation slide and run away to a safe distance.

*14 CFR: 121.417(c), FAA Order 8400.10, Vol. 3, Chapter 14*

**IS: 8.10.1.14(B) INITIAL AIRCRAFT GROUND TRAINING—FLIGHT CREW**

- (a) Each AOC holder shall have an initial aircraft ground training curriculum for the flight crew applicable to their duties, the type of operations conducted and aircraft flown. Instructions shall include at least the following general subjects:
  - (1) AOC holder's dispatch, flight release, or flight locating procedures.
  - (2) Principles and methods for determining mass and balance, and runway limitations for takeoff.
  - (3) AOC holder's operations specifications, authorisations and limitations.
  - (4) Adverse weather recognition and avoidance, and flight procedures which shall be followed when operating in the following conditions:
    - (i) Icing.
    - (ii) Fog.
    - (iii) Turbulence.

**Implementing Standard: Part 8 - Operations**

- (iv) Heavy precipitation.
- (v) Thunderstorms.
- (vi) Low-level windshear and microburst.
- (vii) Low visibility.
- (viii) Contaminated runways.
- (5) Normal and emergency communications procedures and navigation equipment including the AOC holder's communications procedures and ATC clearance requirements.
- (6) Navigation procedures used in area departure, en route, area arrival, approach and landing phases, to include visual cues prior to and during descent below DH or MDA.
- (7) Approved crew resource management training.
- (8) Air traffic control systems, procedures, and phraseology.
- (9) Aircraft performance characteristics during all flight regimes, including:
  - (i) The use of charts, tables, tabulated data and other related manual information.
  - (ii) Normal, abnormal, and emergency performance problems.
  - (iii) Meteorological and mass limiting performance factors (such as temperature, pressure, contaminated runways, precipitation, climb/runway limits).
  - (iv) Inoperative equipment performance limiting factors (such as MEL/CDL, inoperative antiskid).
  - (v) Special operational conditions (such as unpaved runways, high altitude aerodromes and drift down requirements).
- (10) Normal, abnormal and emergency procedures on the aircraft type to be used.
- (b) Each AOC holder shall have an initial aircraft ground training curriculum for the flight crew applicable to their duties, the type of operations conducted and aircraft flown, including at least the following aircraft systems (if applicable):
  - (i) Aircraft.
  - (ii) Aircraft dimensions, turning radius, panel layouts, cockpit and cabin configurations.
  - (iii) Other major systems and components or appliances of the aircraft.
  - (iv) Operating limitations.
  - (v) Approved aircraft flight manual.
- (2) Powerplants.
  - (i) Basic engine description.

- (ii) Engine thrust ratings.
  - (iii) Engine components such as accessory drives, ignition, oil, fuel control, hydraulic, and bleed air features.
- (3) Electrical.
- (i) Sources of aircraft electrical power (such as engine driven generators, APU generator, external power, etc.).
  - (ii) Electrical buses.
  - (iii) Circuit breakers.
  - (iv) Aircraft battery.
  - (v) Standby power systems.
- (4) Hydraulic.
- (i) Hydraulic reservoirs, pumps, accumulators; filters, check valves, interconnects and actuators.
  - (ii) Other hydraulically operated components.
- (5) Fuel.
- (i) Fuel tanks (location and quantities).
  - (ii) Engine driven pumps.
  - (iii) Boost pumps.
  - (iv) System valves and crossfeeds.
  - (v) Quantity indicators.
  - (vi) Provisions for fuel jettisoning.
- (6) Pneumatic.
- (i) Bleed air sources (APU, engine or external ground air).
  - (ii) Means of routing, venting and controlling bleed air via valves, ducts, chambers, and temperature and pressure limiting devices.
- (7) Air conditioning and pressurisation.
- (i) Heaters, air conditioning packs, fans, and other environmental control devices.
  - (ii) Pressurisation system components such as outflow and negative pressure relief valves.
  - (iii) Automatic, standby, and manual pressurisation controls and annunciators.

- (8) Flight controls.
  - (i) Primary controls (yaw, pitch, and roll devices).
  - (ii) Secondary controls (leading/trailing edge devices, flaps, trim, and damping mechanisms).
  - (iii) Means of actuation (direct/indirect or fly by wire).
  - (iv) Redundancy devices.
- (9) Landing gear and brakes.
  - (i) Landing gear extension and retraction mechanism including the operating sequence of struts, doors, and locking devices, and brake and antiskid systems, if applicable.
  - (ii) Steering (nose or body steering gear).
  - (iii) Bogie arrangements.
  - (iv) Air/ground sensor relays.
  - (v) Visual downlock indicators.
- (10) Ice and rain protection.
  - (i) Rain removal systems.
  - (ii) Anti-icing and/or deicing system(s) affecting flight controls, engines, pitot static and other probes, fluid outlets, cockpit windows, and aircraft structures.
- (11) Equipment and furnishings.
  - (i) Exits.
  - (ii) Galleys.
  - (iii) Water and waste systems.
  - (iv) Lavatories.
  - (v) Cargo areas.
  - (vi) Crew member and passenger seats.
  - (vii) Bulkheads.
  - (viii) Seating and/or cargo configurations.
  - (ix) Non-emergency equipment and furnishings.
- (12) Navigation equipment.
  - (i) Flight directors.

- (ii) Horizontal situation indicator.
  - (iii) Radio magnetic indicator.
  - (iv) Navigation receivers (GPS, ADF, VOR, LORAN-C, RNAV, Marker Beacon, DME).
  - (v) Inertial systems (INS, IRS).
  - (vi) Functional displays.
  - (vii) Fault indications and comparator systems.
  - (viii) Aircraft transponders.
  - (ix) Radio altimeters.
  - (x) Weather radar.
  - (xi) Cathode ray tube or computer generated displays of aircraft position and navigation information.
- (13) Auto flight system.
- (i) Autopilot.
  - (ii) Autothrottles.
  - (iii) Flight director and navigation systems.
  - (iv) Automatic approach tracking.
  - (v) Autoland.
  - (vi) Automatic fuel and performance management systems.
- (14) Flight instruments.
- (i) Panel arrangement.
  - (ii) Flight instruments (attitude indicator, directional gyro, magnetic compass, airspeed indicator, vertical speed indicator, altimeters, standby instruments).
  - (iii) Instrument power sources, and instrument sensory sources (e.g., Pitot static pressure).
- (15) Display systems.
- (i) Weather radar.
  - (ii) Other CRT displays (e.g., checklist, vertical navigation or longitudinal navigation displays).
- (16) Communication equipment.
- (i) VHF/HF/SAT COM radios.

**Implementing Standard: Part 8 - Operations**

- (ii) Audio panels.
  - (iii) Inflight interphone and passenger address systems.
  - (iv) Voice recorder.
  - (v) Air/ground passive communications systems (ACARS).
- (17) Warning systems.
- (i) Aural, visual, and tactile warning systems (including the character and degree of urgency related to each signal).
  - (ii) Warning and caution annunciator systems ( including airborne collision avoidance, ground proximity and takeoff configuration warning systems).
- (18) Fire protection.
- (i) Fire and overheat sensors, loops, modules, or other means of providing visual and/or aural indications of fire or overheat detection.
  - (ii) Procedures for the use of fire handles, automatic extinguishing systems and extinguishing agents.
  - (iii) Power sources necessary to provide protection for fire and overheat conditions in engines, APU, cargo bay/wheel well, cockpit, cabin and lavatories.
- (19) Oxygen.
- (i) Passenger, crew, and portable oxygen supply systems.
  - (ii) Sources of oxygen (gaseous or solid).
  - (iii) Flow and distribution networks.
  - (iv) Automatic deployment systems.
  - (v) Regulators, pressure levels and gauges.
  - (vi) Servicing requirements.
- (20) Lighting.
- (i) Cockpit, cabin, and external lighting systems.
  - (ii) Power sources.
  - (iii) Switch positions.
  - (iv) Spare lightbulb locations.
- (21) Emergency equipment.
- (i) Fire and oxygen bottles.

- (ii) First aid and medical kits.
  - (iii) Liferafts and life preservers.
  - (iv) Crash axes.
  - (v) Emergency exits and lights.
  - (vi) Slides and sliderafts.
  - (vii) Escape straps or handles.
  - (viii) Hatches, ladders and movable stairs.
- (22) Auxiliary Power Unit (APU).
- (i) Electric and bleed air capabilities.
  - (ii) Interfaces with electrical and pneumatic systems.
  - (iii) Inlet doors and exhaust ducts.
  - (iv) Fuel supply.
- (23) Performance.
- (c) Each AOC holder shall have an initial aircraft ground training curriculum for the flight crew applicable to their duties, the type of operations conducted and aircraft flown, including at least the following aircraft systems integration items:
- (1) Use of checklist.
    - (i) Safety checks.
    - (ii) Cockpit preparation (switch position and checklist flows).
    - (iii) Checklist callouts and responses.
    - (iv) Checklist sequence.
  - (2) Flight planning.
    - (i) Preflight and in-flight planning.
    - (ii) Performance limitations (meteorological, mass, and MEL/CDL items).
    - (iii) Required fuel loads.
    - (iv) Weather planning (lower than standard takeoff minimums or alternate requirements).
  - (3) Display systems.
    - (i) Weather radar.

**Implementing Standard: Part 8 - Operations**

- (ii) CRT displays (checklists, vertical navigation or longitudinal navigation displays).
  - (4) Navigation and Communications systems.
    - (i) Preflight and operation of applicable receivers.
    - (ii) Onboard navigation systems.
    - (iii) Flight plan information input and retrieval.
  - (5) Autoflight/flight directors.
    - (i) Autopilot.
    - (ii) Autothrust.
    - (iii) Flight director systems, including the appropriate procedures, normal and abnormal indications, and annunciators.
  - (6) Cockpit familiarisation.
    - (i) Activation of aircraft system controls and switches to include normal, abnormal and emergency switches.
    - (ii) Control positions and relevant annunciators, lights, or other caution and warning systems.
- (d) Each AOC holder shall ensure that initial ground training for flight crew consists of at least the following programmed hours of instruction based on the aircraft to be used, unless a reduction is determined appropriate by the Authority:
- (1) For pilots and flight engineers —
    - (i) Piston-engined aeroplane—64 hours.
    - (ii) Turbo-propeller-powered aeroplane —80 hours.
    - (iii) Turbo-jet aeroplane—120 hours.
    - (iv) Helicopter— 64 hours.
    - (v) Powered-lift— 80 hours.
    - (vi) Other aircraft— 64 hours.
  - (2) For flight navigators—
    - (i) Piston-engined aircraft—16 hours.
    - (ii) Turbo-propeller-powered aircraft —32 hours.
    - (iii) Turbojet-aircraft—32 hours.

14 CFR: 121.419; 121.420  
FAA Order 8400.10, Vol. 3, Chapter 2, Section 3: para. 439, 441,443

**IS: 8.10.1.14 (C) INITIAL AIRCRAFT GROUND TRAINING - CABIN CREW MEMBERS**

- (a) Each AOC holder shall have an initial ground training curriculum for cabin crew members applicable to the type of operations conducted and aircraft flown, including at least the following general subjects, if applicable:
- (1) Aircraft familiarisation.
    - (i) Aircraft characteristics and description.
    - (ii) Flightdeck configuration.
    - (iii) Cabin configuration.
    - (iv) Galleys.
    - (v) Lavatories.
    - (vi) Stowage areas.
  - (2) Aircraft equipment and furnishings.
    - (i) Cabin crew member stations.
    - (ii) Cabin crew member panels.
    - (iii) Passenger seats.
    - (iv) Passenger service units and convenience panels.
    - (v) Passenger information signs.
    - (vi) Aircraft markings.
    - (vii) Aircraft placards.
    - (viii) Bassinets and bayonet tables.
  - (3) Aircraft systems.
    - (i) Air conditioning and pressurisation system.
    - (ii) Aircraft communication systems (call, interphone and passenger address).
    - (iii) Lighting and electrical systems.
    - (iv) Oxygen systems (flight crew, observer and passenger).
    - (v) Water system.
    - (vi) Entertainment and convenience systems.
  - (4) Aircraft exits.

**Implementing Standard: Part 8 - Operations**

- (i) General information.
  - (ii) Exits with slides or sliderafts (preflight and normal operation).
  - (iii) Exits without slides (preflight and normal operations).
  - (iv) Window exits (preflight).
- (5) Crew member communication and co-ordination.
- (i) Authority of PIC.
  - (ii) Routine communication signals and procedures.
  - (iii) Crew member briefing.
- (6) Routine crew member duties and procedures.
- (i) Crew member general responsibilities.
  - (ii) Reporting duties and procedures for specific aircraft.
  - (iii) Pre-departure duties and procedures prior to passenger boarding.
  - (iv) Passenger boarding duties and procedures.
  - (v) Prior to movement on the surface duties and procedures.
  - (vi) Prior to takeoff duties and procedures applicable to specific aircraft.
  - (vii) Inflight duties and procedures.
  - (viii) Prior to landing duties and procedures.
  - (ix) Movement on the surface and arrival duties and procedures.
  - (x) After arrival duties and procedures.
  - (xi) Intermediate stops.
- (7) Passenger handling responsibilities.
- (i) Crew member general responsibilities.
  - (ii) Infants, children, and unaccompanied minors.
  - (iii) Passengers needing special assistance.
  - (iv) Passengers needing special accommodation.
  - (v) Carry-on stowage requirements.
  - (vi) Passenger seating requirements.

- (vii) Smoking and no smoking requirements.
- (8) Approved Crew Resource Management (CRM) training for cabin crew members.
- (b) Each AOC holder shall have an initial ground training curriculum for cabin crew members applicable to the type of operations conducted and aircraft flown, including at least the following aircraft specific emergency subjects, if applicable:
  - (1) Emergency equipment.
    - (i) Emergency communication and notification systems.
    - (ii) Aircraft exits.
    - (iii) Exits with slides or sliderafts (emergency operation).
    - (iv) Slides and sliderafts in a ditching.
    - (v) Exits without slides (emergency operation).
    - (vi) Window exits (emergency operation).
    - (vii) Exits with tailcones (emergency operation).
    - (viii) Cockpit exits (emergency operation).
    - (ix) Ground evacuation and ditching equipment.
    - (x) First aid equipment.
    - (xi) Portable oxygen systems (oxygen bottles, chemical oxygen generators, protective breathing equipment (PBE)).
    - (xii) Firefighting equipment.
    - (xiii) Emergency lighting systems.
    - (xiv) Additional emergency equipment.
  - (2) Emergency assignments and procedures.
    - (i) General types of emergencies specific to aircraft, including crew coordination and communication.
    - (ii) Emergency communication signals and procedures.
    - (iii) Rapid decompression.
    - (iv) Insidious decompression and cracked window and pressure seal leaks.
    - (v) Fires.
    - (vi) Ditching.

**Implementing Standard: Part 8 - Operations**

- (vii) Ground evacuation.
  - (viii) Unwarranted evacuation (i.e., passenger initiated).
  - (ix) Illness or injury.
  - (x) Abnormal situations involving passengers or crew members.
  - (xi) Hijacking and acts of unlawful interference.
  - (xii) Bomb threat.
  - (xiii) Turbulence.
  - (xiv) Other unusual situations including an awareness of other crew members' assignments and functions as they pertain to the cabin crew member's own duties.
  - (xv) Previous aircraft accidents and incidents.
- (3) Aircraft specific emergency drills.
- (i) Emergency exit drill.
  - (ii) Hand fire extinguisher drill.
  - (iii) Emergency oxygen system drill.
  - (iv) Flotation device drill.
  - (v) Ditching drill, if applicable.
  - (vi) Liferaft removal and inflation drill, if applicable.
  - (vii) Slideraft pack transfer drill, if applicable.
  - (viii) Slide or slideraft deployment, inflation, and detachment drill, if applicable.
  - (ix) Emergency evacuation slide drill, if applicable.
- (c) Each AOC holder shall ensure that initial ground training for a cabin crew member includes a competency check given by the appropriate supervisor or ground instructor to determine his or her ability to perform assigned duties and responsibilities.
- (d) Each AOC holder shall ensure that initial ground training for cabin crew members consists of at least the following programmed hours of instruction based on the aircraft to be used, unless a reduction is determined appropriate by the Authority:
- (1) Piston-engined - 8 hours.
  - (2) Turbopropeller-powered - 8 hours.
  - (3) Turbo-jet – 16 hours.
  - (4) Other aircraft – 8 hours.

**IS: 8.10.1.15(D) INITIAL AIRCRAFT GROUND TRAINING —FLIGHT OPERATIONS OFFICER**

- (a) Each AOC holder shall provide initial aircraft ground training for flight operations officers that include instruction in at least the following subjects:
  - (1) General dispatch subjects:
    - (i) Appropriate regulations.
    - (ii) Operations Manual of the AOC holder.
    - (iii) Operations specifications of the AOC holder.
    - (iv) Weather reports: interpretation, available sources, actual and prognostic, seasonal variations.
    - (v) Communications, to include normal and emergency.
    - (vi) Meteorology, to include effects on radio reception.
    - (vii) Adverse weather.
    - (viii) Notices to airmen.
    - (ix) Navigational charts and publications.
    - (x) Joint dispatcher/pilot responsibilities.
    - (xi) ATC coordination procedures.
    - (xii) Familiarisation with operations area, including classes of airspace and special areas of navigation.
    - (xiii) Characteristics of special aerodromes.
  - (2) Aircraft characteristics:
    - (i) Aircraft specific flight preparation.
    - (ii) Aircraft operating and performance characteristics.
    - (iii) Navigation equipment, including peculiarities and limitations.
    - (iv) Instrument approach and communication equipment.
    - (v) Emergency equipment.
    - (vi) AFM or RFM provisions applicable to the aircraft duties.
    - (vii) MEL/CDL.

**Implementing Standard: Part 8 - Operations**

- (viii) Applicable equipment training.
- (3) Operations procedures:
  - (i) Adverse weather phenomena (wind-shear, clear air turbulence and thunderstorms).
  - (ii) Mass and balance computations and load control procedures.
  - (iii) Aircraft performance computations, to include takeoff weight limitations based on departure runway, arrival runway, and en route limitations, and also engine-out limitations.
  - (iv) Flight planning procedures, to include route selection, flight time, and fuel requirements analysis.
  - (v) Dispatch release preparation.
  - (vi) Crew briefings.
  - (vii) Flight monitoring procedures.
  - (viii) MEL and CDL procedures.
  - (ix) Manual performance of all required procedures in case of the loss of automated capabilities.
  - (x) Training in appropriate geographic areas.
  - (xi) ATC and instrument procedures, ground hold and central flow control procedures.
  - (xii) Radio/telephone procedures.
- (4) Abnormal and emergency procedures.
  - (i) Assisting flight crew in an emergency.
  - (ii) Alerting of appropriate governmental, company and private agencies.
- (5) Crew resource management.

*Note: IS 8.10.1.12 contains CRM training items.*

- (6) Dangerous goods.

*Note: IS 8.10.1.10 contains dangerous goods training items.*

- (7) Security.

*Note: See MCAR 8.10.1.11.*

- (8) Differences training.

*Note: IS 8.10.1.17 contains items on differences training.*

- (b) Each AOC holder shall ensure that initial ground training for flight operations officers includes a competency check given by an appropriately qualified dispatch supervisor or ground instructor that demonstrates the required knowledge and abilities.
- (c) Each AOC holder shall ensure that initial ground training for flight operations officers consists of at least the following programmed hours of instruction based on the aircraft to be used, unless a reduction is determined appropriate by the Authority:
  - (1) Piston-engined aircraft – 30 hours.
  - (2) Turbopropeller-powered aircraft – 40 hours.
  - (3) Turbo-jet aircraft – 40 hours.
  - (4) Other aircraft – 30 hours.

*ICAO Annex 6, Part I: 10.3 R, 10.4 R  
 ICAO Annex 6, Part III, Section II: 8.3 R, 8.4 R  
 FAA Order 8400.10, Vol. 3, Chapter 5  
 14 CFR: 121.422; FAA AC 121-32*

**IS: 8.10.1.15 INITIAL AIRCRAFT FLIGHT TRAINING**

- (a) Each AOC holder shall ensure that pilot initial flight training includes at least the following:

*Note: Flight training may be conducted in an appropriate aircraft or adequate Flight Simulation Training Device. A = Aeroplane, H = Helicopter.*

- (1) Preparation.
  - (i) Visual inspection (for aircraft with a flight engineer, use of pictorial display authorised) A and H.
  - (ii) Pre-taxi procedures, A and H.
  - (iii) Performance limitations.
- (2) Surface operation.
  - (i) Pushback.
  - (ii) Powerback taxi, if applicable to the type of operation to be conducted.
  - (iii) Starting.
  - (iv) Taxi.
  - (v) Pre-takeoff checks.
- (3) Takeoff.
  - (i) Normal.
  - (ii) Crosswind.

**Implementing Standard: Part 8 - Operations**

- (iii) Rejected.
- (iv) Power failure after  $V_1$ .
- (v) Lower than standard minimum, if applicable to the type of operation to be conducted.
- (4) Climb.
  - (i) Normal.
  - (ii) One-engine inoperative during climb to en route altitude.
- (5) En route.
  - (i) Steep turns.
  - (ii) Approaches to stalls (takeoff, en route, and landing configurations).
  - (iii) Inflight powerplant shutdown.
  - (iv) Inflight powerplant restart.
  - (v) High speed handling characteristics.
- (6) Descent.
  - (i) Normal.
  - (ii) Maximum rate.
- (7) Approaches.
  - (i) VFR procedures.
  - (ii) Visual approach with 50% loss of power of available powerplants.
  - (iii) Visual approach with slat/flap malfunction.
  - (iv) IFR precision approaches (ILS normal and ILS with one-engine inoperative).
  - (v) IFR non-precision approaches (NDB normal and VOR normal).
  - (vi) Non-precision approach with one engine inoperative (LOC backcourse procedures, SDF/LDA, GPS, TACAN and circling approach procedures).

*Note: Simulator shall be qualified for training/checking on the circling manoeuvre.*

- (vii) Missed approach from precision approach.
- (viii) Missed approach from non-precision approach.
- (ix) Missed approach with powerplant failure.
- (8) Landings.

- (i) Normal with a pitch mistrim (small aircraft only).
  - (ii) Normal from precision instrument approach.
  - (iii) Normal from precision instrument approach with most critical engine inoperative.
  - (iv) Normal with 50% loss of power of available powerplants.
  - (v) Normal with flap/slat malfunction.
  - (vi) Rejected landings.
  - (vii) Crosswind.
  - (viii) Manual reversion/degraded control augmentation.
  - (ix) Short/soft field (small aircraft only).
  - (x) Glassy/rough water (seaplanes only).
- (9) After landing.
- (i) Parking.
  - (ii) Emergency evacuation.
  - (iii) Docking, mooring, and ramping (seaplanes only).
- (10) Other flight procedures during any airborne phase.
- (i) Airborne Collision Avoidance System: use and avoidance maneuvers
  - (ii) Holding.
  - (iii) Ice accumulation on airframe.
  - (iv) Air hazard avoidance.
  - (v) Windshear/microburst.
- (11) Normal, abnormal and alternate systems procedures during any phase.
- (i) Pneumatic/pressurisation.
  - (ii) Air conditioning.
  - (iii) Fuel and oil.
  - (iv) Electrical.
  - (v) Hydraulic.
  - (vi) Flight controls.

**Implementing Standard: Part 8 - Operations**

- (vii) Anti-icing and deicing systems.
  - (viii) Autopilot.
  - (ix) Flight management guidance systems and/or automatic or other approach and landing aids.
  - (x) Stall warning devices, stall avoidance devices, and stability augmentation systems.
  - (xi) Airborne weather radar.
  - (xii) Flight instrument system malfunction.
  - (xiii) Communications equipment.
  - (xiv) Navigation systems.
- (12) Emergency systems procedures during any phase.
- (i) Aircraft fires.
  - (ii) Smoke control.
  - (iii) Powerplant malfunctions.
  - (iv) Fuel jettison.
  - (v) Electrical, hydraulic, pneumatic systems.
  - (vi) Flight control system malfunction.
  - (vii) Landing gear and flap system malfunction.
- (b) Each AOC holder shall ensure that flight engineer flight training includes at least the following training and practice in procedures related to the carrying out of flight engineer duties and functions. This training and practice may be accomplished either in flight or in a flight simulation training device.
- (1) Preparation.
    - (i) Airplane preflight.
      - (A) Logbook procedures.
      - (B) Safety checks.
      - (C) Cabin/interiors.
      - (D) Exterior Walkaround.
      - (E) Servicing/deicing.
      - (F) Use of Oxygen.
  - (2) Ground Operations.

- (i) Performance Data.
    - (A) To/LND Data.
    - (B) Airport Analysis.
    - (C) Mass and Balance.
  - (ii) Use of Checklist.
    - (A) Panel setup.
  - (iii) Starting.
    - (A) External power.
    - (B) External Air.
    - (C) APU.
  - (iv) Communications.
    - (A) Station Procedures.
    - (B) ACARS.
  - (v) Taxi.
- (3) Takeoff.
- (i) Powerplant Control.
  - (ii) Flaps/landing gear.
  - (iii) Fuel management.
  - (iv) Other Systems Operation.
  - (v) Aircraft Performance.
  - (vi) Checklist Completion.
- (4) Climb.
- (i) Powerplant control.
  - (ii) Fuel Management.
  - (iii) Pressurization.
  - (iv) Electrical System.
  - (v) Air Conditioning.

## Implementing Standard: Part 8 - Operations

- (vi) Flight Controls.
- (vii) Other Systems.
- (5) En Route.
  - (i) Powerplant Operation.
  - (ii) Fuel Management.
  - (iii) Performance Management.
  - (iv) High Altitude Performance.
  - (v) Other Systems Operation.
- (6) Descent.
  - (i) Powerplant operation.
  - (ii) Other Systems Operation.
  - (iii) Performance Management.
- (7) Approach.
  - (i) Landing Data.
  - (ii) Landing Gear Operation.
  - (iii) Flat/Slat/Spoiler Operation.
  - (iv) Approach Monitoring.
- (8) Landings.
  - (i) Powerplant Operation.
  - (ii) Aircraft Configuration.
  - (iii) System Operation.
  - (iv) Emergency Evacuation.
- (9) Procedures During Any Ground or Airborne Phase.
  - (i) Cockpit Equipment.
  - (ii) Flap Slats/Gear.
  - (iii) Powerplant.
  - (iv) Pressurization.

- (v) Pneumatic.
- (vi) Air Conditioning.
- (vii) Fuel and Oil.
- (viii) Electrical.
- (ix) Hydraulic.
- (x) Flight Controls.
- (xi) Anti-Icing and Deicing.
- (xii) Other Checklist Procedures.

*FAA Order 8400.10, Vol. 3, Chapter 2, Table 3.2.6.7*

- (c) Each AOC holder shall ensure that flight navigator training includes at least the following:
  - (1) Initial flight training for flight navigators must include flight training and a flight check that is adequate to ensure the crew member's proficiency in the performance of his or her assigned duties.
  - (2) The flight training and check specified in paragraph (1) must be performed—
    - (i) In-flight or in an appropriate flight simulation training device; or
    - (ii) In commercial air transport operations, if performed under the supervision of a qualified flight navigator.
- (d) Each AOC holder shall ensure that initial flight training for pilots and flight engineers consists of at least the following programmed hours of instruction based on the aircraft to be used, unless a reduction is determined appropriate by the Authority:
  - (1) For one trainee in either an aircraft or flight simulation training devices —
    - (i) Piston-engined aircraft —PIC: 14 hours; CP: 14 hours; and FE: 12 hours.
    - (ii) Turbo-propeller-powered aircraft—PIC: 15 hours; CP: 15 hours; and FE: 12 hours.
    - (iii) Turbo-jet aircraft—PIC: 20 hours; CP: 16 hours; and FE: 12 hours.
    - (iv) Other aircraft—PIC and CP: 14 hours.
  - (2) For two pilots in a flight simulation training device —
    - (i) Piston-engined aircraft —PIC: 24 hours; CP: 24 hours; and FE: 20 hours.
    - (ii) Turbo-propeller-powered aircraft — PIC: 24 hours; CP: 24 hours; and FE: 20 hours.
    - (iii) Turbo-jet aircraft—PIC: 28 hours; CP: 28 hours; and FE: 20 hours.
    - (iv) Other aircraft— PIC and CP: 24 hours.

*14 CFR: 121.424; 121.435, 121.426*

Note: Training times in item (d) are higher than in 14 CFR and are taken from the FAA national norms in FAA Order 8400.10.

**IS: 8.10.1.16 INITIAL SPECIALISED OPERATIONS TRAINING**

- (a) Each AOC holder shall provide initial specialised operations training to ensure that each pilot and flight operations officer is qualified in the type of operation in which he or she serves and in any specialised or new equipment, procedures, and techniques, such as:
  - (1) Long-range navigation.
    - (i) Knowledge of specialised navigation procedures, such as MNPS, NPAC.
    - (ii) Knowledge of specialised equipment, such as INS, LORAN, GPS.
  - (2) CAT II and CAT III approaches.
    - (i) Special equipment, procedures and practice.
    - (ii) A demonstration of competency.
  - (3) Low visibility takeoff operations.
    - (i) Runway and lighting requirements.
    - (ii) Rejected takeoffs at, or near,  $V_1$  with a failure of the most critical engine.
    - (iii) Taxi operations.
    - (iv) Procedures to prevent runway incursions under low visibility conditions.
  - (4) Extended range operations with two engine aeroplanes.
  - (5) Approaches using an on-board radar.
  - (6) Autopilot instead of Co-pilot.

FAA Order 8400.10: Vol. 3, Chapter 2, Section 8

**IS: 8.10.1.17 AIRCRAFT DIFFERENCES**

- (a) Each AOC holder shall provide aircraft differences training for flight operations officers when the operator has aircraft variances within the same type of aircraft, which includes at least the following:
  - (1) Operations procedures—
    - (i) Operations under adverse weather phenomena conditions, including clear air turbulence, windshear, and thunderstorms.
    - (ii) Mass and balance computations and load control procedures.

- (iii) Aircraft performance computations, to include takeoff mass limitations based on departure runway, arrival runway, and en route limitations, and also engine-out limitations.
- (iv) Flight planning procedures, to include route selection, flight time, and fuel requirements analysis.
- (v) Dispatch release preparation.
- (vi) Crew briefings.
- (vii) Flight monitoring procedures.
- (viii) Flight crew response to various emergency situations, including the assistance the aircraft flight operations officer can provide in each situation.
- (ix) MEL and CDL procedures.
- (x) Manual performance of required procedures in case of the loss of automated capabilities.
- (xi) Training in appropriate geographic areas.
- (xii) ATC and instrument procedures, to include ground hold and central flow control procedures.
- (xiii) Radio/telephone procedures.
- (2) Emergency procedures—
  - (i) Actions taken to aid the flight crew.
  - (ii) AOC holder and Authority notification.

*Note: The FAA Flight Standardization Board, the Transport Canada and JAA Joint Operations Evaluation Board have a harmonised process and their reports are a source for differences training.*

*FAA Order 8400.10, Vol. 3, Chapter 6, Section 9*

**IS: 8.10.1.20 AIRCRAFT AND INSTRUMENT PROFICIENCY CHECK— PILOT**

- (a) Aircraft and instrument proficiency checks for PIC and CP must include the following operations and procedures listed in the appropriate skill test in Part 2, on each type or variant of type of aircraft.
- (b) The oral and flight test phases of a proficiency check should not be conducted simultaneously.
- (c) When the examiner determines that an applicant's performance is unsatisfactory, the examiner may terminate the flight test immediately or, with the consent of the applicant, continue with the flight test until the remaining events are completed.
- (d) If the check must be terminated (for mechanical or other reasons) and there are events which still need to be repeated, the examiner shall issue a letter of discontinuance, valid for 60 days, listing the specific areas of operation that have been successfully completed.

- (e) Satisfactory completion of a proficiency check following completion of an approved air carrier training programme for the particular type aircraft, satisfies the requirement for an aircraft type rating skill test if—
  - (1) That proficiency check includes all manoeuvres and procedures required for a type rating skill test.
  - (2) Proficiency checks are to be conducted by an examiner approved by the Authority.

*ICAO Annex 6, Part 1: 9.4.4.1*  
*ICAO Annex 6, Part III, Section II: 7.4.4.1*  
*14 CFR: 61.58(c)*

### **IS: 8.10.1.22 PAIRING OF LOW EXPERIENCE CREW MEMBERS**

- (a) Situations designated as critical by the Authority at special aerodromes designated by the Authority or at special aerodromes designated by the AOC holder include—
  - (1) The prevailing visibility value in the latest weather report for the aerodrome is at or below 1200 m (3/4 statute mile).
  - (2) The runway visual range for the runway to be used is at or below 1200m (4,000 ft).
  - (3) The runway to be used has water, snow, slush or similar conditions that may adversely affect aeroplane performance.
  - (4) The braking action on the runway to be used is reported to be less than "good".
  - (5) The crosswind component for the runway to be used is in excess of 15 knots.
  - (6) Windshear is reported in the vicinity of the aerodrome.
  - (7) Any other condition in which the PIC determines it to be prudent to exercise the PIC's prerogative.
- (b) Circumstances which would be routinely be considered for deviation from the required minimum line operating flight time include—
  - (1) A newly certified AOC holder does not employ any pilots who meet the minimum flight time requirements;
  - (2) An existing AOC holder adds to its fleet a type aeroplane not before proven for use in its operations; or
  - (3) An existing AOC holder establishes a new domicile to which it assigns pilots who will be required to become qualified on the aeroplanes operated from that domicile.

*14 CFR: 121.438*  
*JAR-OPS 1: AMC OPS 1.940(a)(4)*

### **IS: 8.10.1.24 COMPETENCE CHECKS—CABIN CREW MEMBERS**

- (a) Evaluators shall conduct competency checks for cabin crew members to demonstrate that each candidate's proficiency level is sufficient to successfully perform assigned duties and responsibilities.

- (b) A qualified supervisor or inspector, approved by the Authority, shall observe and evaluate competency checks for cabin crew members.
- (c) Evaluators shall include during each cabin crew member competency check a demonstrated knowledge of:
  - (1) Emergency equipment, if applicable—
    - (i) Emergency communication and notification systems.
    - (ii) Aircraft exits.
    - (iii) Exits with slides or sliderafts (emergency operation).
    - (iv) Slides and sliderafts in a ditching.
    - (v) Exits without slides (emergency operation).
    - (vi) Window exits (emergency operation).
    - (vii) Exits with tailcones (emergency operation).
    - (viii) Cockpit exits (emergency operation).
    - (ix) Ground evacuation and ditching equipment.
    - (x) First aid equipment.
    - (xi) Portable oxygen systems (oxygen bottles, chemical oxygen generators, protective breathing equipment (PBE)).
    - (xii) Firefighting equipment.
    - (xiii) Emergency lighting systems.
    - (xiv) Additional emergency equipment.
  - (2) Emergency procedures—
    - (i) General types of emergencies specific to aircraft.
    - (ii) Emergency communication signals and procedures.
    - (iii) Rapid decompression.
    - (iv) Insidious decompression and cracked window and pressure seal leaks.
    - (v) Fires.
    - (vi) Ditching.
    - (vii) Ground evacuation.
    - (viii) Unwarranted evacuation (i.e., Passenger initiated).

**Implementing Standard: Part 8 - Operations**

- (ix) Illness or injury.
- (x) Abnormal situations involving passengers or crew members.
- (xi) Turbulence.
- (xii) Other unusual situations.
- (3) Emergency drills—
  - (i) Location and use of all emergency and safety equipment carried on the aeroplane.
  - (ii) The location and use of all types of exits.
  - (iii) Actual donning of a lifejacket where fitted.
  - (iv) Actual donning of protective breathing equipment.
  - (v) Actual handling of fire extinguishers.
- (4) Crew Resource Management—
  - (i) Decision-making skills.
  - (ii) Briefings and developing open communication.
  - (iii) Inquiry, advocacy, and assertion training.
  - (iv) Workload management.
- (5) Dangerous goods—
  - (i) Recognition of and transportation of dangerous goods.
  - (ii) Proper packaging, marking, and documentation.
  - (iii) Instructions regarding compatibility, loading, storage and handling characteristics.
- (6) Security—
  - (i) Hijacking.
  - (ii) Disruptive passengers.

*FAA Order 8400.10, Vol. 3, Chapter 14, Section 1*

**IS: 8.10.1.33 RECURRENT TRAINING—FLIGHT CREW**

- (a) Each AOC holder shall establish a recurrent training programme for all flight crew members in the AOC holder's Operations Manual and shall have it approved by the Authority.
- (b) Each flight crew member shall undergo recurrent training relevant to the type or variant of aircraft on which he or she is certified to operate and for the crew member position involved.
- (c) Each AOC holder shall have all recurrent training conducted by suitably qualified personnel.

- (d) Each AOC holder shall ensure that flight crew member recurrent ground training includes at least the following:
- (1) General subjects.
    - (i) Flight locating procedures.
    - (ii) Principles and method for determining mass/balance and runway limitations.
    - (iii) Meteorology to ensure practical knowledge of weather phenomena including the principles of frontal system, icing, fog, thunderstorms, windshear, and high altitude weather situations.
    - (iv) ATC systems and phraseology.
    - (v) Navigation and use of navigational aids.
    - (vi) Normal and emergency communication procedures.
    - (vii) Visual cues before descent to MDA.
    - (viii) Accident/incident and occurrence review.
    - (ix) Other instructions necessary to ensure the pilot's competence.
  - (2) Aircraft systems and limitations.
    - (i) Normal, abnormal, and emergency procedures.
    - (ii) Aircraft performance characteristics.
    - (iii) Engines and ,if applicable, propellers.
    - (iv) Major aircraft components.
    - (v) Major aircraft systems (i.e., flight controls, electric, hydraulic and other systems as appropriate).
    - (vi) Ground icing and de-icing procedures and requirements.
  - (3) Emergency equipment and drills.
  - (4) Every 12 months—
    - (i) Location and use of all emergency and safety equipment carried on the aeroplane.
    - (ii) The location and use of all types of exits.
    - (iii) Actual donning of a lifejacket where fitted.
    - (iv) Actual donning of protective breathing equipment.
    - (v) Actual handling of fire extinguishers.

**Implementing Standard: Part 8 - Operations**

- (5) Every 3 years—
  - (i) Operation of all types of exits.
  - (ii) Demonstration of the method used to operate a slide, where fitted.
  - (iii) Fire-fighting using equipment representative of that carried in the aeroplane on an actual or simulated fire.

*Note: With halon extinguishers, an alternative method acceptable to the authority may be used.*

- (iv) Effects of smoke in an enclosed area and actual use of all relevant equipment in a simulated smoke-filled environment.
    - (v) Actual handling of pyrotechnics, real or simulated, where fitted.
    - (vi) Demonstration in the use of the life-raft(s), where fitted.
    - (vii) An emergency evacuation drill.
    - (viii) A ditching drill, if applicable.
    - (ix) A rapid decompression drill, if applicable.
  - (6) Crew resource management—
    - (i) Decision-making skills.
    - (ii) Briefings and developing open communication.
    - (iii) Inquiry, advocacy, and assertion training.
    - (iv) Workload management.
    - (v) Situational awareness.
  - (7) Dangerous goods—
    - (i) Recognition of and transportation of dangerous goods.
    - (ii) Proper packaging, marking, and documentation.
    - (iii) Instructions regarding compatibility, loading, storage and handling characteristics.
  - (8) Security—
    - (i) Hijacking.
    - (ii) Disruptive passengers.
- (e) Each AOC holder shall verify knowledge of the recurrent ground training by an oral or written examination.
  - (f) Each AOC holder shall ensure that pilot recurrent flight training include at least the following:

*Note: Flight training may be conducted in an appropriate aircraft or adequate flight simulation training device.*

- (1) Preparation—
  - (i) Visual inspection (use of pictorial display authorised).
  - (ii) Pre-taxi procedures.
- (2) Ground operation—
  - (i) Performance limitations.
  - (ii) Cockpit management.
  - (iii) Securing cargo.
  - (iv) Pushback.
  - (v) Powerback taxi, if applicable.
  - (vi) Starting.
  - (vii) Taxi.
  - (viii) Pre-takeoff checks.
- (3) Takeoff—
  - (i) Normal.
  - (ii) Crosswind.
  - (iii) Rejected.
  - (iv) Power failure after  $V_1$ .
  - (v) Powerplant failure during second segment.
  - (vi) Low Visibility Takeoff Operations.
- (4) Climb—
  - (i) Normal.
  - (ii) One-engine inoperative climb to en route altitude.
- (5) En route—
  - (i) Steep turns.
  - (ii) Approaches to stalls (takeoff, en route, and landing configurations).
  - (iii) Inflight powerplant shutdown.

- (iv) Inflight powerplant restart.
- (v) High speed handling characteristics.
- (6) Descent—
  - (i) Normal.
  - (ii) Maximum rate.
- (7) Approaches—
  - (i) VFR procedures.
  - (ii) Visual approach with 50% loss of power of available powerplants.
  - (iii) Visual approach with slat/flap malfunction.
  - (iv) IFR precision approaches (ILS normal and ILS with one-engine inoperative).
  - (v) IFR non-precision approaches (NDB normal and VOR normal).
  - (vi) Non-precision approach with one engine inoperative (LOC backcourse, SDF/LDA, GPS, TACAN and circling approach procedures).

*Note: Simulator shall be qualified for training/checking on the circling manoeuvre.*

- (vii) Missed approach from precision approach.
- (viii) Missed approach from non-precision approach.
- (ix) Missed approach with powerplant failure.
- (8) Landings—
  - (i) Abnormal with a pitch mistrim (small aircraft only).
  - (ii) Abnormal from precision instrument approach.
  - (iii) Abnormal from precision instrument approach with most critical engine inoperative.
  - (iv) Abnormal with 50% loss of power of available powerplants.
  - (v) Abnormal with flap/slat malfunction.
  - (vi) Rejected landings.
  - (vii) Crosswind.
  - (viii) Short/soft field (small aircraft only).
  - (ix) Glassy/rough water (seaplanes only).
- (9) After landing—

- (i) Parking.
  - (ii) Emergency evacuation.
  - (iii) Docking, mooring, and ramping (seaplanes only).
- (10) Other flight procedures during any airborne phase—
- (i) Airborne Collision Avoidance System: use and avoidance maneuvers
  - (ii) Holding.
  - (iii) Ice accumulation on airframe.
  - (iv) Air hazard avoidance.
  - (v) Windshear/microburst.
- (11) Normal, abnormal and alternate systems procedures during any phase—
- (i) Pneumatic/pressurisation.
  - (ii) Air conditioning.
  - (iii) Fuel and oil.
  - (iv) Electrical.
  - (v) Hydraulic.
  - (vi) Flight controls.
  - (vii) Anti-icing and deicing systems.
  - (viii) Flight management guidance systems and/or automatic or other approach and landing aids.
  - (ix) Stall warning devices, stall avoidance devices, and stability augmentation systems.
  - (x) Airborne weather radar.
  - (xi) Flight instrument system malfunction.
  - (xii) Communications equipment.
  - (xiii) Navigation systems.
  - (xiv) Autopilot.
  - (xv) Approach and landing aids.
  - (xvi) Flight instrument system malfunction.
- (12) Emergency systems procedures during any phase—

**Implementing Standard: Part 8 - Operations**

- (i) Aircraft fire.
  - (ii) Smoke control.
  - (iii) Powerplant malfunctions.
  - (iv) Fuel jettison.
  - (v) Electrical, hydraulic, pneumatic systems.
  - (vi) Flight control system malfunction.
  - (vii) Landing gear and flap system malfunction.
- (g) Each AOC holder shall ensure that flight engineer recurrent flight training includes at least the flight training specified in IS: 8.10.1.15(b).
- (h) Each AOC holder shall ensure that flight navigator recurrent training includes enough training and an in-flight check to ensure competency with respect to operating procedures and navigation equipment to be used and familiarity with essential navigation information pertaining to the AOC holder's routes that require a flight navigator.
- (i) The AOC holder may combine recurrent training with the AOC holder's proficiency check.
- (j) Recurrent ground and flight training curricula may be accomplished concurrently or intermixed, but completion of each of these curricula shall be recorded separately.

*FAA Order 8400.10, Vol. 3 (table 3.2.6.6)  
JAR-OPS 1: 1.965*

**IS: 8.10.1.34 RECURRENT NORMAL AND EMERGENCY TRAINING—CABIN CREW MEMBERS**

- (a) Each AOC holder shall establish and have approved by the Authority a recurrent training programme for all cabin crew members.
- (b) Each cabin crew member shall undergo recurrent training in evacuation and other appropriate normal and emergency procedures and drills relevant to his or her assigned positions and the type(s) and/or variant(s) of aircraft on which he or she operates.
- (c) Each AOC holder shall have all recurrent training conducted by suitably qualified personnel.
- (d) Each AOC holder shall ensure that, every 12 months, each cabin crew member receive recurrent training in at least the following:
- (1) Emergency equipment, if applicable—
    - (i) Emergency communication and notification systems.
    - (ii) Aircraft exits.
    - (iii) Exits with slides or sliderafts (emergency operation).
    - (iv) Slides and sliderafts in a ditching.

- (v) Exits without slides (emergency operation).
  - (vi) Window exits (emergency operation).
  - (vii) Exits with tailcones (emergency operation).
  - (viii) Cockpit exits (emergency operation).
  - (ix) Ground evacuation and ditching equipment.
  - (x) First aid equipment.
  - (xi) Portable oxygen systems (oxygen bottles, chemical oxygen generators, protective breathing equipment (PBE)).
  - (xii) Firefighting equipment.
  - (xiii) Emergency lighting systems.
  - (xiv) Additional emergency equipment.
- (2) Emergency procedures—
- (i) General types of emergencies specific to aircraft.
  - (ii) Emergency communication signals and procedures.
  - (iii) Rapid decompression.
  - (iv) Insidious decompression and cracked window and pressure seal leaks.
  - (v) Fires.
  - (vi) Ditching.
  - (vii) Ground evacuation.
  - (viii) Unwarranted evacuation (i.e., passenger initiated).
  - (ix) Illness or injury.
  - (x) Abnormal situations involving passengers or crew members.
  - (xi) Turbulence.
  - (xii) Other unusual situations.
- (3) Emergency drills.
- (4) Every 12 months—
- (i) Location and use of all emergency and safety equipment carried on the aeroplane.
  - (ii) The location and use of all types of exits.

**Implementing Standard: Part 8 - Operations**

- (iii) Actual donning of a lifejacket where fitted.
- (iv) Actual donning of protective breathing equipment.
- (v) Actual handling of fire extinguishers.
- (5) Every 3 years—
  - (i) Operation of all types of exits.
  - (ii) Demonstration of the method used to operate a slide, where fitted.
  - (iii) Fire-fighting using equipment representative of that carried in the aeroplane on an actual or simulated fire.

*Note: With Halon extinguishers, an alternative method acceptable to the Authority may be used.*

- (iv) Effects of smoke in an enclosed area and actual use of all relevant equipment in a simulated smoke-filled environment.
- (v) Actual handling of pyrotechnics, real or simulated, where fitted.
- (vi) Demonstration in the use of the life-raft(s), where fitted.
- (vii) An emergency evacuation drill.
- (viii) A ditching drill, if applicable.
- (ix) A rapid decompression drill, if applicable.
- (6) Crew resource management—
  - (i) Decision-making skills.
  - (ii) Briefings and developing open communication.
  - (iii) Inquiry, advocacy, and assertion training.
  - (iv) Workload management.
- (7) Dangerous goods—
  - (i) Recognition of and transportation of dangerous goods.
  - (ii) Proper packaging, marking, and documentation.
  - (iii) Instructions regarding compatibility, loading, storage and handling characteristics.
- (8) Security—
  - (i) Hijacking.
  - (ii) Disruptive passengers.

- (e) An AOC holder may administer each of the recurrent training curricula concurrently or intermixed, but shall record completion of each of these curricula separately.

*ICAO Annex 6, Part I: 12.4  
ICAO Annex 6, Part III, Section II: 10.3  
FAA Order 8400.10: Vol. 3, Chapter 14  
JAR-OPS 1: 1.1015*

**IS: 8.10.1.35 RECURRENT TRAINING—FLIGHT OPERATIONS OFFICER**

- (a) Each AOC holder shall establish and maintain a recurrent training programme, approved by the Authority and established in the AOC holder's Operations Manual, to be completed annually by each flight operations officer.
- (b) Each flight operations officer shall undergo recurrent training relevant to the type(s) and/or variant(s) of aeroplane and operations conducted by the AOC holder, and that training shall consist of at least the following hours of instruction:
  - (1) Piston-engined aircraft – 8 hours.
  - (2) Turbopropeller-powered aircraft – 10 hours.
  - (3) Turbo-jet aircraft – 20 hours.
  - (4) Other aircraft – 10 hours.
- (c) Each AOC holder shall have all recurrent training conducted by an appropriately qualified dispatch supervisor or ground instructor.
- (d) An AOC holder shall ensure that, every 12 months, each flight operations officer receives recurrent training in the subjects required for initial training listed in IS: 8.10.1.14D in sufficient detail to ensure proficiency in each specified area of training. Operators may choose to provide in-depth coverage of selected subjects on any one cycle of training. In such cases the operator's training programme must cover all the subjects to the detail required for initial qualification within three years.
- (e) An AOC holder shall record completion of the required training.

*ICAO Annex 6, Part I: 10.3 R, 10.4 R  
ICAO Annex 6, Part III, Section II: 8.3 R, 8.4 R  
FAA Order 8400.10, Vol. 3, Chapter 5, Section 5*

**IS: 8.10.1.37 FLIGHT INSTRUCTOR TRAINING**

- (a) No operator may use a person, nor may any person serve as flight instructor in a training programme unless:
  - (1) That person has satisfactorily completed initial or transition flight instructor training; and
  - (2) Within the preceding 24 calendar months, that person satisfactorily conducts instruction under the observation of an inspector from the Authority or an AOC holder's check airman.
- (b) An AOC holder may accomplish the observation check for a flight instructor, in part or in full, in an aeroplane or a flight simulation training device.

- (c) Each AOC holder shall ensure that initial ground training for flight instructors includes the following—
  - (1) Flight instructor duties, functions, and responsibilities.
  - (2) Applicable regulations and the AOC holder's policies and procedures.
  - (3) Appropriate methods, procedures, and techniques for conducting the required checks.
  - (4) Proper evaluation of student performance including the detection of:
    - (i) Improper and insufficient training; and
    - (ii) Personal characteristics of an applicant that could adversely affect safety.
  - (5) Appropriate corrective action in the case of unsatisfactory checks.
  - (6) Approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the aeroplane.
  - (7) Except for holders of existing flight instructor licences:
    - (i) The fundamental principles of the teaching-learning process;
    - (ii) Teaching methods and procedures; and
    - (iii) The instructor-student relationship.
- (d) Each AOC holder shall ensure that the transition ground training for flight instructors includes the approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures applicable to the aeroplane to which the flight instructor is in transition.
- (e) Each AOC holder shall ensure that the initial and transition flight training for flight instructors (aircraft), flight engineer instructors, and flight navigator instructors includes the following:
  - (1) The safety measures for emergency situations that are likely to develop during instruction.
  - (2) The potential results of improper, untimely, or non-execution of safety measures during instruction.
  - (3) For pilot flight instructor (aircraft):
    - (i) Inflight training and practice in conducting flight instruction from the left and right pilot seats in the required normal, abnormal, and emergency procedures to ensure competence as an instructor; and
    - (ii) The safety measures to be taken from either pilot seat for emergency situations that are likely to develop during instruction.
  - (4) For flight engineer instructors and flight navigator instructors, in-flight training to ensure competence to perform assigned duties.
  - (5) An AOC holder may accomplish the flight training requirements for flight instructors in full or in part in flight or in a flight simulation training device, as appropriate.

- (6) An AOC holder shall ensure that the initial and transition flight training for flight instructors (flight simulation training device) includes the following:
  - (i) Training and practice in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight instruction required by this part. This training and practice shall be accomplished in full or in part in a flight simulation training device.
  - (ii) Training in the operation of flight simulation training devices, to ensure competence to conduct the flight instruction required by this Part.

14 CFR: 121.414

**IS: 8.10.1.40 CHECK AIRMAN TRAINING**

- (a) No operator may use a person, nor may any person serve as a check airman (aircraft) or check airman (flight simulation training device) in a training programme unless, with respect to the aircraft type involved, that person has satisfactorily completed the appropriate training phases for the aircraft, including recurrent training and differences training, that are required to serve as PIC or flight engineer, as applicable.
- (b) Each AOC holder shall ensure that initial ground training for check airmen includes:
  - (1) Check airman duties, functions, and responsibilities.
  - (2) Applicable regulations and the AOC holder's policies and procedures.
  - (3) Appropriate methods, procedures, and techniques for conducting the required checks.
  - (4) Proper evaluation of student performance including the detection of:
    - (i) Improper and insufficient training.
    - (ii) Personal characteristics of an applicant that could adversely affect safety.
  - (5) Appropriate corrective action in the case of unsatisfactory checks.
  - (6) Approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the aircraft.
- (c) Transition ground training for all check airmen shall include the approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures applicable to the aircraft to which the check airman is in transition.
- (d) For pilot check airmen, each AOC holder shall ensure that the initial and transition flight training includes:
  - (1) Training and practice in conducting flight evaluations (from the left and right pilot seats for pilot check airmen) in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight checks.
  - (2) The potential results of improper, untimely, or non-execution of safety measures during an evaluation.

**Implementing Standard: Part 8 - Operations**

- (3) The safety measures (to be taken from either pilot seat for pilot check airmen) for emergency situations that are likely to develop during an evaluation.
- (e) For FE check airmen and FN check airmen, each AOC holder shall ensure training to ensure competence to perform assigned duties to include:
  - (1) The safety measures for emergency situations that are likely to develop during a check.
  - (2) The potential results of improper, untimely, or non-execution of safety measures during a check.
- (f) Each AOC holder shall ensure that the initial and transition flight training for check airmen (flight simulation training device) includes:
  - (1) Training and practice in conducting flight checks in the required normal, abnormal, and emergency procedures to ensure competence to conduct the evaluations checks required by this part (this training and practice shall be accomplished in a flight simulation training device).
  - (2) Training in the operation of flight simulation training devices, to ensure competence to conduct the evaluations required by this Part.
- (g) An AOC holder may accomplish flight training for check airmen in full or in part in an aircraft or in a flight simulation training device, as appropriate.
- (h) The AOC holder shall record the training in each individuals training record maintained by the AOC holder.

*14 CFR: 121.413; 121.411(d)*

**IS: 8.11.1.2 DUTY AND REST PERIODS**

- (a) Each AOC holder, scheduling official and crew member shall use the following tables , as appropriate, to consolidate all scheduling and actual event requirements with respect to crew member flight time, duty and rest periods for commercial air transport operations.

**Table 1**

<b>CONDITIONS REQUIRED FOR FLIGHT CREW MEMBER REST REDUCTION .</b>			
<b>Flight Deck Duty Period (Hours)</b>	<b>Normal Rest Period. (Hours)</b>	<b>Authorised Reduced Rest Period (Hours)</b>	<b>Next Rest Period if Reduction Taken</b>
<b>Less than 8</b>	<b>9</b>	8	10
<b>8-9</b>	<b>10</b>	8	11
<b>9 or more</b>	<b>11</b>	9	12

ICAO Annex 6, Part I, Attachment A: 3.2  
 ICAO Annex 6, Part III, Section II: Attachment C: 5.2  
 14 CFR: 121.471(b)(1)-(3), (c)(1)-(3); 14 CFR: 135:265(b)(1)-(3), (c)(1)-(3)

**Table 2**

<b>CONDITIONS REQUIRED FOR CABIN CREW MEMBER REST REDUCTION .</b>				
<b>Scheduled Duty Period (Hours)</b>	<b>Extra Cabin crew members Required</b>	<b>Normal Rest Period. (Hours)</b>	<b>Authorised Reduced Rest Period (Hours)</b>	<b>Next Rest Period if Reduction Taken</b>
<b>14 or less</b>	0	<b>9</b>	8	10
<b>14-16</b>	1	<b>12</b>	10	14
<b>16-18</b>	2	<b>12</b>	10	14
<b>18-20</b>	3	<b>12</b>	10	14

ICAO Annex 6, Part I, Attachment A: 3.2  
 ICAO Annex 6, Part III, Section II: Attachment C: 5.2  
 14 CFR: 121.467(b)(2)-(9); 135.273(b)(2)-(8)

*Note. Each Contracting State is required to have flight and duty time regulations. The above times are from the United States and are used as an example.*

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