Proposal for a Regulation of the European Parliament and of the Council amending Council Regulation (EEC) No 3922/91 on the harmonisation of technical requirements and administrative procedures in the field of civil aviation

(2000/C 311 E/03)

(Text with EEA relevance)

COM(2000) 121 final — 2000/0069(COD)

(Submitted by the Commission on 24 March 2000)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 80(2) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the Economic and Social Committee,

Having regard to the opinion of the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty,

Whereas:

(1) Council Regulation (EEC) No 3922/91 [1] provides for common safety standards listed in Annex II to that Regulation with respect to the design, manufacturing, operation and maintenance of aircraft, as well as persons and organisations involved in those tasks. Those harmonised safety standards apply to all aircraft operated by Community operators whether registered in a Member State or in a third country. Article 4(1) of that Regulation requires the Council to adopt common technical requirements and administrative procedures on the basis of Article 80(2) of the Treaty for the fields not listed in Annex II to the Regulation.

(2) Article 9 of Council Regulation (EEC) No 2407/92 of 23 July 1992 on licensing of air carriers [2] provides that the granting and validity at any time of an operating licence is to be dependent upon the possession of a valid Air Operator Certificate specifying the activities covered by the operating licence and complying with the criteria established in the relevant Council Regulation. It is now appropriate to establish such criteria.

(3) The Joint Aviation Authority (JAA) has adopted a set of harmonised rules for commercial air transportation by aeroplane, called JAR-OPS 1. JAR-OPS1 (Change 1 of 1 March 1998) provides for the level of safety required for this type of operation and therefore constitutes a good basis for Community law, covering the operation of aeroplanes. Changes had to be made to this text in order to bring it into conformity with Community legislation and policies, account being taken of its numerous implications in the economic and social field. The revised text differs from JAR-OPS 1 and cannot therefore be introduced into Community law by a simple reference to its title in Annex II to Regulation (EEC) No 3922/91. A new Annex III containing the necessary requirements should therefore be added to that Regulation.

(4) Air operators should be given sufficient flexibility to address unforeseen urgent operational circumstances, or operational needs of a limited duration, or to demonstrate that they can achieve an equivalent level of safety by means other than the application of the common rules in Annex III. The same kind of flexibility is also necessary in the application of other JARs listed in Annex II to Regulation (EEC) No 3922/91. Member States should therefore be empowered to grant exemptions to the common technical requirements and administrative procedures. Such exemptions could, in certain cases, undermine the common safety requirements or create distortions in the market, and their scope should therefore be strictly limited and their granting subject to the appropriate Community control.

(5) Provisions concerning the Committee procedure should be amended to take account of Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission [3].

(6) Council Regulation (EEC) No 3922/91 should therefore be amended accordingly,

HAVE ADOPTED THIS REGULATION:

Article 1

Regulation (EEC) No 3922/91 is amended as follows:

1. Article 1(1) is replaced by the following:

'1. This Regulation shall apply to the harmonisation of technical requirements and administrative procedures in the field of civil aviation safety as listed in Annex II and Annex III, and in particular with respect to:

[1] OJ L 373, 31.12.1991, p. 4, as last amended by Commission Regulation (EC) No 1069/1999 (OJ L 130, 26.5.1999, p. 16).

[2] OJ L 240, 24.8.1992, p. 1.

[3] OJ L 184, 17.7.1999, p. 23.

(a) the design, manufacture, operation and maintenance of aircraft,

(b) persons and organisations involved in these tasks.'

2. Article 3 is replaced by the following:

'*Article 3*

1. Without prejudice to Article 11, the common technical requirements and administrative procedures applicable in the Community with regard to the fields listed in Annex II shall be the relevant codes referred to in that Annex and in force on 1 January 1992.

2. Without prejudice to Article 11, the common technical requirements and administrative procedures applicable in the Community with regard to commercial transportation by aeroplane shall be those specified in Annex III.'

3. Article 4(1) is replaced by the following:

'1. With regard to the fields not covered by Annexes II or III, the Council shall adopt common technical requirements and administrative procedures on the basis of Article 80(2) of the Treaty. The Commission shall, where appropriate and as soon as possible, submit suitable proposals in these fields.'

4. Article 8 is replaced by the following:

'*Article 8*

1. The provisions in Articles 3 to 7 shall not prevent a Member State from reacting immediately to a safety problem which involves a product, a person or an organisation subject to the provisions of this Regulation. In such a case the Member States shall notify to the Commission and to the other Member States the measures taken and the reasons therefor.

2. The Commission shall decide, in accordance with the procedure referred to in Article 12(2), whether an inadequate level of safety or a shortcoming in the common technical requirements and administrative procedures justifies the continuing application of the measures adopted pursuant to paragraph 1 of this Article. In such case, it shall also take the necessary steps to amend the related common technical requirements and administrative procedures in accordance with Article 4 or Article 11. If the Member State's measures are found not to be justified, the Member State shall revoke the measures in question.

3. Member States may grant exemptions from the technical requirements and administrative procedures specified by this Regulation in the case of unforeseen urgent operational circumstances or operational needs of a limited duration. In these cases the Commission and the other Member States shall be informed as soon as possible of the exemptions granted.

4. The Commission, following the procedure referred to in Article 12(2), may decide that exemptions granted in accordance with paragraph 3 of this Article do not comply with the general safety objectives of this Regulation, or any other rule of Community law. In such case the Member State shall revoke the exemption.

5. In circumstances where a safety level equivalent to that attained by the application of the common technical requirements and administrative procedures included in Annexes I, II and III to this Regulation can be achieved by other means, Member States may, without discrimination on grounds of nationality of the applicants and having regard to the need not to distort competition, grant approval derogating from these provisions. In such cases, the Member State concerned shall notify the Commission before granting such approval and give reasons demonstrating the need to derogate from the common technical requirements and administrative procedures, as well as the conditions foreseen to ensure an equivalent level of safety is achieved.

6. The Commission, following the procedure referred to in Article 12(2), shall decide whether an approval proposed in accordance with paragraph 5 of this Article presents an equivalent level of safety and can be granted. In such a case, it will notify its decision to all Member States which shall also be entitled to apply that measure. The relevant provisions of Annexes II and III may also be amended to reflect such a measure.

The provisions of Articles 6(1) and 7 shall apply to the measure in question.'

5. Article 11(1) is replaced by the following:

'1. The Commission, following the procedure referred to in Article 12(2), shall make the amendments necessitated by scientific and technical progress to the common technical requirements and administrative procedures listed in the Annexes.'

6. In Article 12, paragraphs 2 and 3 are replaced by the following:

'2. Where reference is made to this paragraph, the regulatory procedure laid down in Article 5 of Council Decision 1999/468/EC (*) shall apply, in compliance with Article 7(3) and Article 8 thereof.

3. The period provided for in Article 5(6) of Decision 1999/468/EC shall be three months.

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(*) OJ L 184, 17.7.1999, p. 23.'

7. The text in the Annex to this Regulation is added as Annex III.

Article 2

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Communities*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

ANNEX

'ANNEX III

COMMON TECHNICAL REQUIREMENTS AND ADMINISTRATIVE PROCEDURES APPLICABLE TO COMMERCIAL TRANSPORTATION BY AIRCRAFT

OPS 1: Commercial Air Transportation (Aeroplanes)

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SUBPART A

APPLICABILITY

OPS 1.001

Applicability

(See Appendix 1 to OPS 1.001)

(a) OPS Part 1 prescribes requirements applicable to the operation of any civil aeroplane for the purpose of commercial air transportation by any operator whose principal place of business and, if any, its registered office is in a Member State, thereafter called operator. OPS 1 does not apply to aeroplanes when used in military, customs and police services.

(b) The requirements in OPS Part 1 are applicable:

1. For operators of aeroplanes over 10 tonnes Maximum Take-Off Mass or a maximum approved passenger seating configuration of 20 or more, or with mixed fleets of aeroplanes above and below this discriminant, no later than ... unless otherwise indicated.

2. For operators of all other aeroplanes, no later than ... unless otherwise indicated.

Appendix 1 to OPS 1.001

Late compliance dates contained in OPS 1

Some of the provisions included in OPS 1 have dates of compliance which are later than the applicability date of OPS 1. The provisions where this is the case, and the associated later dates of compliance, are as follows:

— OPS 1.470 (f) ...

— OPS 1.652 "Notes" ...

— OPS 1.652 (m) ...

— OPS 1.665 (a) 2 ...

— OPS 1.668 (a) 1 ...

— OPS 1.668 (a) 2 ...

— OPS 1.670 (a) 3 ...

— OPS 1.685 ...

— OPS 1.705 (a) ...

— OPS 1.725 (a) ...

— OPS 1.780 (a) ...

— OPS 1.805 (a) 2 ...

— OPS 1.805 (c) 2 ...

SUBPART B

GENERAL

OPS 1.005

General

(a) An operator shall not operate an aeroplane for the purpose of commercial air transportation other than in accordance with OPS Part 1.

(b) An operator shall comply with any airworthiness requirements applicable to aeroplanes operated for the purpose of commercial air transportation.

(c) Each aeroplane shall be operated in compliance with the terms of its Certificate of Airworthiness and within the approved limitations contained in its Aeroplane Flight Manual

OPS 1.010

Exemptions

Subject to the applicable common review procedures the Authority may exceptionally and temporarily grant an exemption from the provisions of OPS Part 1 when satisfied that there is a need and subject to compliance with any supplementary condition the Authority considers necessary in order to ensure an acceptable level of safety in the particular case.

OPS 1.015

Operational Directives

(a) Subject to the applicable common review procedures the Authority may direct by means of an Operational Directive that an operation shall be prohibited, limited or subject to certain conditions, in the interests of safe operations.

(b) Operational Directives state:

1. The reason for issue;

2. Applicability and duration; and

3. Action required by the operator(s).

(c) Operational Directives are supplementary to the provisions of OPS Part 1.

OPS 1.020

Laws, Regulations and Procedures Operator's Responsibilities

An operator must ensure that:

1. All employees are made aware that they shall comply with the laws, regulations and procedures of those States in which operations are conducted and which are pertinent to the performance of their duties; and

2. All crew members are familiar with the laws, regulations and procedures pertinent to the performance of their duties.

OPS 1.025

Common Language

(a) An operator must ensure that all crew members can communicate in a common language.

(b) An operator must ensure that all operations personnel are able to understand the language in which those parts of the Operations Manual which pertain to their duties and responsibilities are written.

OPS 1.030

Minimum Equipment Lists — Operator's Responsibilities

(a) An operator shall establish, for each aeroplane, a Minimum Equipment List (MEL) approved by the Authority. This shall be based upon, but no less restrictive than, the relevant Master Minimum Equipment List (MMEL) (if this exists) accepted by the Authority.

(b) An operator shall not operate an aeroplane other than in accordance with the MEL unless permitted by the Authority. Any such permission will in no circumstances permit operation outside the constraints of the MMEL.

OPS 1.035

Quality system

(a) An operator shall establish one Quality System and designate one Quality Manager to monitor compliance with, and adequacy of, procedures required to ensure safe operational practices and airworthy aeroplanes. Compliance monitoring must include a feed-back system to the Accountable Manager (See also OPS 1.175 (h)) to ensure corrective action as necessary.

(b) The Quality System must include a Quality Assurance Programme that contains procedures designed to verify that all operations are being conducted in accordance with all applicable requirements, standards and procedures.

(c) The Quality System, and the Quality Manager, must be acceptable to the Authority.

(d) The Quality System must be described in relevant documentation.

(e) Notwithstanding sub-paragraph (a) above, the Authority may accept the nomination of two Quality Managers, one for operations and one for maintenance provided that the operator has designated one Quality Management Unit to ensure that the Quality System is applied uniformly throughout the entire operation.

OPS 1.037

Accident prevention and flight safety programme

An operator shall establish an accident prevention and flight safety programme, which may be integrated with the Quality System, including:

1. A programme to achieve and maintain risk awareness by all persons involved in operations; and

2. Evaluation of relevant information relating to accidents and incidents and the promulgation of related information.

OPS 1.040

Additional crew members

An operator shall ensure that crew members who are not required flight or cabin crew members, have also been trained in, and are proficient to perform, their assigned duties.

OPS 1.050

Search and rescue information

An operator shall ensure that essential information pertinent to the intended flight concerning search and rescue services is easily accessible on the flight deck.

OPS 1.055

Information on emergency and survival equipment carried

An operator shall ensure that there are available for immediate communication to rescue coordination centres, lists containing information on the emergency and survival equipment carried on board all of his aeroplanes. The information shall include, as applicable, the number, colour and type of life-rafts and pyrotechnics, details of emergency medical supplies, water supplies and the type and frequencies of emergency portable radio equipment.

OPS 1.060

Ditching

An operator shall not operate an aeroplane with an approved passenger seating configuration of more than 30 passengers on overwater flights at a distance from land suitable for making an emergency landing, greater than 120 minutes at cruising speed, or 400 nautical miles, whichever is the lesser, unless the aeroplane complies with the ditching requirements prescribed in the applicable airworthiness code.

OPS 1.065

Carriage of weapons of war and munitions of war

(a) An operator shall not transport weapons of war and munitions of war by air unless an approval to do so has been granted by all States concerned.

(b) An operator shall ensure that weapons of war and munitions of war are:

1. Stowed in the aeroplane in a place which is inaccessible to passengers during flight; and

2. In the case of firearms, unloaded,

unless, before the commencement of the flight, approval has been granted by all States concerned that such weapons of war and munitions of war may be carried in circumstances that differ in part or in total from those indicated in this sub-paragraph.

(c) An operator shall ensure that the commander is notified before a flight begins of the details and location on board the aeroplane of any weapons of war and munitions of war intended to be carried.

OPS 1.070

Carriage of sporting weapons and ammunition

(a) An operator shall take all reasonable measures to ensure that any sporting weapons intended to be carried by air are reported to him.

(b) An operator accepting the carriage of sporting weapons shall ensure that they are:

1. Stowed in the aeroplane in a place which is inaccessible to passengers during flight unless the Authority has determined that compliance is impracticable and has accepted that other procedures might apply; and

2. In the case of firearms or other weapons that can contain ammunition, unloaded.

(c) Ammunition for sporting weapons may be carried in passengers' checked baggage, subject to certain limitations, in accordance with the Technical Instructions (see OPS 1.1160 (b) 5) as defined in OPS 1.1150 (a) 14.

OPS 1.075

Method of carriage of persons

An operator shall take all reasonable measures to ensure that no person is in any part of an aeroplane in flight which is not a part designed for the accommodation of persons unless temporary access has been granted by the commander to any part of the aeroplane:

1. For the purpose of taking action necessary for the safety of the aeroplane or of any person, animal or goods therein; or

2. In which cargo or stores are carried, being a part which is designed to enable a person to have access thereto while the aeroplane is in flight.

OPS 1.085

Crew responsibilities

(a) A crew member shall be responsible for the proper execution of his duties that:

1. Are related to the safety of the aeroplane and its occupants; and

2. Are specified in the instructions and procedures laid down in the Operations Manual.

(b) A crew member shall:

1. Report to the commander any incident that has endangered, or may have endangered, safety; and

2. Make use of the operator's incident reporting schemes in accordance with OPS 1.420. In all such cases, a copy of the report(s) shall be communicated to the commander concerned.

(c) A crew member shall not perform duties on an aeroplane:

1. While under the influence of any drug that may affect his faculties in a manner contrary to safety;

2. Following deep sea diving except when a reasonable time period has elapsed;

3. Following blood donation except when a reasonable time period has elapsed;

4. If he is in any doubt of being able to accomplish his assigned duties; or

5. If he knows or suspects that he is suffering from fatigue, or feels unfit to the extent that the flight may be endangered.

(d) A crew member shall not:

1. Consume alcohol less than 8 hours prior to the specified reporting time for flight duty or the commencement of standby;

2. Commence a flight duty period with a blood alcohol level in excess of 0,2 promille;

3. Consume alcohol during the flight duty period or whilst on standby.

(e) The commander shall:

1. Be responsible for the safe operation of the aeroplane and safety of its occupants during flight time;

2. Have authority to give all commands he deems necessary for the purpose of securing the safety of the aeroplane and of persons or property carried therein;

3. Have authority to disembark any person, or any part of the cargo, which, in his opinion, may represent a potential hazard to the safety of the aeroplane or its occupants;

4. Not allow a person to be carried in the aeroplane who appears to be under the influence of alcohol or drugs to the extent that the safety of the aeroplane or its occupants is likely to be endangered;

5. Have the right to refuse transportation of inadmissible passengers, deportees or persons in custody if their carriage poses any risk to the safety of the aeroplane or its occupants;

6. Ensure that all passengers are briefed on the location of emergency exits and the location and use of relevant safety and emergency equipment;

7. Ensure that all operational procedures and check lists are complied with in accordance with the Operations Manual;

8. Not permit any crew member to perform any activity during take-off, initial climb, final approach and landing except those duties required for the safe operation of the aeroplane;

9. Not permit:

(i) A flight data recorder to be disabled, switched off or erased during flight nor permit recorded data to be erased after flight in the event of an accident or an incident subject to mandatory reporting;

(ii) A cockpit voice recorder to be disabled or switched off during flight unless he believes that the recorded data, which otherwise would be erased automatically, should be preserved for incident or accident investigation nor permit recorded data to be manually erased during or after flight in the event of an accident or an incident subject to mandatory reporting;

10. Decide whether or not to accept an aeroplane with unserviceabilities allowed by the CDL or MEL; and

11. Ensure that the pre-flight inspection has been carried out.

(f) The pilot-in-command shall, in an emergency situation that requires immediate decision and action, take any action he considers necessary under the circumstances. In such cases he may deviate from rules, operational procedures and methods in the interest of safety.

OPS 1.090

Authority of the commander

An operator shall take all reasonable measures to ensure that all persons carried in the aeroplane obey all lawful commands given by the commander for the purpose of securing the safety of the aeroplane and of persons or property carried therein.

OPS 1.100

Admission to flight deck

(a) An operator must ensure that no person, other than a flight crew member assigned to a flight, is admitted to, or carried in, the flight deck unless that person is:

1. An operating crew member;

2. A representative of the Authority responsible for certification, licensing or inspection if this is required for the performance of his official duties; or

3. Permitted by, and carried in accordance with instructions contained in the Operations Manual.

(b) The commander shall ensure that:

1. In the interests of safety, admission to the flight deck does not cause distraction and/or interfere with the flight's operation; and

2. All persons carried on the flight deck are made familiar with the relevant safety procedures.

(c) The final decision regarding the admission to the flight deck shall be the responsibility of the commander.

OPS 1.105

Unauthorised carriage

An operator shall take all reasonable measures to ensure that no person secretes himself or secretes cargo on board an aeroplane.

OPS 1.110

Portable electronic devices

An operator shall not permit any person to use, and take all reasonable measures to ensure that no person does use, on board an aeroplane a portable electronic device that can adversely affect the performance of the aeroplane's systems and equipment.

OPS 1.115

Alcohol and drugs

An operator shall not permit any person to enter or be in, and take all reasonable measures to ensure that no person enters or is in, an aeroplane when under the influence of alcohol or drugs to the extent that the safety of the aeroplane or its occupants is likely to be endangered.

OPS 1.120

Endangering safety

An operator shall take all reasonable measures to ensure that no person recklessly or negligently acts or omits to act

1. so as to endanger an aeroplane or person therein;

2. so as to cause or permit an aeroplane to endanger any person or property.

OPS 1.125

Documents to be carried

(a) An operator shall ensure that the following documents or copies thereof are carried on each flight:

1. Certificate of Registration;

2. Certificate of Airworthiness;

3. Noise Certificate (if applicable);

4. Air Operator Certificate;

5. Aircraft Radio Licence; and

6. Third party liability Insurance Certificate(s).

(b) Each flight crew member shall, on each flight, carry a valid flight crew licence with appropriate rating(s) for the purpose of the flight.

OPS 1.130

Manuals to be carried

An operator shall ensure that:

1. The current parts of the Operations Manual relevant to the duties of the crew are carried on each flight;

2. Those parts of the Operations Manual which are required for the conduct of a flight are easily accessible to the crew on board the aeroplane; and

3. The current Aeroplane Flight Manual is carried in the aeroplane unless the Authority has accepted that the Operations Manual prescribed in OPS 1.1045, Appendix 1, Part B contains relevant information for that aeroplane.

OPS 1.135

Additional information and forms to be carried

(a) An operator shall ensure that, in addition to the documents and manuals prescribed in OPS 1.125 and OPS 1.130, the following information and forms, relevant to the type and area of operation, are carried on each flight:

1. Operational Flight Plan containing at least the information required in OPS 1.1060;

2. Aeroplane Technical Log containing at least the information required in OPS 1.915 (a);

3. Details of the filed ATS flight plan;

4. Appropriate NOTAM/AIS briefing documentation;

5. Appropriate meteorological information;

6. Mass and balance documentation as specified in Subpart J;

7. Notification of special categories of passenger such as security personnel, if not considered as crew, handicapped persons, inadmissible passengers, deportees and persons in custody;

8. Notification of special loads including dangerous goods including written information to the commander as prescribed in OPS 1.1215 (d);

9. Current maps and charts and associated documents as prescribed in OPS 1.290 (b) 7;

10. Any other documentation which may be required by the States concerned with this flight, such as cargo manifest, passenger manifest etc; and

11. Forms to comply with the reporting requirements of the Authority and the operator.

(b) The Authority may permit the information detailed in sub-paragraph (a) above, or parts thereof, to be presented in a form other than on printed paper. An acceptable standard of accessibility, usability and reliability must be assured.

OPS 1.140

Information retained on the ground

(a) An operator shall ensure that:

At least for the duration of each flight or series of flights;

(i) Information relevant to the flight and appropriate for the type of operation is preserved on the ground; and

(ii) The information is retained until it has been duplicated at the place at which it will be stored in accordance with OPS 1.1065; or, if this is impracticable,

(iii) The same information is carried in a fireproof container in the aeroplane.

(b) The information referred to in subparagraph (a) above includes:

1. A copy of the operational flight plan where appropriate;

2. Copies of the relevant part(s) of the aeroplane technical log;

3. Route specific NOTAM documentation if specifically edited by the operator;

4. Mass and balance documentation if required (OPS 1.625 refers); and

5. Special loads notification.

OPS 1.145

Power to inspect

An operator shall ensure that any person authorised by the Authority is permitted at any time to board and fly in any aeroplane operated in accordance with an AOC issued by that Authority and to enter and remain on the flight deck provided that the commander may refuse access to the flight deck if, in his opinion, the safety of the aeroplane would thereby be endangered.

OPS 1.150

Production of documentation and records

(a) An operator shall:

1. Give any person authorised by the Authority access to any documents and records which are related to flight operations or maintenance; and

2. Produce all such documents and records, when requested to do so by the Authority, within a reasonable period of time.

(b) The commander shall, within a reasonable time of being requested to do so by a person authorised by an Authority, produce to that person the documentation required to be carried on board.

OPS 1.155

Preservation of documentation

An operator shall ensure that:

1. Any original documentation, or copies thereof, that he is required to preserve is preserved for the required retention period even if he ceases to be the operator of the aeroplane; and

2. Where a crew member, in respect of whom an operator has kept flight duty, duty and rest period records, becomes a crew member for another operator, that record is made available to the new operator.

OPS 1.160

Preservation, production and use of flight recorder recordings

(a) *Preservation of recordings*

1. Following an accident, the operator of an aeroplane on which a flight recorder is carried shall, to the extent possible, preserve the original recorded data pertaining to that accident, as retained by the recorder for a period of 60 days unless otherwise directed by the investigating authority.

2. Unless prior permission has been granted by the Authority, following an incident that is subject to mandatory reporting, the operator of an aeroplane on which a flight recorder is carried shall, to the extent possible, preserve the original recorded data pertaining to that incident, as retained by the recorder for a period of 60 days unless otherwise directed by the investigating authority.

3. Additionally, when the Authority so directs, the operator of an aeroplane on which a flight recorder is carried shall preserve the original recorded data for a period of 60 days unless otherwise directed by the investigating authority.

4. When a flight data recorder is required to be carried aboard an aeroplane, the operator of that aeroplane shall:

(i) Save the recordings for the period of operating time as required by OPS 1.715, 1.720 and 1.725 except that, for the purpose of testing and maintaining flight data recorders, up to one hour of the oldest recorded material at the time of testing may be erased; and

(ii) Keep a document which presents the information necessary to retrieve and convert the stored data into engineering units.

(b) *Production of recordings*

The operator of an aeroplane on which a flight recorder is carried shall, within a reasonable time after being requested to do so by the Authority, produce any recording made by a flight recorder which is available or has been preserved.

(c) *Use of recordings*

1. The cockpit voice recorder recordings may not be used for purposes other than for the investigation of an accident or incident subject to mandatory reporting except with the consent of all crew members concerned.

2. The flight data recorder recordings may not be used for purposes other than for the investigation of an accident or incident subject to mandatory reporting except when such records are:

(i) Used by the operator for airworthiness or maintenance purposes only; or

(ii) De-identified; or

(iii) Disclosed under secure procedures.

OPS 1.165

Leasing

(a) *Terminology*

Terms used in this paragraph have the following meaning:

1. Dry lease — Is when the aeroplane is operated under the AOC of the lessee.

2. Wet lease — Is when the aeroplane is operated under the AOC of the lessor.

(b) *Leasing of aeroplanes between operators*

1. Wet lease-out

An operator providing an aeroplane and complete crew to another operator, and retaining all the functions and responsibilities prescribed in Subpart C, shall remain the operator of the aeroplane.

2. All leases except wet lease-out

(i) Except as provided by subparagraph (b) 1 above, an operator utilising an aeroplane from, or providing it to, another operator, must obtain prior approval for the operation from his respective Authority. Any conditions which are part of this approval must be included in the lease agreement.

(ii) Those elements of lease agreements which are approved by the Authority, other than lease agreements in which an aeroplane and complete crew are involved and no transfer of functions and responsibilities is intended, are all to be regarded, with respect to the leased aeroplane, as variations of the AOC under which the flights will be operated.

(c) *Leasing of aeroplanes between an operator and any entity other than another operator*

1. Dry lease-in

(i) An operator shall not dry lease-in an aeroplane from an entity other than another operator, unless approved by the Authority. Any conditions which are part of this approval must be included in the lease agreement.

(ii) An operator shall ensure that, with regard to aeroplanes that are dry leased-in, any differences from the requirements prescribed in Subparts K, L, and/or from any applicable airworthiness requirements, are notified to and are acceptable to the Authority.

2. Wet lease-in

(i) An operator shall not wet lease-in an aeroplane from an entity other than another operator without the approval of the Authority.

(ii) An operator shall ensure that, with regard to aeroplanes that are wet leased-in:

(A) The safety standards of the lessor with respect to maintenance and operation are equivalent to JARs;

(B) The lessor is an operator holding an AOC issued by a State which is a signatory to the Chicago Convention:

(C) The aeroplane has a standard Certificate of Airworthiness issued in accordance with ICAO Annex 8; and

(D) Any requirement made applicable by the lessee's Authority is complied with.

3. Dry lease-out

An operator may dry lease-out an aeroplane for the purpose of commercial air transportation to any operator of a State which is signatory to the Chicago Convention provided that the following conditions are met:

(A) The Authority has exempted the operator from the relevant provisions of OPS Part 1 and, after the foreign regulatory authority has accepted responsibility in writing for surveillance of the maintenance and operation of the aeroplane(s), has removed the aeroplane from its AOC; and

(B) The aeroplane is maintained according to an approved maintenance programme.

4. Wet lease-out

An operator providing an aeroplane and complete crew to another entity and retaining all the functions and responsibilities prescribed in Subpart C, shall remain the operator of the aeroplane.

SUBPART C

OPERATOR CERTIFICATION AND SUPERVISION

OPS 1.175

General rules for Air Operator Certification

Note 1: Appendix 1 to this paragraph specifies the contents and conditions of the AOC.

Note 2: Appendix 2 to this paragraph specifies the management and organisation requirements.

(a) An operator shall not operate an aeroplane for the purpose of commercial air transportation otherwise than under, and in accordance with, the terms and conditions of an Air Operator Certificate (AOC).

(b) An applicant for an AOC, or variation of an AOC, shall allow the Authority to examine all safety aspects of the proposed operation.

(c) An applicant for an AOC must:

1. Not hold an AOC issued by another Authority unless specifically approved by the Authorities concerned;

2. Have his principal place of business and, if any, his registered office located in the State responsible for issuing the AOC;

3. Satisfy the Authority that he is able to conduct safe operations.

(d) If an operator has aeroplanes registered in different Member States, appropriate arrangements shall be made to ensure that safety oversight is conducted centrally by the Authority issuing the AOC.

(e) An operator shall grant the Authority access to his organisation and aeroplanes and shall ensure that, with respect to maintenance, access is granted to any associated JAR-145 maintenance organisation, to determine continued compliance with OPS.

(f) An AOC will be varied, suspended or revoked if the Authority is no longer satisfied that the operator can maintain safe operations.

(g) The operator must have a management organisation capable of exercising operational control and supervision over any flight operated under the terms of its AOC.

(h) The operator must have nominated an accountable manager acceptable to the Authority who has corporate authority for ensuring that all operations and maintenance activities can be financed and carried out to the standard required by the Authority.

(i) The operator must have nominated post holders, acceptable to the Authority, who are responsible for,

1. Flight operations;

2. The maintenance system;

3. Crew training; and

4. Ground operations.

(j) The operator must ensure that every flight is conducted in accordance with the provisions of the Operations Manual.

(k) The operator must arrange appropriate ground handling facilities to ensure the safe handling of its flights.

(l) The operator must ensure that its aeroplanes are equipped and its crews are qualified, as required for the area and type of operation.

(m) The operator must comply with the maintenance requirements, in accordance with Subpart M, for all aeroplanes operated under the terms of its AOC.

(n) The operator must provide the Authority with a copy of the Operations Manual, as specified in Subpart P and all amendments or revisions to it.

(o) The operator must maintain operational support facilities at the main operating base, appropriate for the area and type of operation.

OPS 1.180

Issue, variation and continued validity of an AOC

(a) An operator will not be granted an AOC, or a variation to an AOC, and that AOC will not remain valid unless:

1. Aeroplanes operated have a standard Certificate of Airworthiness issued in accordance with ICAO Annex 8 by a Member State.

2. The maintenance system has been approved by the Authority in accordance with Subpart M; and

3. He has satisfied the Authority that he has the ability to:

(i) Establish and maintain an adequate organisation;

(ii) Establish and maintain a quality system in accordance with OPS 1.035;

(iii) Comply with required training programmes;

(iv) Comply with maintenance requirements, consistent with the nature and extent of the operations specified, including the relevant items prescribed in OPS 1.175 (g) to (o); and

(v) Comply with OPS 1.175.

(b) Notwithstanding the provisions of OPS 1.185 (f), the operator must notify the Authority as soon as practicable of any changes to the information submitted in accordance with sub-paragraph (a) above.

(c) If the Authority is not satisfied that the requirements of subparagraph (a) above have been met, the Authority may require the conduct of one or more demonstration flights, operated as if they were commercial air transport flights.

OPS 1.185

Administrative requirements

(a) An operator shall ensure that the following information is included in the initial application for an AOC and, when applicable, any variation or renewal applied for:

1. The official name and business name, address and mailing address of the applicant;

2. A description of the proposed operation;

3. A description of the management organisation;

4. The name of the accountable manager;

5. The names of major post holders, including those responsible for flight operations, the maintenance system, crew training and ground operations together with their qualifications and experience; and

6. The Operations Manual.

(b) In respect of the operator's maintenance system only, the following information must be included in the initial application for an AOC and, when applicable, any variation or renewal applied for, and for each aeroplane type to be operated:

1. The maintenance management exposition;

2. The operator's aeroplane maintenance programme(s);

3. The aeroplane technical log;

4. Where appropriate, the technical specification(s) of the maintenance contract(s) between the operator and any JAR-145 approved maintenance organisation;

5. The number of aeroplanes.

(c) The application for an initial issue of an AOC must be submitted at least 90 days before the date of intended operation except that the Operations Manual may be submitted later but not less than 60 days before the date of intended operation.

(d) The application for the variation of an AOC must be submitted at least 30 days, or as otherwise agreed, before the date of intended operation.

(e) The application for the renewal of an AOC must be submitted at least 30 days, or as otherwise agreed, before the end of the existing period of validity.

(f) Other than in exceptional circumstances, the Authority must be given at least 10 days prior notice of a proposed change of a nominated post holder.

Appendix 1 to OPS 1.175

Contents and conditions of the Air Operator Certificate

An AOC specifies the:

(a) Name and location (main place of business) of the operator;

(b) Date of issue and period of validity;

(c) Description of the type of operations authorised;

(d) Type(s) of aeroplane(s) authorised for use;

(e) Registration markings of the authorised aeroplane(s) except that operators may obtain approval for a system to inform the Authority about the registration markings for aeroplanes operated under its AOC;

(f) Authorised areas of operation;

(g) Special limitations; and

(h) Special authorisations/approvals e.g.:

— CAT II/CAT III (including approved minima)

— (MNPS) Minimum Navigation Performance Specifications

— (ETOPS) Extended Range Operation Twin Engined Aeroplanes

— (RNAV) Area Navigation

— (RVSM) Reduced Vertical Seperation Minima

— Transportation of Dangerous Goods.

Appendix 2 to OPS 1.175

The management and organisation of an AOC holder

(a) *General*

1. An operator must have a sound and effective management structure in order to ensure the safe conduct of air operations. Nominated post holders must have proven competency in civil aviation.

2. In the context of this Appendix, "competency" means that an individual has a technical qualification and managerial experience acceptable to the Authority, as appropriate.

(b) *Nominated post holders*

1. A description of the functions and the responsibilities of the nominated post holders, including their names, must be contained in the Operations Manual and the Authority must be given notice in writing of any intended or actual change in appointments or functions.

2. The operator must make arrangements to ensure continuity of supervision in the absence of nominated post holders.

3. The operator must satisfy the Authority that the management organisation is suitable and properly matched to the operating network and scale of operation.

4. A person nominated as a post holder by the holder of an AOC must not be nominated as a post holder by the holder of any other AOC, unless acceptable to the Authority. Nominated post holders must be contracted to work sufficient hours such that the individual can fulfil the management functions associated with the size and scope of the operator's business.

5. More than one of the nominated posts may be filled by one person if acceptable to the Authority.

Note: The requirements relating to the appointment of the nominated post holder responsible for the maintenance system in accordance with OPS 1.175 (i) 2 are prescribed in OPS 1.895.

(c) *Adequacy and supervision of staff*

1. Crew members

The operator must employ sufficient flight and cabin crew for the planned operation, trained and checked in accordance with Subpart N and Subpart O as appropriate.

2. Ground Staff

(i) The number of ground staff is dependent upon the nature and the scale of operations. Operations and ground handling departments, in particular, must be staffed by trained personnel who have a thorough understanding of their responsibilities within the organisation.

(ii) An operator contracting other organisations to provide certain services, retains responsibility for the maintenance of proper standards. In such circumstances, a nominated post holder must be given the task of ensuring that any contractor employed meets the required standards.

3. Supervision

(i) The number of supervisors to be appointed is dependent upon the structure of the operator and the number of staff employed. The duties and responsibilities of these supervisors must be defined, and any flying commitments arranged so that they can discharge their supervisory responsibilities.

(ii) The supervision of all crew members must be exercised by individuals possessing experience and personal qualities sufficient to ensure the attainment of the standards specified in the operations manual.

(d) *Accommodation facilities*

1. An operator must ensure that working space available at each operating base is sufficient for personnel pertaining to the safety of flight operations. Consideration must be given to the needs of ground staff, those concerned with operational control, the storage and display of essential records, and flight planning by crews.

2. Office services must be capable, without delay, of distributing operational instructions and other information to all concerned.

(e) *Documentation*

The operator must make arrangements for the production of manuals, amendments and other documentation.

SUBPART D

OPERATIONAL PROCEDURES

OPS 1.195

Operational Control and Supervision

An operator shall exercise operational control and establish and maintain a method of supervision of flight operations approved by the Authority.

OPS 1.200

Operations manual

An operator shall provide an Operations Manual in accordance with Subpart P for the use and guidance of operations personnel.

OPS 1.205

Competence of operations personnel

An operator shall ensure that all personnel assigned to, or directly involved in, ground and flight operations are properly instructed, have demonstrated their abilities in their particular duties and are aware of their responsibilities and the relationship of such duties to the operation as a whole.

OPS 1.210

Establishment of procedures

(a) An operator shall establish procedures and instructions, for each aeroplane type, containing ground staff and crew members' duties for all types of operation on the ground and in flight.

(b) An operator shall establish a check-list system to be used by crew members for all phases of operation of the aeroplane under normal, abnormal and emergency conditions as applicable, to ensure that the operating procedures in the Operations Manual are followed.

(c) An operator shall not require a crew member to perform any activities during critical phases of the flight other than those required for the safe operation of the aeroplane.

OPS 1.215

Use of Air Traffic Services

An operator shall ensure that Air Traffic Services are used for all flights whenever available.

OPS 1.220

Authorisation of Aerodromes by the Operator

An operator shall only authorise use of aerodromes that are adequate for the type(s) of aeroplane and operation(s) concerned.

OPS 1.225

Aerodrome Operating Minima

(a) An operator shall specify aerodrome operating minima, established in accordance with OPS 1.430 for each departure, destination or alternate aerodrome authorised to be used in accordance with OPS 1.220.

(b) These minima must take into account any increment to the specified values imposed by the Authority.

(c) The minima for a specific type of approach and landing procedure are considered applicable if:

1. The ground equipment shown on the respective chart required for the intended procedure is operative;

2. The aeroplane systems required for the type of approach are operative;

3. The required aeroplane performance criteria are met; and

4. The crew is qualified accordingly.

OPS 1.230

Instrument departure and approach procedures

(a) An operator shall ensure that instrument departure and approach procedures established by the State in which the aerodrome is located are used.

(b) Notwithstanding sub-paragraph (a) above, a commander may accept an ATC clearance to deviate from a published departure or arrival route, provided obstacle clearance criteria are observed and full account is taken of the operating conditions. The final approach must be flown visually or in accordance with the established instrument approach procedure.

(c) Different procedures to those required to be used in accordance with sub-paragraph (a) above may only be implemented by an operator provided they have been approved by the State in which the aerodrome is located, if required, and accepted by the Authority.

OPS 1.235

Noise abatement procedures

(a) An operator shall establish operating procedures for noise abatement during instrument flight operations in compliance with ICAO PANS OPS Volume 1 (Doc 8168-OPS/611).

(b) Take-off climb procedures for noise abatement specified by an operator for any one aeroplane type should be the same for all aerodromes.

OPS 1.240

Routes and areas of operation

(a) An operator shall ensure that operations are only conducted along such routes or within such areas, for which:

1. Ground facilities and services, including meteorological services, are provided which are adequate for the planned operation;

2. The performance of the aeroplane intended to be used is adequate to comply with minimum flight altitude requirements;

3. The equipment of the aeroplane intended to be used meets the minimum requirements for the planned operation;

4. Appropriate maps and charts are available (OPS 1.135 (a) 9 refers);

5. If two-engined aeroplanes are used, adequate aerodromes are available within the time/distance limitations of OPS 1.245.

6. If single-engine aeroplanes are used, surfaces are available which permit a safe forced landing to be executed.

(b) An operator shall ensure that operations are conducted in accordance with any restriction on the routes or the areas of operation, imposed by the Authority.

OPS 1.241

Operation in defined airspace with Reduced Vertical Separation Minima (RVSM)

An operator shall not operate an aeroplane in defined portions of airspace where, based on Regional Air Navigation Agreement, a vertical separation minimum of 300 m (1 000 ft) is applied unless approved to do so by the Authority (RVSM Approval). (See also OPS 1.872).

OPS 1.243

Operation in areas with specific navigation performance requirements

An operator shall not operate an aeroplane in defined areas, or a defined portion of specified airspace, based on Regional Air Navigation Agreements where minimum navigation performance specifications are prescribed unless approved to do so by the Authority (MNPS/RNP/RNAV Approval). See also OPS 1.865 (c) 2 and OPS 1.870).

OPS 1.245

Maximum distance from an adequate aerodrome for two-engined aeroplanes without an ETOPS Approval

(a) Unless specifically approved by the Authority in accordance with OPS 1.246 (a) (ETOPS Approval), an operator shall not operate a two-engined aeroplane over a route which contains a point further from an adequate aerodrome than, in the case of:

1. Performance Class A aeroplanes with either:

(i) A maximum approved passenger seating configuration of 20 or more; or

(ii) A maximum take-off mass of 45,360 kg or more,

the distance flown in 60 minutes at the one-engine-inoperative cruise speed determined in accordance with subparagraph (b) below;

2. Performance Class B or C aeroplanes:

(i) The distance flown in 120 minutes at the one-engine-inoperative cruise speed determined in accordance with subparagraph (b) below; or

(ii) 300 nautical miles,

whichever is less.

(b) An operator shall determine a speed for the calculation of the maximum distance to an adequate aerodrome for each two-engined aeroplane type or variant operated, not exceeding V_{MO}, based upon the true airspeed that the aeroplane can maintain with one-engine-inoperative under the following conditions:

1. International Standard Atmosphere (ISA);

2. Level flight

(i) For turbojet aeroplanes at:

(A) FL 170; or

(B) At the maximum flight level to which the aeroplane, with one engine inoperative, can climb, and maintain, using the gross rate of climb specified in the AFM,

whichever is less.

(ii) For propeller driven aeroplanes at:

(A) FL 80; or

(B) At the maximum flight level to which the aeroplane, with one engine inoperative, can climb, and maintain, using the gross rate of climb specified in the AFM,

whichever is less.

3. Maximum continuous thrust or power on the remaining operating engine;

4. An aeroplane mass not less than that resulting from:

(i) Take-off at sea-level at maximum take-off mass; and

(ii) All engines climb to the optimum long range cruise altitude; and

(iii) All engines cruise at the long range cruise speed at this altitude,

until the time elapsed since take-off is equal to the applicable threshold prescribed in subparagraph (a) above.

(c) An operator must ensure that the following data, specific to each type or variant, is included in the Operations Manual:

1. The one-engine-inoperative cruise speed determined in accordance with subparagraph (b) above; and

2. The maximum distance from an adequate aerodrome determined in accordance with subparagraphs (a) and (b) above.

Note: The speed and altitudes (flight levels) specified above are only intended to be used for establishing the maximum distance from an adequate aerodrome.

OPS 1.246

Extended range operations with two-engined aeroplanes (ETOPS)

(a) An operator shall not conduct operations beyond the threshold distance determined in accordance with OPS 1.245 unless approved to do so by the Authority (ETOPS approval).

(b) Prior to conducting an ETOPS flight, an operator shall be ensure that a suitable ETOPS en-route alternate is available, within either the approved diversion time, or a diversion time based on the MEL generated serviceability status of the aeroplane, whichever is shorter. (See also OPS 1.297 (d)).

OPS 1.250

Establishment of minimum flight altitudes

(a) An operator shall establish minimum flight altitudes and the methods to determine those altitudes for all route segments to be flown which provide the required terrain clearance taking into account the requirements of Subparts F to I.

(b) The method for establishing minimum flight altitudes must be approved by the Authority.

(c) Where minimum flight altitudes established by States overflown are higher than those established by the operator, the higher values shall apply.

(d) An operator shall take into account the following factors when establishing minimum flight altitudes:

1. The accuracy with which the position of the aeroplane can be determined;

2. The probable inaccuracies in the indications of the altimeters used;

3. The characteristics of the terrain (e.g. sudden changes in the elevation) along the routes or in the areas where operations are to be conducted.

4. The probability of encountering unfavourable meteorological conditions (e.g. severe turbulence and descending air currents); and

5. Possible inaccuracies in aeronautical charts.

(e) In fulfilling the requirements prescribed in sub-paragraph (d) above due consideration shall be given to:

1. Corrections for temperature and pressure variations from standard values;

2. The ATC requirements; and

3. Any contingencies along the planned route.

OPS 1.255

Fuel policy

(a) An operator must establish a fuel policy for the purpose of flight planning and in-flight replanning to ensure that every flight carries sufficient fuel for the planned operation and reserves to cover deviations from the planned operation.

(b) An operator shall ensure that the planning of flights is only based upon:

1. Procedures and data contained in or derived from the Operations Manual or current aeroplane specific data; and

2. The operating conditions under which the flight is to be conducted including:

(i) Realistic aeroplane fuel consumption data;

(ii) Anticipated masses;

(iii) Expected meteorological conditions; and

(iv) Air Traffic Services procedures and restrictions.

(c) An operator shall ensure that the pre-flight calculation of usable fuel required for a flight includes:

1. Taxy fuel;

2. Trip fuel;

3. Reserve fuel consisting of:

(i) Contingency fuel;

(ii) Alternate fuel, if a destination alternate is required. (This does not preclude selection of the departure aerodrome as the destination alternate);

(iii) Final reserve fuel; and

(iv) Additional fuel, if required by the type of operation (e.g. ETOPS); and

4. Extra fuel if required by the commander.

(d) An operator shall ensure that in-flight replanning procedures for calculating usable fuel required when a flight has to proceed along a route or to a destination other than originally planned includes:

1. Trip fuel for the remainder of the flight;

2. Reserve fuel consisting of:

(i) Contingency fuel;

(ii) Alternate fuel, if a destination alternate is required (This does not preclude selection of the departure aerodrome as the destination alternate);

(iii) Final reserve fuel; and

(iv) Additional fuel, if required by the type of operation (e.g. ETOPS); and

3. Extra fuel if required by the commander.

OPS 1.260

Carriage of Persons with Reduced Mobility

(a) An operator shall establish procedures for the carriage of Persons with Reduced Mobility (PRMs).

(b) An operator shall ensure that PRMs are not allocated, nor occupy, seats where their presence could:

1. Impede the crew in their duties;

2. Obstruct access to emergency equipment; or

3. Impede the emergency evacuation of the aeroplane.

(c) The commander must be notified when PRMs are to be carried on board.

OPS 1.265

Carriage of inadmissible passengers, deportees or persons in custody

An operator shall establish procedures for the transportation of inadmissible passengers, deportees or persons in custody to ensure the safety of the aeroplane and its occupants. The commander must be notified when the above-mentioned persons are to be carried on board.

OPS 1.270

Stowage of baggage and cargo

(See Appendix 1 to OPS 1.270)

(a) An operator shall establish procedures to ensure that only such hand baggage is carried into an aeroplane and taken into the passenger cabin as can be adequately and securely stowed.

(b) An operator shall establish procedures to ensure that all baggage and cargo on board, which might cause injury or damage, or obstruct aisles and exits if displaced, is placed in stowages designed to prevent movement.

OPS 1.280

Passenger Seating

An operator shall establish procedures to ensure that passengers are seated where, in the event that an emergency evacuation is required, they may best assist and not hinder evacuation from the aeroplane.

OPS 1.285

Passenger briefing

An operator shall ensure that:

(a) *General*

1. Passengers are verbally briefed about safety matters, parts or all of which may be given by an audio-visual presentation.

2. Passengers are provided with a safety briefing card on which picture type instructions indicate the operation of emergency equipment and exits likely to be used by passengers.

(b) *Before take-off*

1. Passengers are briefed on the following items if applicable:

(i) Smoking regulations;

(ii) Back of the seat to be in the upright position and tray table stowed;

(iii) Location of emergency exits;

(iv) Location and use of floor proximity escape path markings;

(v) Stowage of hand baggage;

(vi) Restrictions on the use of portable electronic devices; and

(vii) The location and the contents of the safety briefing card,

and

2. Passengers receive a demonstration of the following:

(i) The use of safety belts and/or safety harnesses, including how to fasten and unfasten the safety belts and/or safety harnesses;

(ii) The location and use of oxygen equipment if required (OPS 1.770 and OPS 1.775 refer). Passengers must also be briefed to extinguish all smoking materials when oxygen is being used; and

(iii) The location and use of life jackets if required (OPS 1.825 refers).

(c) *After take-off*

Passengers are reminded of the following if applicable:

(i) Smoking regulations; and

(ii) Use of safety belts and/or safety harnesses.

(d) *Before landing*

Passengers are reminded of the following if applicable:

(i) Smoking regulations;

(ii) Use of safety belts and/or safety harnesses;

(iii) Back of the seat to be in the upright position and tray table stowed;

(iv) Re-stowage of hand baggage; and

(v) Restrictions on the use of portable electronic devices.

(e) *After landing*

Passengers are reminded of the following:

(i) Smoking regulations; and

(ii) Use of safety belts and/or safety harnesses.

(f) In an emergency during flight, passengers are instructed in such emergency action as may be appropriate to the circumstances.

OPS 1.290

Flight preparation

(a) An operator shall ensure that an operational flight plan is completed for each intended flight.

(b) The commander shall not commence a flight unless he is satisfied that:

1. The aeroplane is airworthy;

2. The aeroplane configuration is in accordance with the Configuration Deviation List (CDL);

3. The instruments and equipment required for the flight to be conducted, in accordance with Subparts K and L, are available;

4. The instruments and equipment are in operable condition except as provided in the MEL;

5. Those parts of the operations manual which are required for the conduct of the flight are available;

6. The documents, additional information and forms required to be available by OPS 1.125 and OPS 1.135 are on board;

7. Current maps, charts and associated documents or equivalent data are available to cover the intended operation of the aeroplane including any diversion which may reasonably be expected;

8. Ground facilities and services required for the planned flight are available and adequate;

9. The provisions specified in the operations manual in respect of fuel, oil and oxygen requirements, minimum safe altitudes, aerodrome operating minima and availability of alternate aerodromes, where required, can be complied with for the planned flight;

10. The load is properly distributed and safely secured;

11. The mass of the aeroplane, at the commencement of take-off roll, will be such that the flight can be conducted in compliance with Subparts F to I as applicable; and

12. Any operational limitation in addition to those covered by sub-paragraphs (9) and (11) above can be complied with.

OPS 1.295

Selection of aerodromes

(a) An operator shall establish procedures for the selection of destination and/or alternate aerodromes in accordance with OPS 1.220 when planning a flight.

(b) An operator must select and specify in the operational flight plan a take-off alternate if it would not be possible to return to the aerodrome of departure for meteorological or performance reasons. The take-off alternate shall be located within:

1. For two-engined aeroplanes, either:

(i) One hour flight time at a one-engine-inoperative cruising speed according to the AFM in still air standard conditions based on the actual take-off mass; or

(ii) Two hours or the approved ETOPS diversion time, whichever is less, at the one-engine-inoperative cruising speed according to the AFM in still air standard conditions for aeroplanes and crews authorised for ETOPS; or

2. Two hours flight time at a one-engine-inoperative cruising speed according to the AFM in still air standard conditions based on the actual take-off mass for three and four-engined aeroplanes; and

3. If the AFM does not contain a one-engine-inoperative cruising speed, the speed to be used for calculation must be that which is achieved with the remaining engine(s) set at maximum continuous power.

(c) An operator must select at least one destination alternate for each IFR flight unless:

1. 1. Both:

(i) The duration of the planned flight from take-off to landing does not exceed 6 hours; and

(ii) Two separate runways are available at the destination and the meteorological conditions prevailing are such that, for the period from one hour before until one hour after the expected time of arrival at destination, the approach from the relevant minimum sector altitude and the landing can be made in VMC

or

2. The destination is isolated and no adequate destination alternate exists.

(d) An operator must select two destination alternates when the appropriate weather reports or forecasts for the destination, or any combination thereof, indicate that:

1. During a period commencing 1 hour before and ending 1 hour after the estimated time of arrival the weather conditions will be below the applicable planning minima; or

2. When no meteorological information is available.

(e) An operator shall specify any required alternate(s) in the operational flight plan.

OPS 1.297

Planning minima for IFR flights

(a) *Planning minima for take-off alternates*

An operator shall not select an aerodrome as a take-off alternate aerodrome unless the appropriate weather reports or forecasts or any combination thereof indicate that, during a period commencing 1 hour before and ending 1 hour after the estimated time of arrival at the aerodrome, the weather conditions will be at or above the applicable landing minima specified in accordance with OPS 1.225. The ceiling must be taken into account when the only approaches available are non-precision and/or circling approaches. Any limitation related to one engine inoperative operations must be taken into account.

(b) *Planning minima for destination and destination alternate aerodromes*

An operator shall only select the destination aerodrome and/or destination alternate aerodrome(s) when the appropriate weather reports or forecasts, or any combination thereof, indicate that, during a period commencing 1 hour before and ending 1 hour after the estimated time of arrival at the aerodrome, the weather conditions will be at or above the applicable planning minima as follows:

1. Planning minima for a destination aerodrome:

(i) RVR/visibility specified in accordance with OPS 1.225; and

(ii) For a non-precision approach or a circling approach, the ceiling at or above MDH; and

2. Planning minima for destination alternate aerodrome(s):

Table 1

Planning minima En-route and destination alternates

Type of approach	Planning Minima
Cat II and III	Cat I (Note 1)
Cat I	Non-precision (Note 1 & 2)
Non precision	Non precision (Notes 1 & 2) plus 200 ft/1 000 m
Circling	Circling

Note 1: RVR.

Note 2: The ceiling must be at or above the MDH.

(c) *Planning minima for an en-route alternate aerodrome*

An operator shall not select an aerodrome as an en-route alternate aerodrome unless the appropriate weather reports or forecasts, or any combination thereof, indicate that, during a period commencing 1 hour before and ending 1 hour after the expected time of arrival at the aerodrome, the weather conditions will be at or above the planning minima in accordance with Table 1 above.

(d) *Planning minima for an ETOPS en-route alternate*

An operator shall not select an aerodrome as an ETOPS en-route alternate aerodrome unless the appropriate weather reports or forecasts, or any combination thereof, indicate that, during a period commencing 1 hour before and ending 1 hour after the expected time of arrival at the aerodrome, the weather conditions will be at or above the planning minima prescribed in Table 2 below, and in accordance with the operator's ETOPS approval.

Table 2

Planning minima — ETOPS

Type of Aproach	Planning Minima	
(RVR/visibility required & ceiling if applicable)		
	Aerodrome with	
	at least 2 separate approach procedures based on 2 separate aids serving 2 separate runways (see IEM OPS 1.295 cc) (i) (ii))	at least 2 separate approach procedures based on 2 separate aids serving 1 runway or, at least 1 approach procedure based on 1 aid serving 1 runway
Precision approach Cat II, III (ILS, MLS)	Precision approach Cat I Minima	Non-Precision Approach Minima
Precision approach Cat I (ILS, MLS)	Non-Precision approach Minima	Circling Minima or if not available, non-precision approach minima plus 200 ft/1 000 m
Non-precision Approach	The lower of non-precision approach minima plus 200 ft/1 000 m or circling minima	The higher of circling minima or non-precision approach minima plus 200 ft/1 000 m
Circling Approach	Circling minima	

OPS 1.300

Submission of ATS Flight Plan

An operator shall ensure that a flight is not commenced unless an ATS flight plan has been submitted, or adequate information has been deposited in order to permit alerting services to be activated if required.

OPS 1.305

Re/defuelling with passengers embarking, on board or disembarking

(See Appendix 1 to OPS 1.305)

An operator shall ensure that no aeroplane is re/defuelled with Avgas or wide cut type fuel (eg. Jet-B or equivalent) or when a mixture of these types of fuel might occur, when passengers are embarking, on board or disembarking. In all other cases necessary precautions must be taken and the aeroplane must be properly manned by qualified personnel ready to initiate and direct an evacuation of the aeroplane by the most practical and expeditious means available.

OPS 1.307

Refuelling/Defuelling with wide-cut fuel

An operator shall establish procedures for refuelling/defuelling with wide-cut fuel (eg. Jet B or equivalent) if this is required.

OPS 1.310

Crew Members at stations

(a) *Flight crew members*

1. During take-off and landing each flight crew member required to be on flight deck duty shall be at his station.

2. During all other phases of flight each flight crew member required to be on flight deck duty shall remain at his station unless his absence is necessary for the performance of his duties in connection with the operation, or for physiological needs provided at least one suitably qualified pilot remains at the controls of the aeroplane at all times.

(b) *Cabin crew members*

On all the decks of the aeroplane that are occupied by passengers, required cabin crew members shall be seated at their assigned stations during take-off and landing, and whenever deemed necessary by the commander in the interest of safety.

OPS 1.315

Assisting means for emergency evacuation

An operator shall establish procedures to ensure that before taxying, take-off and landing, and when safe and practicable to do so, an assisting means for emergency evacuation that deploys automatically, is armed.

OPS 1.320

Seats, safety belts and harnesses

(a) *Crew members*

1. During take-off and landing, and whenever deemed necessary by the commander in the interest of safety, each crew member shall be properly secured by all safety belts and harnesses provided.

2. During other phases of the flight each flight crew member on the flight deck shall keep his safety belt fastened while at his station.

(b) *Passengers*

1. Before take-off and landing, and during taxying, and whenever deemed necessary in the interest of safety, the commander shall ensure that each passenger on board occupies a seat or berth with his safety belt, or harness where provided, properly secured.

2. An operator shall make provision for, and the commander shall ensure that multiple occupancy of aeroplane seats may only be allowed on specified seats and does not occur other than by one adult and one infant who is properly secured by a supplementary loop belt or other restraint device.

OPS 1.325

Securing of passenger cabin and galley(s)

(a) An operator shall establish procedures to ensure that before taxying, take-off and landing all exits and escape paths are unobstructed.

(b) The commander shall ensure that before take-off and landing, and whenever deemed necessary in the interest of safety, all equipment and baggage is properly secured.

OPS 1.330

Accessibility of emergency equipment

The commander shall ensure that relevant emergency equipment remains easily accessible for immediate use.

OPS 1.335

Smoking on board

The commander shall ensure that no person on board is allowed to smoke:

1. Whenever deemed necessary in the interest of safety;

2. While the aeroplane is on the ground unless specifically permitted in accordance with procedures defined in the Operations Manual;

3. Outside designated smoking areas, in the aisle(s) and in the toilet(s);

4. In cargo compartments and/or other areas where cargo is carried which is not stored in flame resistant containers or covered by flame resistant canvas; and

5. In those areas of the cabin where oxygen is being supplied.

OPS 1.340

Meteorological Conditions

(a) On an IFR flight a commander shall not:

1. Commence take-off; nor

2. Continue beyond the point from which a revised flight plan applies in the event of in-flight replanning,

unless information is available indicating that the expected weather conditions at the destination and/or required alternate aerodrome(s) prescribed in OPS 1.295 are at or above the planning minima, prescribed in OPS 1.297.

(b) On an IFR flight a commander shall not continue beyond:

1. The decision point when using the decision point procedure; or

2. The pre-determined point when using the pre-determined point procedure,

unless information is available indicating that the expected weather conditions at the destination and/or required alternate aerodrome(s) prescribed in OPS 1.295 are at or above the applicable aerodrome operating minima prescribed in OPS 1.225.

(c) On an IFR flight, a commander shall not continue towards the planned destination aerodrome unless the latest information available indicates that, at the expected time of arrival, the weather conditions at the destination, or at least one destination alternate aerodrome, are at or above the planning applicable aerodrome operating minima.

(d) On a VFR flight a commander shall not commence take-off unless current meteorological reports or a combination of current reports and forecasts indicate that the meteorological conditions along the route or that part of the route to be flown under VFR will, at the appropriate time, be such as to render compliance with these rules possible.

OPS 1.345

Ice and other contaminants

(a) An operator shall establish procedures to be followed when ground de-icing and anti-icing and related inspections of the aeroplane(s) are necessary.

(b) A commander shall not commence take-off unless the external surfaces are clear of any deposit which might adversely affect the performance and/or controllability of the aeroplane except as permitted in the Aeroplane Flight Manual.

(c) A commander shall not commence a flight under known or expected icing conditions unless the aeroplane is certificated and equipped to cope with such conditions.

OPS 1.350

Fuel and oil supply

A commander shall not commence a flight unless he is satisfied that the aeroplane carries at least the planned amount of fuel and oil to complete the flight safely, taking into account the expected operating conditions.

OPS 1.355

Take-off conditions

Before commencing take-off, a commander must satisfy himself that, according to the information available to him, the weather at the aerodrome and the condition of the runway intended to be used should not prevent a safe take-off and departure.

OPS 1.360

Application of take-off minima

Before commencing take-off, a commander must satisfy himself that the RVR or visibility in the take-off direction of the aeroplane is equal to or better than the applicable minimum.

OPS 1.365

Minimum flight altitudes

The commander or the pilot to whom conduct of the flight has been delegated shall not fly below specified minimum altitudes except when necessary for take-off or landing.

OPS 1.370

Simulated abnormal situations in flight

An operator shall establish procedures to ensure that abnormal or emergency situations requiring the application of part or all of abnormal or emergency procedures and simulation of IMC by artificial means, are not simulated during commercial air transportation flights.

OPS 1.375

In-flight fuel management

(See Appendix 1 to OPS 1.375)

(a) An operator shall establish a procedure to ensure that in-flight fuel checks and fuel management are carried out.

(b) A commander shall ensure that the amount of usable fuel remaining in flight is not less than the fuel required to proceed to an aerodrome where a safe landing can be made, with final reserve fuel remaining.

(c) The commander shall declare an emergency when the actual usable fuel on board is less than final reserve fuel.

OPS 1.385

Use of supplemental oxygen

A commander shall ensure that flight crew members engaged in performing duties essential to the safe operation of an aeroplane in flight use supplemental oxygen continuously whenever cabin altitude exceeds 10 000 ft for a period in excess of 30 minutes and whenever the cabin altitude exceeds 13 000 ft.

OPS 1.390

Cosmic radiation

(a) *Active monitoring*

1. An operator shall not operate an aeroplane above 15 000 m (49 000 ft) unless the equipment specified in OPS 1.680 is serviceable. and

2. The commander or the pilot to whom conduct of the flight has been delegated shall initiate a descent as soon as practicable when the limit values specified in the Operations Manual are exceeded.

(b) *Passive monitoring*

An operator shall take account of the in-flight exposure to cosmic radiation of their flight crew and cabin crew and shall take the following measures for those crew liable to be subject to exposure of more than 1 mSv per year:

1. assess their exposure;

2. arrange their working schedules, where practicable, to keep exposure below 6 mSv per year;

3. inform them of the health risk associated with the likely exposure;

4. ensure that the working schedules for female crew, once they have notified the operator that they are pregnant, keep the equivalent dose to the foetus as low as can reasonably be achieved and in any case ensure that the dose does not exceed 1 mSv for the remainder of the pregnancy;

5. ensure that where exposure is considered likely to exceed 6 mSv per year, records are kept for each flight or cabin crew member affected, and that appropriate medical surveillance is applied.

OPS 1.395

Ground proximity detection

When undue proximity to the ground is detected by any flight crew member or by a ground proximity warning system, the commander or the pilot to whom conduct of then flight has been delegated shall ensure that corrective action is initiated immediately to establish safe flight conditions.

OPS 1.400

Approach and landing conditions

Before commencing an approach to land, the commander must satisfy himself that, according to the information available to him, the weather at the aerodrome and the condition of the runway intended to be used should not prevent a safe approach, landing or missed approach, having regard to the performance information contained in the Operations Manual.

OPS 1.405

Commencement and continuation of approach

(a) The commander or the pilot to whom conduct of the flight has been delegated may commence an instrument approach regardless of the reported RVR/Visibility but the approach shall not be continued beyond the outer marker, or equivalent position, if the reported RVR/visibility is less than the applicable minima.

(b) Where RVR is not available, the pilot-in-command may derive an RVR value by converting the reported visibility in accordance with Appendix 1 to OPS 1.430, sub-paragraph (h).

(c) If, after passing the outer marker or equivalent position in accordance with (a) above, the reported RVR/visibility falls below the applicable minimum, the pilot-in-command may continue the approach to DA/H or MDA/H.

(d) Where no outer marker or equivalent position exists, the pilot-in-command shall make the decision to continue or abandon the approach before descending below 1 000 ft above the aerodrome on the final approach segment.

(e) A pilot may continue the approach below DA/H or MDA/H and the landing may be completed provided that the required visual reference is established at the DA/H or MDA/H and is maintained.

OPS 1.410

Operating procedures Threshold crossing height

An operator must establish operational procedures designed to ensure that an aeroplane being used to conduct precision approaches crosses the threshold by a safe margin, with the aeroplane in the landing configuration and attitude.

OPS 1.415

Journey log

A commander shall ensure that the Journey log is completed.

OPS 1.420

Occurrence reporting

(a) *Flight Incidents*

1. The operator or commander of an aeroplane shall submit a report to the Authority of any incident that has endangered or may have endangered safe operation of a flight.

2. Reports shall be despatched within 72 hours of the event, unless exceptional circumstances prevent this.

(b) *Technical defects and exceedance of technical limitations.*

A commander shall ensure that all technical defects and exceedances of technical limitations occurring while he was responsible for the flight are recorded in the aeroplane's Technical Log.

(c) *Air Traffic Incidents.*

A commander shall submit an air traffic incident report in accordance with ICAO PANS RAC whenever an aeroplane in flight has been endangered by:

1. A near collision with any other flying device; or

2. Faulty air traffic procedures or lack of compliance with applicable procedures by Air Traffic Services or by the flight crew; or

3. A failure of ATS facilities.

(d) *Bird Hazards and Strikes*

1. A commander shall immediately inform the appropriate ground station whenever a potential bird hazard is observed.

2. A commander shall submit a written bird strike report after landing whenever an aeroplane for which he is responsible suffers a bird strike.

(e) *In-flight emergencies with Dangerous Goods on board.*

If an in-flight emergency occurs and the situation permits, a commander shall inform the appropriate Air Traffic Services unit of any Dangerous Goods on board.

(f) *Unlawful interference*

Following an act of unlawful interference on board an aeroplane, a commander shall submit a report, as soon as practicable, to the local Authority and/or the Authority.

(g) *Irregularities of ground and navigational facilities and hazardous conditions.*

A commander shall notify the appropriate ground station as soon as practicable whenever a potentially hazardous condition such as:

1. An irregularity in a ground or navigational facility; or

2. A meteorological phenomenon; or

3. A volcanic ash cloud; or

4. A high radiation level,

is encountered during flight.

OPS 1.425

Accident reporting

(a) An operator shall establish procedures to ensure that the nearest appropriate authority is notified by the quickest available means of any accident, involving the aeroplane, resulting in serious injury (as defined in ICAO Annex 13) or death of any person or substantial damage to the aeroplane or property.

(b) A commander shall submit a report to the Authority of any accident on board, resulting in serious injury to, or death of, any person on board while he was responsible for the flight.

Appendix 1 to OPS 1.270

Stowage of baggage and cargo

Procedures established by an operator to ensure that hand baggage and cargo is adequately and securely stowed must take account of the following:

1. Each item carried in a cabin must be stowed only in a location that is capable of restraining it;

2. Mass limitations placarded on or adjacent to stowages must not be exceeded;

3. Underseat stowages must not be used unless the seat is equipped with a restraint bar and the baggage is of such size that it may adequately be restrained by this equipment;

4. Items must not be stowed in toilets or against bulkheads that are incapable of restraining articles against movement forwards, sideways or upwards and unless the bulkheads carry a placard specifying the greatest mass that may be placed there;

5. Baggage and cargo placed in lockers must not be of such size that they prevent latched doors from being closed securely;

6. Baggage and cargo must not be placed where it can impede access to emergency equipment; and

7. Checks must be made before take- off, before landing, and whenever the pilot-in-command illuminates the fasten seat belts signs (or otherwise so orders) to ensure that baggage is stowed where it cannot impede evacuation from the aircraft or cause injury by falling (or other movement) as may be appropriate to the phase of flight.

Appendix 1 to OPS 1.305

Re/defuelling with passengers embarking, on board or disembarking

An operator must establish operational procedures for re/defuelling with passengers embarking, on board or disembarking to ensure the following precautions are taken:

1. One qualified person must remain at a specified location during fuelling operations with passengers on board. This qualified person must be capable of handling emergency procedures concerning fire protection and fire-fighting, handling communications and initiating and directing an evacuation;

2. Crew, staff and passengers must be warned that re/defuelling will take place;

3. "Fasten Seat Belts" signs must be off;

4. "No smoking" signs must be on, together with interior lighting to enable emergency exits to be identified;

5. Passengers must be instructed to unfasten their seat belts and refrain from smoking;

6. Sufficient qualified personnel must be on board and be prepared for an immediate emergency evacuation;

7. If the presence of fuel vapour is detected inside the aeroplane, or any other hazard arises during re/defuelling, fuelling must be stopped immediately;

8. The ground area beneath the exits intended for emergency evacuation and slide deployment areas must be kept clear; and

9. Provision is made for a safe and rapid evacuation.

Appendix 1 to OPS 1.375

In-flight fuel management

(a) *In-flight fuel checks*

1. A commander must ensure that fuel checks are carried out in flight at regular intervals. The remaining fuel must be recorded and evaluated to:

(i) Compare actual consumption with planned consumption;

(ii) Check that the remaining fuel is sufficient to complete the flight; and

(iii) Determine the expected fuel remaining on arrival at the destination.

2. The relevant fuel data must be recorded.

(b) *In-flight fuel management*.

If, as a result of an in-flight fuel check, the expected fuel remaining on arrival at the destination is less than the required alternate fuel plus final reserve fuel, the commander must take into account the traffic and the operational conditions prevailing at the destination aerodrome, along the diversion route to an alternate aerodrome and at the destination alternate aerodrome, when deciding to proceed to the destination aerodrome or to divert, so as to land with not less than final reserve fuel.

(c) If, as a result of an in-flight fuel check on a flight to an isolated destination aerodrome, the expected fuel remaining at the point of last possible diversion is less than the sum of:

1. Fuel to divert to an en-route alternate aerodrome selected in accordance with OPS 1.297 (c);

2. Contingency fuel; and

3. Final reserve fuel,

the commander must either:

(i) Divert; or

(ii) Proceed to the destination, provided that two separate runways are available at the destination and the expected weather conditions at the destination comply with those specified for planning in OPS 1.297 (b)(1).

SUBPART E

ALL WEATHER OPERATIONS

OPS 1.430

Aerodrome Operating Minima General

(See Appendix 1 to OPS 1.430)

(a) An operator shall establish, for each aerodrome planned to be used, aerodrome operating minima that are not lower than the values given in Appendix 1. The method of determination of such minima must be acceptable to the Authority. Such minima shall not be lower than any that may be established for such aerodromes by the State in which the aerodrome is located, except when specifically approved by that State.

Note: The above paragraph does not prohibit in-flight calculation of minima for a non planned alternate aerodrome if carried out in accordance with an accepted method.

(b) In establishing the aerodrome operating minima which will apply to any particular operation, an operator must take full account of:

1. The type, performance and handling characteristics of the aeroplane;

2. The composition of the flight crew, their competence and experience;

3. The dimensions and characteristics of the runways which may be selected for use;

4. The adequacy and performance of the available visual and non-visual ground aids

5. The equipment available on the aeroplane for the purpose of navigation and/or control of the flight path, as appropriate, during the take-off, the approach, the flare, the landing, roll-out and the missed approach;

6. The obstacles in the approach, missed approach and the climb-out areas required for the execution of contingency procedures and necessary clearance;

7. The obstacle clearance altitude/height for the instrument approach procedures; and

8. The means to determine and report meteorological conditions.

(c) The aeroplane categories referred to in this Subpart must be derived in accordance with the method given in Appendix 2 to OPS 1.430 (c).

OPS 1.435

Terminology

Terms used in this Subpart and not defined in JAR1 have the following meaning:

1. Circling: The visual phase of an instrument approach to bring an aircraft into position for landing on a runway which is not suitably located for a straight-in approach.

2. Low Visibility Procedures (LVP): Procedures applied at an aerodrome for the purpose of ensuring safe operations during Category II and III approaches and Low Visibility Take-offs.

3. Low Visibility Take-Off (LVTO): A take-off where the Runway Visual Range(RVR) is less than 400 m.

4. Flight control system: A system which includes an automatic landing system and/or a hybrid landing system.

5. Fail-Passive flight control system: A flight control system is fail-passive if, in the event of a failure, there is no significant out-of-trim condition or deviation of flight path or attitude but the landing is not completed automatically. For a fail-passive automatic flight control system the pilot assumes control of the aeroplane after a failure.

6. Fail-Operational flight control system: A flight control system is fail-operational if, in the event of a failure below alert height, the approach, flare and landing, can be completed automatically. In the event of a failure, the automatic landing system will operate as a fail-passive system.

7. Fail-operational hybrid landing system: A system which consists of a primary fail-passive automatic landing system and a secondary independent guidance system enabling the pilot to complete a landing manually after failure of the primary system.

Note: A typical secondary independent guidance system consists of a monitored head-up display providing guidance which normally takes the form of command information but it may alternatively be situation (or deviation) information.

8. Visual approach: An approach when either part or all of an instrument approach procedure is not completed and the approach is executed with visual reference to the terrain.

OPS 1.440

Low visibility operations General operating rules

(See Appendix 1 to OPS 1.440)

(a) An operator shall not conduct Category II or III operations unless:

1. Each aeroplane concerned is certificated for operations with decision heights below 200 ft, or no decision height, and equipped in accordance with JAR-AWO or an equivalent accepted by the Authority;

2. A suitable system for recording approach and/or automatic landing success and failure is established and maintained to monitor the overall safety of the operation;

3. The operations are approved by the Authority;

4. The flight crew consists of at least 2 pilots; and

5. Decision Height is determined by means of a radio altimeter.

(b) An operator shall not conduct low visibility take-offs in less than 150 m RVR (Category A, B and C aeroplanes) or 200 m RVR (Category D aeroplanes) unless approved by the Authority.

OPS 1.445

Low visibility operations Aerodrome considerations

(a) An operator shall not use an aerodrome for Category II or III operations unless the aerodrome is approved for such operations by the State in which the aerodrome is located.

(b) An operator shall verify that Low Visibility Procedures (LVP) have been established, and will be enforced, at those aerodromes where low visibility operations are to be conducted.

OPS 1.450

Low visibility operations Training and Qualifications

(See Appendix 1 to OPS 1.450)

An operator shall ensure that, prior to conducting Low Visibility Take-Off, Category II and III operations:

1. Each flight crew member:

(i) Completes the training and checking requirements prescribed in Appendix 1 including simulator training in operating to the limiting values of RVR and Decision Height appropriate to the operator's Category II/III approval; and

(ii) Is qualified in accordance with Appendix 1;

2. The training and checking is conducted in accordance with a detailed syllabus approved by the Authority and included in the Operations Manual. This training is in addition to that prescribed in Subpart N; and

3. The flight crew qualification is specific to the operation and the aeroplane type.

OPS 1.455

Low visibility operations Operating Procedures

(See Appendix 1 to OPS 1.455)

(a) An operator must establish procedures and instructions to be used for Low Visibility Take-Off and Category II and III operations. These procedures must be included in the Operations Manual and contain the duties of flight crew members during taxying, take-off, approach, flare, landing, roll-out and missed approach as appropriate.

(b) The commander shall satisfy himself that:

1. The status of the visual and non-visual facilities is sufficient prior to commencing a Low Visibility Take-Off or a Category II or III approach;

2. Appropriate LVPs are in force according to information received from Air Traffic Services, before commencing a Low Visibility Take-off or a Category II or III approach; and

3. The flight crew members are properly qualified prior to commencing a Low Visibility Take-off in an RVR of less than 150 m (Category A, B and C aeroplanes) or 200 m (Cat D aeroplanes) or a Category II or III approach.

OPS 1.460

Low visibility operations — Minimum equipment

(a) An operator must include in the Operations Manual the minimum equipment that has to be serviceable at the commencement of a Low Visibility Take-off or a Category II or III approach in accordance with the AFM or other approved document.

(b) The commander shall satisfy himself that the status of the aeroplane and of the relevant airborne systems is appropriate for the specific operation to be conducted.

OPS 1.465

VFR Operating minima

(See Appendix 1 to OPS 1.465)

An operator shall ensure that:

1. VFR flights are conducted in accordance with the Visual Flight Rules and in accordance with the Table in Appendix 1 to OPS 1.465.

2. Special VFR flights are not commenced when the visibility is less than 3 km and not otherwise conducted when the visibility is less than 1,5 km.

Appendix 1 to OPS 1.430

Aerodrome Operating Minima

(a) *Take-off Minima*

1. General

(i) Take-off minima established by the operator must be expressed as visibility or RVR limits, taking into account all relevant factors for each aerodrome planned to be used and the aeroplane characteristics. Where there is a specific need to see and avoid obstacles on departure and/or for a forced landing, additional conditions (e.g. ceiling) must be specified.

(ii) The commander shall not commence take-off unless the weather conditions at the aerodrome of departure are equal to or better than applicable minima for landing at that aerodrome unless a suitable take-off alternate aerodrome is available.

(iii) When the reported meteorological visibility is below that required for take-off and RVR is not reported, a take-off may only be commenced if the commander can determine that the RVR/visibility along the take-off runway is equal to or better than the required minimum.

(iv) When no reported meteorological visibility or RVR is available, a take-off may only be commenced if the commander can determine that the RVR/visibility along the take-off runway is equal to or better than the required minimum.

2. Visual reference:

The take-off minima must be selected to ensure sufficient guidance to control the aeroplane in the event of both a discontinued take-off in adverse circumstances and a continued take-off after failure of the critical power unit.

3. Required RVR/Visibility

(i) For multi-engined aeroplanes, whose performance is such that, in the event of a critical power unit failure at any point during take-off, the aeroplane can either stop or continue the take-off to a height of 1 500 ft above the aerodrome while clearing obstacles by the required margins, the take-off minima established by an operator must be expressed as RVR/Visibility values not lower than those given in Table 1 below except as provided in paragraph (4) below:

Table 1

RVR/Visibility for take-off

Take-off RVR/Visibility	
Facilities	RVR/Visibility (Note 3)
Nil (Day only)	500 m
Runway edge lighting and/or centreline marking	250/300 m (Notes 1 & 2)
Runway edge and centerline lighting	200/250 m (Note 1)
Runway edge and centerline lighting and multiple RVR information	150/200 m (Notes 1 & 4)

Note 1: The higher values apply to Category D aeroplanes.

Note 2: For night operations at least runway edge and runway end lights are required.

Note 3: The reported RVR/Visibility value representative of the initial part of the take-off run can be replaced by pilot assessment.

Note 4: The required RVR value must be achieved for all of the relevant RVR reporting points with the exception given in Note 3 above.

(ii) For multi-engined aeroplanes whose performance is such that they cannot comply with the performance conditions in sub-paragraph (a) 3 (i) above in the event of a critical power unit failure, there may be a need to re-land immediately and to see and avoid obstacles in the take-off area. Such aeroplanes may be operated to the following take-off minima provided they are able to comply with the applicable obstacle clearance criteria, assuming engine failure at the height specified. The take-off minima established by an operator must be based upon the height from which the one engine inoperative net take-off flight path can be constructed. The RVR minima used may not be lower than either of the values given in Table 1 above or Table 2 below.

Table 2

Assumed engine failure height above the runway versus RVR/Visibility

Take-off RVR/Visibility — flight path	
Assumed engine failure height above the take-off runway	RVR/Visibility (Note 2)
< 50 ft	200 m
51-100 ft	300 m
101-150 ft	400 m
151-200 ft	500 m
201-300 ft	1 000 m
> 300 ft	1 500 m (Note 1)

Note 1: 1 500 m is also applicable if no positive take-off flight path can be constructed.

Note 2: For night operations at least runway edge and runway end lights are required.

(iii) When reported RVR, or meteorological visibility is not available, the commander shall not commence take-off unless he can determine that the actual conditions satisfy the applicable take-off minima.

4. Exceptions to paragraph (a) 3 (i) above:

(i) Subject to the approval of the Authority, and provided the requirements in paragraphs (A) to (E) below have been satisfied, an operator may reduce the take-off minima to 125 m RVR (Category A, B and C aeroplanes) or 150 m RVR (Category D aeroplanes) when:

(A) Low Visibility Procedures are in force;

(B) High intensity runway centreline lights spaced 15 m or less and high intensity edge lights spaced 60 m or less are in operation;

(C) Flight crew members have satisfactorily completed training in a simulator approved for this procedure;

(D) A 90 m visual segment is available from the cockpit at the start of the take-off run; and

(E) The required RVR value has been achieved for all of the relevant RVR reporting points.

(ii) Subject to the approval of the Authority, an operator of an aeroplane using an approved lateral guidance system for take-off may reduce the take-off minima to an RVR less than 125 m (Category A, B and C aeroplanes) or 150 m (Category D aeroplanes) but not lower than 75 m provided runway protection and facilities equivalent to Category III landing operations are available.

(b) *Non-Precision approach*

1. System minima

An operator must ensure that system minima for non-precision approach procedures, which are based upon the use of ILS without glidepath (LLZ only), VOR, NDB, SRA and VDF are not lower than the MDH values given in Table 3 below.

Table 3

System minima for non-precision approach aids

System minima	
Facility	Lowest MDH
ILS (no glide path — LLZ)	250 ft
SRA (terminating at ½ NM)	250 ft
SRA (terminating at 1 NM)	300 ft
SRA (terminating at 2 NM)	350 ft
VOR	300 ft
VOR/DME	250 ft
NDB	300 ft
VDF (QDM & QGH)	300 ft

2. Minimum Descent Height

An operator must ensure that the minimum descent height for a non-precision approach is not lower than either:

(i) The OCH/OCL for the category of aeroplane; or

(ii) The system minimum.

3. Visual Reference

A pilot may not continue an approach below MDA/MDH unless at least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot:

(i) Elements of the approach light system;

(ii) The threshold;

(iii) The threshold markings;

(iv) The threshold lights;

(v) The threshold identification lights;

(vi) The visual glide slope indicator;

(vii) The touchdown zone or touchdown zone markings;

(viii) The touchdown zone lights;

(ix) Runway edge lights; or

(x) Other visual references accepted by the Authority.

4. Required RVR

The lowest minima to be used by an operator for non-precision approaches are:

Table 4a

RVR for non-precision approach — full facilities

Non-precision approach minima Full facilities (Notes 1, 5, 6 and 7)				
MDH	RVR/Aeroplane Category			
	A	B	C	D
250-299 ft	800 m	800 m	800 m	1 200 m
300-449 ft	900 m	1 000 m	1 000 m	1 400 m
450-649 ft	1 000 m	1 200 m	1 200 m	1 600 m
650 ft and above	1 200 m	1 400 m	1 400 m	1 800 m

Table 4b

RVR for non-precision approach — intermediate facilities

Non-precision approach minima Intermediate facilities (Notes 2, 5, 6 and 7)				
MDH	RVR/Aeroplane Category			
	A	B	C	D
250-299 ft	1 000 m	1 100 m	1 200 m	1 400 m
300-449 ft	1 200 m	1 300 m	1 400 m	1 600 m
450-649 ft	1 400 m	1 500 m	1 600 m	1 800 m
650 ft and above	1 500 m	1 500 m	1 800 m	2 000 m

Table 4c

RVR for non-precision approach — basic facilities

Non-precision approach minima Basic facilities (Notes 3, 5, 6 and 7)				
MDH	RVR/Aeroplane Category			
	A	B	C	D
250-299 ft	1 200 m	1 300 m	1 400 m	1 600 m
300-449 ft	1 300 m	1 400 m	1 600 m	1 800 m
450-649 ft	1 500 m	1 500 m	1 800 m	2 000 m
650 ft and above	1 500 m	1 500 m	2 000 m	2 000 m

Table 4d

RVR for non-precision approach — Nil approach light facilities

Non-precision approach minima Nil approach light facilities (Notes 4, 5, 6 and 7)				
MDH	RVR/Aeroplane Category			
	A	B	C	D
250-299 ft	1 000 m	1 500 m	1 600 m	1 800 m
300-449 ft	1 500 m	1 500 m	1 800 m	2 000 m
450-649 ft	1 500 m	1 500 m	2 000 m	2 000 m
650 ft and above	1 500 m	1 500 m	2 000 m	2 000 m

Note 1: Full facilities comprise runway markings, 720 m or more of HI/MI approach lights, runway edge lights, threshold lights and runway end lights. Lights must be on.

Note 2: Intermediate facilities comprise runway markings, 420-719 m of HI/MI approach lights, runway edge lights, threshold lights and runway end lights. Lights must be on.

Note 3: Basic facilities comprise runway markings, < 420 m of HI/MI approach lights, any length of LI approach lights, runway edge lights, threshold lights and runway end lights. Lights must be on.

Note 4: Nil approach light facilities comprise runway markings, runway edge lights, threshold lights, runway end lights or no lights at all.

Note 5: The tables are only applicable to conventional approaches with a nominal descent slope of not greater than 4_i. Greater descent slopes will usually require that visual glide slope guidance (e.g. PAPI) is also visible at the Minimum Descent Height.

Note 6: The above figures are either reported RVR or meteorological visibility converted to RVR as in sub-paragraph (h) below.

Note 7: The MDH mentioned in Table 4a, 4b, 4c and 4d refers to the initial calculation of MDH. When selecting the associated RVR, there is no need to take account of a rounding up to the nearest ten feet, which may be done for operational purposes, e.g. conversion to MDA.

5. Night operations

For night operations at least runway edge, threshold and runway end lights must be on.

(c) *Precision approach Category I operations*

1. General

A Category I operation is a precision instrument approach and landing using ILS, MLS or PAR with a decision height not lower than 200 ft and with a runway visual range not less than 550 m.

2. Decision Height

An operator must ensure that the decision height to be used for a Category I precision approach is not lower than:

(i) The minimum decision height specified in the Aeroplane Flight Manual(AFM) if stated;

(ii) The minimum height to which the precision approach aid can be used without the required visual reference;

(iii) The OCH/OCL for the category of aeroplane; or

(iv) 200 ft.

3. Visual Reference

A pilot may not continue an approach below the Category I decision height, determined in accordance with sub-paragraph (c) 2 above, unless at least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot:

(i) Elements of the approach light system;

(ii) The threshold;

(iii) The threshold markings;

(iv) The threshold lights;

(v) The threshold identification lights;

(vi) The visual glide slope indicator;

(vii) The touchdown zone or touchdown zone markings;

(viii) The touchdown zone lights; or

(ix) Runway edge lights.

4. Required RVR

The lowest minima to be used by an operator for Category I operations are:

Table 5

RVR for Cat I approach vs. facilities and DH

Category I minima				
Decision height (Note 7)	Facilities/RVR (Note 5)			
	Full (Notes 1 & 6)	Interm. (Notes 2 & 6)	Basic (Notes 3 & 6)	Nil (Notes 4 & 6)
200 ft	550 m	700 m	800 m	1 000 m
201-250 ft	600 m	700 m	800 m	1 000 m
251-300 ft	650 m	800 m	900 m	1 200 m
301 ft and above	800 m	900 m	1 000 m	1 200 m

Note 1: Full facilities comprise runway markings, 720 m or more of HI/MI approach lights, runway edge lights, threshold lights and runway end lights. Lights must be on.

Note 2: Intermediate facilities comprise runway markings, 420-719 m of HI/MI approach lights, runway edge lights, threshold lights and runway end lights. Lights must be on.

Note 3: Basic facilities comprise runway markings, < 420 m of HI/MI approach lights, any length of LI approach lights, runway edge lights, threshold lights and runway end lights. Lights must be on.

Note 4: Nil approach light facilities comprise runway markings, runway edge lights, threshold lights, runway end lights or no lights at all.

Note 5: The above figures are either the reported RVR or meteorological visibility converted to RVR in accordance with paragraph (h).

Note 6: The Table is applicable to conventional approaches with a glide slope angle up to and including 4° (degree).

Note 7: The DH mentioned in the Table 5 refers to the initial calculation of DH. When selecting the associated RVR, there is no need to take account of a rounding up to the nearest ten feet, which may be done for operational purposes, (e.g. conversion to DA).

5. Single pilot operations

For single pilot operations, an operator must calculate the minimum RVR for all approaches in accordance with OPS 1.430 and this Appendix. An RVR of less than 800 m is not permitted except when using a suitable autopilot coupled to an ILS or MLS, in which case normal minima apply. The Decision Height applied must not be less than 1·25 x the minimum use height for the autopilot.

6. Night operations

For night operations at least runway edge, threshold and runway end lights must be on.

(d) *Precision approach Category II operations*

1. General

A Category II operation is a precision instrument approach and landing using ILS or MLS with:

(i) A decision height below 200 ft but not lower than 100 ft; and

(ii) A runway visual range of not less than 300 m.

2. Decision Height

An operator must ensure that the decision height for a Category II operation is not lower than:

(i) The minimum decision height specified in the AFM, if stated;

(ii) The minimum height to which the precision approach aid can be used without the required visual reference;

(iii) The OCH/OCL for the category of aeroplane;

(iv) The decision height to which the flight crew is authorised to operate; or

(v) 100 ft.

3. Visual reference

A pilot may not continue an approach below the Category II decision height determined in accordance with sub-paragraph (d) 2 above unless visual reference containing a segment of at least 3 consecutive lights being the centre line of the approach lights, or touchdown zone lights, or runway centre line lights, or runway edge lights, or a combination of these is attained and can be maintained. This visual reference must include a lateral element of the ground pattern, i.e. an approach lighting crossbar or the landing threshold or a barette of the touchdown zone lighting.

4. Required RVR

The lowest minima to be used by an operator for Category II operations are:

Table 6

RVR for Cat II approach vs DH

Category II minima		
Decision height	Auto-coupled to below DH (see Note 1)	
	RVR/Aeroplane Category A, B & C	RVR/Aeroplane Category D
100 ft-120 ft	300 m	300 m (Note 2)/350 m
121-140 ft	400 m	400 m
141 ft and above	450 m	450 m

Note 1: The reference to "auto-coupled to below DH" in this table means continued use of the automatic flight control system down to a height which is not greater than 80 % of the applicable DH. Thus airworthiness requirements may, through minimum engagement height for the automatic flight control system, affect the DH to be applied.

Note 2: 300 m may be used for a Category D aeroplane conducting an autoland.

(e) *Precision approach Category III operations*

1. General

Category III operations are subdivided as follows:

(i) Category III A operations

A precision instrument approach and landing using ILS or MLS with:

(A) A decision height lower than 100 ft and

(B) A runway visual range not less than 200 m.

(ii) Category III B operations

A precision instrument approach and landing using ILS or MLS with:

(A) A decision height lower than 50 ft, or no decision height; and

(B) A runway visual range lower than 200 m but not less than 75 m.

2. Decision Height

For operations in which a decision height is used, an operator must ensure that the decision height is not lower than:

(i) The minimum decision height specified in the AFM, if stated;

(ii) The minimum height to which the precision approach aid can be used without the required visual reference; or

(iii) The decision height to which the flight crew is authorised to operate.

3. No Decision Height Operations

Operations with no decision height may only be conducted if:

(i) The operation with no decision height is authorised in the AFM;

(ii) The approach aid and the aerodrome facilities can support operations with no decision height;

and

(iii) The operator has an approval for CAT III operations with no decision height.

Note: In the case of a CAT III runway it may be assumed that operations with no decision height can be supported unless specifically restricted as published in the AIP or NOTAM.

4. Visual reference

(i) For Category III A operations, a pilot may not continue an approach below the decision height determined in accordance with sub-paragraph (e) 2 above unless a visual reference containing a segment of at least 3 consecutive lights being the centreline of the approach lights, or touchdown zone lights, or runway centre line lights, or runway edge lights, or a combination of these is attained and can be maintained.

(ii) For Category III B operations with a decision height a pilot may not continue an approach below the Decision Height, determined in accordance with sub-paragraph (e) 2 above, unless a visual reference containing at least one centreline light is attained and can be maintained.

(iii) For Category III operations with no decision height there is no requirement for visual contact with the runway prior to touchdown.

5. Required RVR

The lowest minima to be used by an operator for Category III operations are:

Table 7

RVR for Cat III approach vs. flight control systems and DH

Category III minima III					
		Flight Control System/RVR (metres)			
Approach Category	Decision Height (ft)	Fail Passive	Fail Operational		
			Without roll-out system	With roll-out guidance or control system	
				Fail Passive	Fail Operational
III A	Less than 100 ft	200 m (Note 1)	200 m	200 m	200 m
III B	less than 50 ft	Not authorised	Not authorised	125 m	75 m
III B	No DH	Not authorised	Not authorised	Not authorised	75 m

Note 1: For operations to actual RVR values less than 300 m, a go-around is assumed in the event of an autopilot failure at or below DH.

(f) *Circling*

1. The lowest minima to be used by an operator for circling are:

Table 8

Visibility and MDH for circling vs. aeroplane category

	Aeroplane Category			
	A	B	C	D
MDH	400 ft	500 ft	600 ft	700 ft
Minimum meteorological visibility	1 500 m	1 600 m	2 400 m	3 600 m

2. Circling with prescribed tracks is an accepted procedure within the meaning of this paragraph

(g) *Visual Approach*

An operator shall not use an RVR of less than 800 m for a visual approach.

(h) *Conversion of Reported Meteorological Visibility to RVR*

1. An operator must ensure that a meteorological visibility to RVR conversion is not used for calculating take-off minima, Category II or III minima or when a reported RVR is available.

2. When converting meteorological visibility to RVR in all other circumstances than those in sub-paragraph (h)(1) above, an operator must ensure that the following Table is used:

Table 9

Conversion of visibility to RVR

Lighting elements in operation	RVR = Reported Met. Visibility ×	
	Day	Night
HI approach and runway lighting	1,5	2,0
Any type of lighting installation other than above	1,0	1,5
No lighting	1,0	Not applicable

Appendix 2 to OPS 1.430 (c)

Aeroplane categories — All Weather Operations

(a) *Classification of aeroplanes*

The criteria taken into consideration for the classification of aeroplanes by categories is the indicated airspeed at threshold (V_{AT}) which is equal to the stalling speed (V_{SO}) multiplied by 1,3 or (V_{S1G}) multiplied by 1,23 in the landing configuration at the maximum certificated landing mass. If both V_{SO} and V_{S1G} are available, the higher resulting V_{AT} shall be used. The aeroplane categories corresponding to V_{AT} values are in the Table below:

Aeroplane Category	V_{AT}
A	Less than 91 kt
B	From 91 to 120 kt
C	From 121 to 140 kt
D	From 141 to 165 kt
E	From 166 to 210 kt

The landing configuration which is to be taken into consideration shall be defined by the operator or by the aeroplane manufacturer.

(b) *Permanent change of category (maximum landing mass)*

1. An operator may impose a permanent, lower, landing mass, and use this mass for determining the V_{AT} if approved by the Authority.

2. The category defined for a given aeroplane shall be a permanent value and thus independent of the changing conditions of day-to-day operations.

Appendix 1 to OPS 1.440

Low Visibility Operations — General Operating Rules

(a) *General*

The following procedures apply to the introduction and approval of low visibility operations.

(b) *Airborne Systems Operational Demonstration*

An operator must comply with the requirements prescribed in paragraph (c) below when introducing an aeroplane type which is new to the Member States into Category II or III service.

Note: For aeroplane types already used for Category II or III operations in another Member State, the in-service proving programme in paragraph (f) applies instead.

1. Operational reliability

The Category II and III success rate must not be less than that required by JAR-AWO.

2. Criteria for a successful approach

An approach is regarded as successful if:

(i) The criteria are as specified in JAR-AWO or its equivalent;

(ii) No relevant aeroplane system failure occurs.

(c) *Data Collection during Airborne System Demonstration*

1. An operator must establish a reporting system to enable checks and periodic reviews to be made during the operational evaluation period before the operator is authorised to conduct Category II or III operations. The reporting system must cover all successful and unsuccessful approaches, with reasons for the latter, and include a record of system component failures. This reporting system must be based upon flight crew reports and automatic recordings as prescribed in paragraphs (d) and (e) below.

2. The recordings of approaches may be made during normal line flights or during other flights performed by the operator.

(d) *Data Collection during Airborne System Demonstration Operations with DH not less than 50 ft*

1. For operations with DH not less than 50 ft, data must be recorded and evaluated by the operator and evaluated by the Authority when necessary.

2. It is sufficient for the following data to be recorded by the flight crew:

(i) Aerodrome and runway used;

(ii) Weather conditions;

(iii) Time;

(iv) Reason for failure leading to an aborted approach;

(v) Adequacy of speed control;

(vi) Trim at time of automatic flight control system disengagement;

(vii) Compatibility of automatic flight control system, flight director and raw data;

(viii) An indication of the position of the aeroplane relative to the ILS centreline when descending through 30 m (100 ft); and

(ix) Touchdown position.

3. The number of approaches, as approved by the Authority, made during the initial evaluation must be sufficient to demonstrate that the performance of the system in actual airline service is such that a 90 % confidence and a 95 % approach success will result.

(e) *Data Collection during Airborne System Demonstration Operations with DH less than 50 ft or no DH*

1. For operations with DH less than 50 ft or no DH, a flight data recorder, or other equipment giving the appropriate information, must be used in addition to the flight crew reports to confirm that the system performs as designed in actual airline service. The following data is required:

(i) Distribution of ILS deviations at 30 m (100 ft), at touchdown and, if appropriate, at disconnection of the roll-out control system and the maximum values of the deviations between those points; and

(ii) Sink rate at touchdown.

2. Any landing irregularity must be fully investigated using all available data to determine its cause.

(f) *In-service proving*

Note: An operator fulfilling the requirements of sub-paragraph (b) above will be deemed to have satisfied the in-service proving requirements contained in this paragraph.

1. The system must demonstrate reliability and performance in line operations consistent with the operational concepts. A sufficient number of successful landings, as determined by the Authority, must be accomplished in line operations, including training flights, using the autoland and roll-out system installed in each aeroplane type.

2. The demonstration must be accomplished using a Category II or Category III ILS. However, if the operator chooses to do so, demonstrations may be made on other ILS facilities if sufficient data is recorded to determine the cause of unsatisfactory performance.

3. If an operator has different variants of the same type of aeroplane utilising the same basic flight control and display systems, or different basic flight control and display systems on the same type of aeroplane, the operator shall show that the variants comply with the basic system performance criteria, but the operator need not conduct a full operational demonstration for each variant.

4. Where an operator introduces an aeroplane type which has already been approved by the Authority of any Member State for Category II and/or III operations a reduced proving programme may be approved.

(g) *Continuous Monitoring*

1. After obtaining the initial authorisation, the operations must be continuously monitored by the operator to detect any undesirable trends before they become hazardous. Flight crew reports may be used to achieve this.

2. The following information must be retained for a period of 12 months:

(i) The total number of approaches, by aeroplane type, where the airborne Category II or III equipment was utilised to make satisfactory, actual or practice, approaches to the applicable Category II or III minima; and

(ii) Reports of unsatisfactory approaches and/or automatic landings, by aerodrome and aeroplane registration, in the following categories:

(A) Airborne equipment faults;

(B) Ground facility difficulties;

(C) Missed approaches because of ATC instructions; or

(D) Other reasons.

3. An operator must establish a procedure to monitor the performance of the automatic landing system of each aeroplane.

(h) *Transitional periods*

1. Operators with no previous Category II or III experience

(i) An operator without previous Category II or III operational experience may be approved for Category II or IIIA operations, having gained a minimum experience of 6 months of Category I operations on the aeroplane type.

(ii) On completing 6 months of Category II or IIIA operations on the aeroplane type the operator may be approved for Category IIIB operations. When granting such an approval, the Authority may impose higher minima than the lowest applicable for an additional period. The increase in minima will normally only refer to RVR and/or a restriction against operations with no decision height and must be selected such that they will not require any change of the operational procedures.

2. Operators with previous Category II or III experience

An operator with previous Category II or III experience may obtain authorisation for a reduced transition period by application to the Authority.

(i) Maintenance of Category II, Category III and LVTO equipment

Maintenance instructions for the on-board guidance systems must be established by the operator, in liaison with the manufacturer, and included in the operator's aeroplane maintenance programme prescribed in OPS 1.910 which must be approved by the Authority.

Appendix 1 to OPS 1.450

Low Visibility Operations Training & Qualifications

(a) *General*

An operator must ensure that flight crew member training programmes for Low Visibility Operations include structured courses of ground, simulator and/or flight training. The operator may abbreviate the course content as prescribed by sub-paragraphs 2 and 3 below provided the content of the abbreviated course is acceptable to the authority.

1. Flight crew members with no Category II or Category III experience must complete the full training programme prescribed in sub-paragraphs (b), (c) and (d) below.

2. Flight crew members with Category II or Category III experience with another operator may undertake an abbreviated ground training course.

3. Flight crew members with Category II or Category III experience with the operator may undertake an abbreviated ground, simulator and/or flight training course. The abbreviated course is to include at least the requirements of sub-paragraphs (d) 1, (d) 2 (i) or (d) 2 (ii) as appropriate and (d) 3 (i).

(b) *Ground Training*

An operator must ensure that the initial ground training course for Low Visibility Operations covers at least:

1. The characteristics and limitations of the ILS and/or MLS;

2. The characteristics of the visual aids;

3. The characteristics of fog;

4. The operational capabilities and limitations of the particular airborne system;

5. The effects of precipitation, ice accretion, low level wind shear and turbulence;

6. The effect of specific aeroplane malfunctions;

7. The use and limitations of RVR assessment systems;

8. The principles of obstacle clearance requirements;

9. Recognition of and action to be taken in the event of failure of ground equipment;

10. The procedures and precautions to be followed with regard to surface movement during operations when the RVR is 400 m or less and any additional procedures required for take-off in conditions below 150 m (200 m for Category D aeroplanes);

11. The significance of decision heights based upon radio altimeters and the effect of terrain profile in the approach area on radio altimeter readings and on the automatic approach/landing systems;

12. The importance and significance of Alert Height if applicable and the action in the event of any failure above and below the Alert Height;

13. The qualification requirements for pilots to obtain and retain approval to conduct Low Visibility Take-offs and Category II or III operations; and

14. The importance of correct seating and eye position.

(c) *Simulator training and/or flight training*

1. An operator must ensure that simulator and/or flight training for Low Visibility Operations includes:

   (i) Checks of satisfactory functioning of equipment, both on the ground and in flight;

   (ii) Effect on minima caused by changes in the status of ground installations;

   (iii) Monitoring of automatic flight control systems and autoland status annunciators with emphasis on the action to be taken in the event of failures of such systems;

   (iv) Actions to be taken in the event of failures such as engines, electrical systems, hydraulics or flight control systems;

   (v) The effect of known unserviceabilities and use of minimum equipment lists;

   (vi) Operating limitations resulting from airworthiness certification;

   (vii) Guidance on the visual cues required at decision height together with information on maximum deviation allowed from glidepath or localiser; and

   (viii) The importance and significance of Alert Height if applicable and the action in the event of any failure above and below the Alert Height.

2. An operator must ensure that each flight crew member is trained to carry out his duties and instructed on the coordination required with other crew members. Maximum use should be made of suitably equipped flight simulators for this purpose.

3. Training must be divided into phases covering normal operation with no aeroplane or equipment failures but including all weather conditions which may be encountered and detailed scenarios of aeroplane and equipment failure which could affect Category II or III operations. If the aeroplane system involves the use of hybrid or other special systems(such as head up displays or enhanced vision equipment) then flight crew members must practise the use of these systems in normal and abnormal modes during the simulator phase of training.

4. Incapacitation procedures appropriate to Low Visibility Take-offs and Category II and III operations shall be practised.

5. For aeroplanes with no type specific simulator, operators must ensure that the flight training phase specific to the visual scenarios of Category II operations is conducted in a simulator approved for that purpose by the Authority. Such training must include a minimum of 4 approaches. The training and procedures that are type specific shall be practised in the aeroplane.

6. Initial Category II and III training shall include at least the following exercises:

   (i) Approach using the appropriate flight guidance, autopilots and control systems installed in the aeroplane, to the appropriate decision height and to include transition to visual flight and landing;

   (ii) Approach with all engines operating using the appropriate flight guidance systems, autopilots and control systems installed in the aeroplane down to the appropriate decision height followed by missed approach; all without external visual reference;

   (iii) Where appropriate, approaches utilising automatic flight systems to provide automatic flare, landing and roll-out; and

(iv) Normal operation of the applicable system both with and without acquisition of visual cues at decision height.

7. Subsequent phases of training must include at least:

(i) Approaches with engine failure at various stages on the approach;

(ii) Approaches with critical equipment failures (e.g. electrical systems, auto flight systems, ground and/or airborne ILS/MLS systems and status monitors);

(iii) Approaches where failures of autoflight equipment at low level require either;

(A) Reversion to manual flight to control flare, landing and roll out or missed approach; or

(B) Reversion to manual flight or a downgraded automatic mode to control missed approaches from, at or below decision height including those which may result in a touchdown on the runway;

(iv) Failures of the systems which will result in excessive localiser and/or glideslope deviation, both above and below decision height, in the minimum visual conditions authorised for the operation. In addition, a continuation to a manual landing must be practised if a head-up display forms a downgraded mode of the automatic system or the head-up display forms the only flare mode; and

(v) Failures and procedures specific to aeroplane type or variant.

8. The training programme must provide practice in handling faults which require a reversion to higher minima.

9. The training programme must include the handling of the aeroplane when, during a fail passive Category III approach, the fault causes the autopilot to disconnect at or below decision height when the last reported RVR is 300 m or less.

10. Where take-offs are conducted in RVRs of 400 m and below, training must be established to cover system failures and engine failure resulting in continued as well as rejected take-offs.

(d) *Conversion Training Requirements to conduct Low Visibility Take-off and Category II and III Operations*

An operator shall ensure that each flight crew member completes the following Low Visibility Procedures training if converting to a new type or variant of aeroplane in which Low Visibility Take-off and Category II and III Operations will be conducted. The flight crew member experience requirements to undertake an abbreviated course are prescribed in sub-paragraphs (a) 2 and (a) 3, above:

1. Ground Training

The appropriate requirements prescribed in sub-paragraph (b) above, taking into account the flight crew member's Category II and Category III training and experience.

2. Simulator Training and/or Flight training

(i) A minimum of 8 approaches and/or landings in a simulator approved for the purpose.

(ii) Where no type-specific simulator is available, a minimum of 3 approaches including at least 1 go-around is required on the aeroplane.

(iii) Appropriate additional training if any special equipment is required such as head-up displays or enhanced vision equipment.

3. Flight Crew Qualification

The flight crew qualification requirements are specific to the operator and the type of aeroplane operated.

(i) The operator must ensure that each flight crew member completes a check before conducting Category II or III operations.

(ii) The check prescribed in sub-paragraph (i) above may be replaced by successful completion of the simulator and/or flight training prescribed in sub-paragraph (d) 2 above.

4. Line Flying under Supervision

An operator must ensure that each flight crew member undergoes the following line flying under supervision:

(i) For Category II when a manual landing is required, a minimum of 3 landings from autopilot disconnect;

For Category III, a minimum of 3 autolands except that only 1 autoland is required when the training required in sub-paragraph (d) 2 above has been carried out in a full flight simulator usable for zero flight time training.

(e) *Type and command experience*

Before commencing Category II/III operations, the following additional requirements are applicable to commanders, or pilots to whom conduct of the flight has been delegated, who are new to the aeroplane type:

1. 50 hours or 20 sectors on the type, including line flying under supervision; and

2. 100 m must be added to the applicable Category II or Category III RVR minima unless previously qualified for Category II or III operations with an operator, until a total of 100 hours or 40 sectors, including line flying under supervision, has been achieved on the type.

3. The Authority may authorise a reduction in the above command experience requirements for flight crew members who have Category II or Category III command experience.

(f) *Low Visibility Take-Off with RVR less than 150/200 m*

1. An operator must ensure that prior to authorisation to conduct take-offs in RVRs below 150 m (below 200 m for Category D aeroplanes) the following training is carried out:

   (i) Normal take-off in minimum authorised RVR conditions;

   (ii) Take-off in minimum authorised RVR conditions with an engine failure between V_1 and V_2, or as soon as safety considerations permit; and

   (iii) Take-off in minimum authorised RVR conditions with an engine failure before V_1 resulting in a rejected take-off.

2. An operator must ensure that the training required by sub-paragraph 1 above is carried out in an approved simulator. This training must include the use of any special procedures and equipment. Where no approved simulator exists, the Authority may approve such training in an aeroplane without the requirement for minimum RVR conditions. (See Appendix 1 to OPS 1.965.)

3. An operator must ensure that a flight crew member has completed a check before conducting low visibility take-offs in RVRs of less than 150 m (less than 200 m for Category D aeroplanes) if applicable. The check may only be replaced by successful completion of the simulator and/or flight training prescribed in sub-paragraph (f) 1 on initial conversion to an aeroplane type.

(g) *Recurrent Training and Checking Low Visibility Operations*

1. An operator must ensure that, in conjunction with the normal recurrent training and operator proficiency checks, a pilot's knowledge and ability to perform the tasks associated with the particular category of operation, for which he is authorised is checked. The required number of approaches within the validity period of the operators proficiency check (as described in OPS 1.965 (b)) is to be a minimum of three, one of which may be substituted by an approach and landing in the aeroplane using approved Category II and III procedures. One missed approach shall be flown during the conduct of the operators proficiency check. If the operator is authorised to conduct take-off with RVR less than 150/200 m at least one LVTO to the lowest applicable minima shall be flown during the conduct of the operators proficiency check.

2. For Category III operations an operator must use a flight simulator approved for Category III training.

3. An operator must ensure that, for Category III operations on aeroplanes with a fail passive flight control system, a missed approach is completed at least once over the period of three consecutive operator proficiency checks the result of an autopilot failure at or below decision height when the last reported RVR was 300 m or less.

4. The Authority may authorise recurrent training and checking for Category II and LVTO operations in an aeroplane type where no approved simulator is available.

Note: Recency for LTVO and Category II/III based upon automatic approaches and/or auto-lands is maintained by the recurrent training and checking as prescribed in this paragraph.

Appendix 1 to OPS 1.455

Low Visibility Operations — Operating procedures

(a) *General*

Low Visibility Operations include:

1. Manual take-off (with or without electronic guidance systems);

2. Auto-coupled approach to below DH, with manual flare, landing and roll-out;

3. Auto-coupled approach followed by auto-flare, autolanding and manual roll-out; and

4. Auto-coupled approach followed by auto-flare, autolanding and auto-roll-out,

when the applicable RVR is less than 400 m.

Note 1: A hybrid system may be used with any of these modes of operations.

Note 2: Other forms of guidance systems or displays may be certificated and approved.

(b) *Procedures and Operating Instructions*

1. The precise nature and scope of procedures and instructions given depend upon the airborne equipment used and the flight deck procedures followed. An operator must clearly define flight crew member duties during take-off, approach, flare, roll-out and missed approach in the Operations Manual. Particular emphasis must be placed on flight crew responsibilities during transition from non-visual conditions to visual conditions, and on the procedures to be used in deteriorating visibility or when failures occur. Special attention must be paid to the distribution of flight deck duties so as to ensure that the workload of the pilot making the decision to land or execute a missed approach enables him to devote himself to supervision and the decision making process.

2. An operator must specify the detailed operating procedures and instructions in the Operations Manual. The instructions must be compatible with the limitations and mandatory procedures contained in the Aeroplane Flight Manual and cover the following items in particular:

(i) Checks for the satisfactory functioning of the aeroplane equipment, both before departure and in flight;

(ii) Effect on minima caused by changes in the status of the ground installations and airborne equipment;

(iii) Procedures for the take-off, approach, flare, landing, roll-out and missed approach;

(iv) Procedures to be followed in the event of failures, warnings and other non-normal situations;

(v) The minimum visual reference required;

(vi) The importance of correct seating and eye position;

(vii) Action which may be necessary arising from a deterioration of the visual reference;

(viii) Allocation of crew duties in the carrying out of the procedures according to sub-paragraphs (i) to (iv) and (vi) above, to allow the Commander to devote himself mainly to supervision and decision making;

(ix) The requirement for all height calls below 200 ft to be based on the radio altimeter and for one pilot to continue to monitor the aeroplane instruments until the landing is completed;

(x) The requirement for the Localiser Sensitive Area to be protected;

(xi) The use of information relating to wind velocity, windshear, turbulence, runway contamination and use of multiple RVR assessments;

(xii) Procedures to be used for practice approaches and landing on runways at which the full Category II or Category III aerodrome procedures are not in force;

(xiii) Operating limitations resulting from airworthiness certification; and

(xiv) Information on the maximum deviation allowed from the ILS glide path and/or localiser.

Appendix 1 to OPS 1.465

Minimum Visibilities for VFR Operations

Airspace class	B	C D E	F G	
			Above 900 m (3 000 ft) AMSL or above 300 m (1 000 ft) above terrain, whichever is the higher	At and below 900 m (3 000 ft) AMSL or 300 m (1 000 ft) above terrain, whichever is the higher
Distance from cloud	Clear of cloud	1 500 m horizontally 300 m (1 000 ft) vertically		Clear of cloud and in sight of the surface
Fight visibility	8 km at and above 3 050 m (10 000 ft) AMSL (Note 1) 5 km below 3 050 m (10 000 ft) AMSL			5 km (Note 2)

Note 1: When the height of the transition altitude is lower than 3 050 m (10 000 ft) AMSL, FL 100 should be used in lieu of 10 000 ft.

Note 2: Cat A and B aeroplanes may be operated in flight visibilities down to 3 000 m, provided the appropriate ATS authority permits use of a flight visibility less than 5 km, and the circumstances are such, that the probability of encounters with other traffic is low, and the IAS is 140 kt or less.

SUBPART F

PERFORMANCE GENERAL

OPS 1.470

Applicability

(a) An operator shall ensure that multi-engine aeroplanes powered by turbopropeller engines with a maximum approved passenger seating configuration of more than 9 or a maximum take-off mass exceeding 5 700 kg, and all multi-engine turbojet powered aeroplanes are operated in accordance with Subpart G (Performance Class A).

(b) An operator shall ensure that propeller driven aeroplanes with a maximum approved passenger seating configuration of 9 or less, and a maximum take-off mass of 5 700 kg or less are operated in accordance with Subpart H (Performance Class B).

(c) An operator shall ensure that aeroplanes powered by reciprocating engines with a maximum approved passenger seating configuration of more than 9 or a maximum take-off mass exceeding 5 700 kg are operated in accordance with Subpart I (Performance Class C).

(d) Where full compliance with the requirements of the appropriate Subpart cannot be shown due to specific design characteristics (eg supersonic aeroplanes or seaplanes), the operator shall apply approved performance standards that ensure a level of safety equivalent to that of the appropriate Subpart.

(e) Multi-engine aeroplanes powered by turbopropeller engines with a maximum approved passenger seating configuration of more than 9 and with a maximum take-off mass of 5 700 kg or less may be permitted by the Authority to operate under alternative operating limitations to those of Performance Class A which shall not be less restrictive than those of the relevant requirements of Subpart H;

(f) The provisions of subparagraph (e) above will expire on 1 April 2000.

OPS 1.475

General

(a) An operator shall ensure that the mass of the aeroplane:

1. At the start of the take-off;

or, in the event of in-flight replanning

2. At the point from which the revised operational flight plan applies,

is not greater than the mass at which the requirements of the appropriate Subpart can be complied with for the flight to be undertaken, allowing for expected reductions in mass as the flight proceeds, and for such fuel jettisoning as is provided for in the particular requirement.

(b) An operator shall ensure that the approved performance Data contained in the Aeroplane Flight Manual is used to determine compliance with the requirements of the appropriate Subpart, supplemented as necessary with other data acceptable to the Authority as prescribed in the relevant Subpart. When applying the factors prescribed in the appropriate Subpart, account may be taken of any operational factors already incorporated in the Aeroplane Flight Manual performance data to avoid double application of factors.

(c) When showing compliance with the requirements of the appropriate Subpart, due account shall be taken of aeroplane configuration, environmental conditions and the operation of systems which have an adverse effect on performance.

(d) For performance purposes, a damp runway, other than a grass runway, may be considered to be dry.

OPS 1.480

Terminology

(a) Terms used in Subparts F, G, H, I and J, and not defined in JAR-1, have the following meaning:

1. Accelerate-stop distance available (ASDA): The length of the take-off run available plus the length of stopway, if such stopway is declared available by the appropriate Authority and is capable of bearing the mass of the aeroplane under the prevailing operating conditions.

2. Contaminated runway: A runway is considered to be contaminated when more than 25 % of the runway surface area (whether in isolated areas or not) within the required length and width being used is covered by the following:

(i) Surface water more than 3 mm (0,125 in) deep, or by slush, or loose snow, equivalent to more than 3 mm (0,125 in) of water;

(ii) Snow which has been compressed into a solid mass which resists further compression and will hold together or break into lumps if picked up (compacted snow); or

(iii) Ice, including wet ice.

3. Damp runway: A runway is considered damp when the surface is not dry, but when the moisture on it does not give it a shiny appearance.

4. Dry runway: A dry runway is one which is neither wet nor contaminated, and includes those paved runways which have been specially prepared with grooves or porous pavement and maintained to retain "effectively dry" braking action even when moisture is present.

5. Landing distance available (LDA): The length of the runway which is declared available by the appropriate Authority and suitable for the ground run of an aeroplane landing.

6. Maximum approved passenger seating configuration: The maximum passenger seating capacity of an individual aeroplane, excluding pilot seats or flight deck seats and cabin crew seats as applicable, used by the operator, approved by the Authority and specified in the Operations Manual.

7. Take-off distance available (TODA): The length of the take-off run available plus the length of the clearway available.

8. Take-off mass: The take-off mass of the aeroplane shall be taken to be its mass, including everything and everyone carried at the commencement of the take-off run.

9. Take-off run available (TORA): The length of runway which is declared available by the appropriate Authority and suitable for the ground run of an aeroplane taking off.

10. Wet runway: A runway is considered wet when the runway surface is covered with water, or equivalent, less than specified in sub-paragraph (a) 2 above or when there is sufficient moisture on the runway surface to cause it to appear reflective, but without significant areas of standing water.

(b) The terms "accelerate-stop distance", "take-off distance", "take-off run", "net take-off flight path", "one engine inoperative en-route net flight path" and "two engines inoperative en-route net flight path" as relating to the aeroplane have their meanings defined in the airworthiness requirements under which the aeroplane was certificated, or as specified by the Authority if it finds that definition inadequate for showing compliance with the performance operating limitations.

SUBPART G

PERFORMANCE CLASS A

OPS 1.485

General

(a) An operator shall ensure that, for determining compliance with the requirements of this Subpart, the approved performance data in the Aeroplane Flight Manual is supplemented as necessary with other data acceptable to the Authority if the approved performance Data in the Aeroplane Flight Manual is insufficient in respect of items such as:

1. Accounting for reasonably expected adverse operating conditions such as take-off and landing on contaminated runways; and

2. Consideration of engine failure in all flight phases.

(b) An operator shall ensure that, for the wet and contaminated runway case, performance data determined in accordance with JAR 25 X 1591 or equivalent acceptable to the Authority is used.

OPS 1.490

Take-off

(a) An operator shall ensure that the take-off mass does not exceed the maximum take-off mass specified in the Aeroplane Flight Manual for the pressure altitude and the ambient temperature at the aerodrome at which the take-off is to be made.

(b) An operator must meet the following requirements when determining the maximum permitted take-off mass:

1. The accelerate-stop distance must not exceed the accelerate-stop distance available;

2. The take-off distance must not exceed the take-off distance available, with a clearway distance not exceeding half of the take-off run available;

3. The take-off run must not exceed the take-off run available;

4. Compliance with this paragraph must be shown using a single value of V_1 for the rejected and continued take-off; and

5. On a wet or contaminated runway, the take-off mass must not exceed that permitted for a take-off on a dry runway under the same conditions.

(c) When showing compliance with sub-paragraph (b) above, an operator must take account of the following:

1. The pressure altitude at the aerodrome;

2. The ambient temperature at the aerodrome;

3. The runway surface condition and the type of runway surface;

4. The runway slope in the direction of take-off;

5. Not more than 50 % of the reported head-wind component or not less than 150 % of the reported tailwind component; and

6. The loss, if any, of runway length due to alignment of the aeroplane prior to take-off.

OPS 1.495

Take-off obstacle clearance

(a) An operator shall ensure that the net take-off flight path clears all obstacles by a vertical distance of at least 35 ft or by a horizontal distance of at least 90 m plus 0,125 x D, where D is the horizontal distance the aeroplane has travelled from the end of the take-off distance available or the end of the take-off distance if a turn is scheduled before the end of the take-off distance available. For aeroplanes with a wingspan of less than 60 m a horizontal obstacle clearance of half the aeroplane wingspan plus 60 m, plus 0,125 x D may be used.

(b) When showing compliance with sub-paragraph (a) above, an operator must take account of the following:

1. The mass of the aeroplane at the commencement of the take-off run;

2. The pressure altitude at the aerodrome;

3. The ambient temperature at the aerodrome; and

4. Not more than 50 % of the reported head-wind component or not less than 150 % of the reported tailwind component.

(c) When showing compliance with sub-paragraph (a) above:

1. Track changes shall not be allowed up to the point at which the net take-off flight path has achieved a height equal to one half the wingspan but not less than 50 ft above the elevation of the end of the take-off run available. Thereafter, up to a height of 400 ft it is assumed that the aeroplane is banked by no more than 15° Above 400 ft height bank angles greater than 15° but not more than 25° may be scheduled;

2. Any part of the net take-off flight path in which the aeroplane is banked by more than than 15° must clear all obstacles within the horizontal distances specified in sub-paragraphs (a), (d) and (e) of this paragraph by a vertical distance of at least 50 ft;

3. An operator must use special procedures, subject to the approval of the Authority, to apply increased bank angles of not more than 20° between 200 ft and 400 ft, or not more than 30 ° above 400 ft (See Appendix 1 to OPS 1.495 (c) 3), and

4. Adequate allowance must be made for the effect of bank angle on operating speeds and flight path including the distance increments resulting from increased operating speeds.

(d) When showing compliance with sub-paragraph (a) above for those cases where the intended flight path does not require track changes of more than 15°, an operator need not consider those obstacles which have a lateral distance greater than:

1. 300 m, if the pilot is able to maintain the required navigational accuracy through the obstacle accountability area; or

2. 600 m, for flights under all other conditions.

(e) When showing compliance with sub-paragraph (a) above for those cases where the intended flight path does require track changes of more than 15°, an operator need not consider those obstacles which have a lateral distance greater than:

1. 600 m, if the pilot is able to maintain the required navigational accuracy through the obstacle accountability area; or

2. 900 m for flights under all other conditions.

(f) An operator shall establish contingency procedures to satisfy the requirements of OPS 1.495 and to provide a safe route, avoiding obstacles, to enable the aeroplane to either comply with the en-route requirements of OPS 1.500, or land at either the aerodrome of departure or at a take-off alternate aerodrome.

OPS 1.500

En-route — One Engine Inoperative

(a) An operator shall ensure that the one engine inoperative en-route net flight path data shown in the Aeroplane Flight Manual, appropriate to the meteorological conditions expected for the flight, complies with either sub-paragraph (b) or (c) at all points along the route. The net flight path must have a positive gradient at 1 500 ft above the aerodrome where the landing is assumed to be made after engine failure. In meteorological conditions requiring the operation of ice protection systems, the effect of their use on the net flight path must be taken into account.

(b) The gradient of the net flight path must be positive at at least 1 000 ft above all terrain and obstructions along the route within 9,3 km (5 nm) on either side of the intended track.

(c) The net flight path must permit the aeroplane to continue flight from the cruising altitude to an aerodrome where a landing can be made in accordance with OPS 1.515 or 1.520 as appropriate, the net flight path clearing vertically, by at least 2 000 ft, all terrain and obstructions along the route within 9,3 km (5 nm) on either side of the intended track in accordance with sub-paragraphs (1) to (4) below:

1. The engine is assumed to fail at the most critical point along the route;

2. Account is taken of the effects of winds on the flight path;

3. Fuel jettisoning is permitted to an extent consistent with reaching the aerodrome with the required fuel reserves, if a safe procedure is used; and

4. The aerodrome where the aeroplane is assumed to land after engine failure must meet the following criteria:

(i) The performance requirements at the expected landing mass are met; and

(ii) Weather reports or forecasts, or any combination thereof, and field condition reports indicate that a safe landing can be accomplished at the estimated time of landing.

(d) When showing compliance with OPS 1.500, an operator must increase the width margins of subparagraphs (b) and (c) above to 18,5 km (10 nm) if the navigational accuracy does not meet the 95 % containment level.

OPS 1.505

En-route — Aeroplanes With Three Or More Engines, Two Engines Inoperative

An operator shall ensure that at no point along the intended track will an aeroplane having three or more engines be more than 90 minutes, at the all-engines long range cruising speed at standard temperature in still air, away from an aerodrome at which the performance requirements applicable at the expected landing mass are met unless it complies with sub-paragraphs (b) to (f) below.

(b) The two engines inoperative en-route net flight path data must permit the aeroplane to continue the flight, in the expected meteorological conditions, from the point where two engines are assumed to fail simultaneously, to an aerodrome at which it is possible to land and come to a complete stop when using the prescribed procedure for a landing with two engines inoperative. The net flight path must clear vertically, by at least 2 000 ft all terrain and obstructions along the route within 9,3 km (5 nm) on either side of the intended track. At altitudes and in meteorological conditions requiring ice protection systems to be operable, the effect of their use on the net flight path data must be taken into account. If the navigational accuracy does not meet the 95 % containment level, an operator must increase the width margin given above to 18,5 km (10 nm).

(c) The two engines are assumed to fail at the most critical point of that portion of the route where the aeroplane is more than 90 minutes, at the all engines long range cruising speed at standard temperature in still air, away from an aerodrome at which the performance requirements applicable at the expected landing mass are met.

(d) The net flight path must have a positive gradient at 1 500 ft above the aerodrome where the landing is assumed to be made after the failure of two engines.

(e) Fuel jettisoning is permitted to an extent consistent with reaching the aerodrome with the required fuel reserves, if a safe procedure is used.

(f) The expected mass of the aeroplane at the point where the two engines are assumed to fail must not be less than that which would include sufficient fuel to proceed to an aerodrome where the landing is assumed to be made, and to arrive there at least 1 500 ft directly over the landing area and thereafter to fly level for 15 minutes.

OPS 1.510

Landing — Destination And Alternate Aerodromes

(a) An operator shall ensure that the landing mass of the aeroplane determined in accordance with OPS 1.475 (a) does not exceed the maximum landing mass specified for the altitude and the ambient temperature expected for the estimated time of landing at the destination and alternate aerodrome.

(b) For instrument approaches with decision heights below 200 ft, an operator must verify that the approach mass of the aeroplane, taking into account the take-off mass and the fuel expected to be consumed in flight, allows a missed approach gradient of climb, with the critical engine failed and with the speed and configuration used for go-around of at least 2,5 %, or the published gradient, whichever is the greater. The use of an alternative method must be approved by the Authority.

OPS 1.515

Landing — Dry Runways

(a) An operator shall ensure that the landing mass of the aeroplane determined in accordance with OPS 1.475 (a) for the estimated time of landing at the destination aerodrome and at any alternate aerodrome allows a full stop landing from 50 ft above the threshold:

1. For turbo-jet powered aeroplanes, within 60 % of the landing distance available; or

2. For turbo-propeller powered aeroplanes, within 70 % of the landing distance available;

3. For Steep Approach procedures the Authority may approve the use of landing distance Data factored in accordance with sub-paragraphs (a) 1 and (a) 2 above as appropriate, based on a screen height of less than 50 ft, but not less than 35 ft. (See Appendix 1 to OPS 1.515(a) 3.)

4. When showing compliance with sub-paragraphs (a) 1 and (a) 2 above, the Authority may exceptionally approve, when satisfied that there is a need (see Appendix 1), the use of Short Landing Operations, in accordance with Appendices 1 and 2 together with any other supplementary conditions that the Authority considers necessary in order to ensure an acceptable level of safety in the particular case.

(b) When showing compliance with sub-paragraph (a) above, an operator must take account of the following:

1. The altitude at the aerodrome;

2. Not more than 50 % of the head-wind component or not less than 150 % of the tailwind component; and

3. The runway slope in the direction of landing if greater than +/- 2 %.

(c) When showing compliance with sub-paragraph (a) above, it must be assumed that:

1. The aeroplane will land on the most favourable runway, in still air; and

2. The aeroplane will land on the runway most likely to be assigned considering the probable wind speed and direction and the ground handling characteristics of the aeroplane, and considering other conditions such as landing aids and terrain.

(d) If an operator is unable to comply with sub-paragraph (c) 1 above for a destination aerodrome having a single runway where a landing depends upon a specified wind component, an aeroplane may be despatched if 2 alternate aerodromes are designated which permit full compliance with sub-paragraphs (a), (b) and (c). Before commencing an approach to land at the destination aerodrome the commander must satisfy himself that a landing can be made in full compliance with OPS 1.510 and sub-paragraphs (a) and (b) above.

(e) If an operator is unable to comply with sub-paragraph (c) 2 above for the destination aerodrome, the aeroplane may be despatched if an alternate aerodrome is designated which permits full compliance with sub-paragraphs (a), (b) and (c).

OPS 1.520

Landing — Wet and contaminated runways

(a) An operator shall ensure that when the appropriate weather reports or forecasts, or a combination thereof, indicate that the runway at the estimated time of arrival may be wet, the landing distance available is at least 115 % of the required landing distance, determined in accordance with OPS 1.515.

(b) An operator shall ensure that when the appropriate weather reports or forecasts, or a combination thereof, indicate that the runway at the estimated time of arrival may be contaminated, the landing distance available must be at least the landing distance determined in accordance with sub-paragraph (a) above, or at least 115 % of the landing distance determined in accordance with approved contaminated landing distance data or equivalent, accepted by the Authority, whichever is greater.

(c) A landing distance on a wet runway shorter than that required by sub-paragraph (a) above, but not less than that required by OPS 1.515 (a), may be used if the Aeroplane Flight Manual includes specific additional information about landing distances on wet runways.

(d) A landing distance on a specially prepared contaminated runway shorter than that required by sub-paragraph (b) above, but not less than that required by OPS 1.515 (a), may be used if the Aeroplane Flight Manual includes specific additional information about landing distances on contaminated runways.

(e) When showing compliance with sub-paragraphs (b), (c) and (d) above, the criteria of OPS 1.515 (a) 1 and 2 shall not be applied to sub-paragraph (b) above.

Appendix 1 to OPS 1.495 (c) 3

Approval of increased bank angles

For the use of the increased bank angles requiring special approval, the following criteria shall be met:

1. The Aeroplane Flight Manual must contain approved data for the required increase of operating speed and data to allow the construction of the flight path considering the increased bank angles and speeds.

2. Visual guidance must be available for navigation accuracy. Weather minima and wind limitations must be specified for each runway and approved by the Authority.

3. Training in accordance with OPS 1.975.

Appendix 1 to OPS 1.515 (a) 3

Steep Approach Procedures

The Authority may approve the application of Steep Approach procedures using glideslope angles of 4-5° or more and with screen heights of less than 50 ft but not less than 35 ft, provided that the following criteria are met:

1. The Aeroplane Flight Manual must state the maximum approved glideslope angle, any other limitations, normal, abnormal or emergency procedures for the steep approach as well as amendments to the field length data when using steep approach criteria;

2. A suitable glidepath reference system comprising at least a visual glidepath indicating system must be available at each aerodrome at which steep approach procedures are to be conducted; and

3. Weather minima must be specified and approved for each runway to be used with a steep approach. Consideration must be given to the following:

   (i) The obstacle situation;

   (ii) The type of glidepath reference and runway guidance such as visual aids, MLS, 3D-NAV, ILS, LLZ, VOR, NDB;

   (iii) The minimum visual reference to be required at DH and MDA;

   (iv) Available airborne equipment;

   (v) Pilot qualification and special aerodrome familiarisation;

   (vi) Aeroplane Flight Manual limitations and procedures; and

   (vii) Missed approach criteria.

Appendix 1 to OPS 1.515 (a) 4

Short Landing Operations

For the purpose of OPS 1. 515 (a) 4, the distance used for the calculation of the permitted landing mass may consist of the usable length of the declared safe area plus the declared landing distance available. The Authority may approve such operations in accordance with the following criteria:

1. Demonstration of the need for Short Landing Operations. There must be a clear public interest and operational necessity for the operation, either due to the remoteness of the airport or to physical limitations relating to extending the runway.

2. Aeroplane and Operational Criteria.

   (i) Short landing operations will only be approved for aeroplanes where the vertical distance between the path of the pilot's eye and the path of the lowest part of the wheels with the aeroplane, established on the normal glide path does not exceed 3 metres.

   (ii) When establishing aerodrome operating minima the visibility/RVR must not be less than 1,5 km. In addition, wind limitations must be specified in the Operations Manual.

   (iii) Minimum pilot experience, training requirements and special aerodrome familiarisation must be specified for such operations in the Operations Manual.

3. It is assumed that the crossing height over the beginning of the usable length of the declared safe area is 50 ft.

4. Additional criteria. The Authority may impose such additional conditions as are deemed necessary for a safe operation taking into account the aeroplane type characteristics, orographic characteristics in the approach area, available approach aids and missed approach/baulked landing considerations. Such additional conditions may be, for instance, the requirement for VASI/PAPI -type visual slope indicator system.

Appendix 2 to OPS 1.515 (a) 4

Airfield Criteria for Short Landing Operations

Airfield Criteria

1. The use of the safe area must be approved by the airport authority.

2. The useable length of the declared safe area under the provisions of 1.515 (a) 4, and this Appendix, must not exceed 90 metres.

3. The width of the declared safe area shall not be less than twice the runway width or twice the wing span, whichever is the greater, centred on the extended runway centre line.

4. The declared safe area must be clear of obstructions or depressions which would endanger an aeroplane undershooting the runway and no mobile object shall be permitted on the declared safety area while the runway is being used for short landing operations.

5. The slope of the declared safety area must not exceed 5 % upward nor 2 % downward in the direction of landing.

6. For the purpose of this operation, the bearing strength requirement of OPS 1.480 (a) 5 need not apply to the declared safe area.

SUBPART H

PERFORMANCE CLASS B

OPS 1.525

General

(a) An operator shall not operate a single-engine aeroplane:

1. At night; or

2. In Instrument Meteorological Conditions except under Special Visual Flight Rules.

Note: Limitations on the operation of single-engine aeroplanes are covered by OPS 1.240 (a) 6.

(b) An operator shall treat two-engine aeroplanes which do not meet the climb requirements of Appendix 1 to OPS 1.525 (b) as single-engine aeroplanes.

OPS 1.530

Take-off

(a) An operator shall ensure that the take-off mass does not exceed the maximum take-off mass specified in the Aeroplane Flight Manual for the pressure altitude and the ambient temperature at the aerodrome at which the take-off is to be made.

(b) An operator shall ensure that the unfactored take-off distance, as specified in the Aeroplane Flight Manual does not exceed:

1. When multiplied by a factor of 1,25, the take-off run available; or

2. When stopway and/or clearway is available, the following:

(i) The take-off run available;

(ii) When multiplied by a factor of 1,15, the take-off distance available; and

(iii) When multiplied by a factor of 1,3, the accelerate-stop distance available.

(c) When showing compliance with sub-paragraph (b) above, an operator shall take account of the following:

1. The mass of the aeroplane at the commencement of the take-off run;

2. The pressure altitude at the aerodrome;

3. The ambient temperature at the aerodrome;

4. The runway surface condition and the type of runway surface

5. The runway slope in the direction of take-off and

6. Not more than 50 % of the reported head-wind component or not less than 150 % of the reported tail-wind component.

OPS 1.535

Take-off Obstacle Clearance — Multi-Engined Aeroplanes

(a) An operator shall ensure that the take-off flight path of aeroplanes with two or more engines, determined in accordance with this sub-paragraph, clears all obstacles by a vertical margin of at least 50 ft, or by a horizontal distance of at least 90 m plus 0,125 × D, where D is the horizontal distance travelled by the aeroplane from the end of the take-off distance available or the end of the take-off distance if a turn is scheduled before the end of the take-off distance available except as provided in sub-paragraphs (b) and (c) below. When showing compliance with this sub-paragraph it must be assumed that:

1. The take-off flight path begins at a height of 50 ft above the surface at the end of the take-off distance required by OPS 1.530 (b) and ends at a height of 1 500 ft above the surface;

2. The aeroplane is not banked before the aeroplane has reached a height of 50 ft above the surface, and that thereafter the angle of bank does not exceed 15º;

3. Failure of the critical engine occurs at the point on the all engine take-off flight path where visual reference for the purpose of avoiding obstacles is expected to be lost;

4. The gradient of the take-off flight path from 50 ft to the assumed engine failure height is equal to the average all-engine gradient during climb and transition to the en-route configuration, multiplied by a factor of 0,77; and

5. The gradient of the take-off flight path from the height reached in accordance with sub-paragraph (4) above to the end of the take-off flight path is equal to the one engine inoperative en-route climb gradient shown in the Aeroplane Flight Manual.

(b) When showing compliance with sub-paragraph (a) above for those cases where the intended flight path does not require track changes of more than 15°, an operator need not consider those obstacles which have a lateral distance greater than:

1. 300 m, if the flight is conducted under conditions allowing visual course guidance navigation, or if navigational aids are available enabling the pilot to maintain the intended flight path with the same accuracy (see Appendix 1 to OPS 1.535 (b) 1 & (c) 1; or

2. 600 m, for flights under all other conditions.

(c) When showing compliance with sub-paragraph (a) above for those cases where the intended flight path requires track changes of more than 15°, an operator need not consider those obstacles which have a lateral distance greater than:

1. 600 m for flights under conditions allowing visual course guidance navigation (see Appendix 1 to OPS 1.535 (b) 1 & (c) 1);

2. 900 m for flights under all other conditions.

(d) When showing compliance with sub-paragraphs (a), (b) and (c) above, an operator must take account of the following:

1. The mass of the aeroplane at the commencement of the take-off run;

2. The pressure altitude at the aerodrome;

3. The ambient temperature at the aerodrome; and

4. Not more than 50 % of the reported head-wind component or not less than 150 % of the reported tail-wind component.

OPS 1.540

En-Route — Multi-engined aeroplanes

(a) An operator shall ensure that the aeroplane, in the meteorological conditions expected for the flight, and in the event of the failure of one engine, with the remaining engines operating within the maximum continuous power conditions specified, is capable of continuing flight at or above the relevant minimum altitudes for safe flight stated in the Operations Manual to a point 1 000 ft above an aerodrome at which the performance requirements can be met.

(b) When showing compliance with sub-paragraph (a) above:

1. The aeroplane must not be assumed to be flying at an altitude exceeding that at which the rate of climb equals 300 ft per minute with all engines operating within the maximum continuous power conditions specified; and

2. The assumed en-route gradient with one engine inoperative shall be the gross gradient of descent or climb, as appropriate, respectively increased by a gradient of 0,5 %, or decreased by a gradient of 0,5 %.

OPS 1.542

En-Route — Single-engine aeroplanes

(a) An operator shall ensure that the aeroplane, in the meteorological conditions expected for the flight, and in the event of engine failure, is capable of reaching a place at which a safe forced landing can be made. For landplanes, a place on land is required, unless otherwise approved by the Authority.

(b) When showing compliance with sub-paragraph (a) above:

1. The aeroplane must not be assumed to be flying, with the engine operating within the maximum continuous power conditions specified, at an altitude exceeding that at which the rate of climb equals 300 ft per minute; and

2. The assumed en-route gradient shall be the gross gradient of descent increased by a gradient of 0,5%.

OPS 1.545

Landing — Destination and Alternate Aerodromes

An operator shall ensure that the landing mass of the aeroplane determined in accordance with OPS 1.475 (a) does not exceed the maximum landing mass specified for the altitude and the ambient temperature expected for the estimated time of landing at the destination and alternate aerodrome.

OPS 1.550

Landing — Dry runway

(a) An operator shall ensure that the landing mass of the aeroplane determined in accordance with OPS 1.475 (a) for the estimated time of landing allows a full stop landing from 50 ft above the threshold within 70 % of the landing distance available at the destination aerodrome and at any alternate aerodrome.

1. The Authority may approve the use of landing distance data factored in accordance with this paragraph based on Steep Approach Procedures using a screen height of less than 50 ft, but not less than 35 ft (See Appendix 1 to OPS 1.550 (a));

2. The Authority may approve Short Landing Operations, in accordance with the criteria in Appendix 2 to OPS 1.550 (a).

(b) When showing compliance with sub-paragraph (a) above, an operator shall take account of the following:

1. The altitude at the aerodrome;

2. Not more than 50 % of the head-wind component or not less than 150 % of the tail-wind component.

3. The runway surface condition and the type of runway surface; and

4. The runway slope in the direction of landing;

(c) For despatching an aeroplane in accordance with sub-paragraph (a) above, it must be assumed that:

1. The aeroplane will land on the most favourable runway, in still air; and

2. The aeroplane will land on the runway most likely to be assigned considering the probable wind speed and direction and the ground handling characteristics of the aeroplane, and considering other conditions such as landing aids and terrain.

(d) If an operator is unable to comply with sub-paragraph (c) 2 above for the destination aerodrome, the aeroplane may be despatched if an alternate aerodrome is designated which permits full compliance with sub-paragraphs (a), (b) and (c) above.

OPS 1.555

Landing — Wet and Contaminated Runways

(a) An operator shall ensure that when the appropriate weather reports or forecasts, or a combination thereof, indicate that the runway at the estimated time of arrival may be wet, the landing distance available is equal to or exceeds the required landing distance, determined in accordance with OPS 1.550, multiplied by a factor of 1,15.

(b) An operator shall ensure that when the appropriate weather reports or forecasts, or a combination thereof, indicate that the runway at the estimated time of arrival may be contaminated, the landing distance, determined by using data acceptable to the Authority for these conditions, does not exceed the landing distance available.

(c) A landing distance on a wet runway shorter than that required by sub-paragraph (a) above, but not less than that required by OPS 1.550 (a), may be used if the Aeroplane Flight Manual includes specific additional information about landing distances on wet runways.

Appendix 1 to OPS 1.525 (b)

General — Take-off and Landing Climb

The requirements of this Appendix are based on JAR-23.63 (c) 1 and JAR-23.63 (c) 2, effective 11 March 1994.

(a) *Take-off Climb*

1. All Engines Operating

The steady gradient of climb after take-off must be at least 4% with:

(A) Take-off power on each engine;

(B) The landing gear extended except that if the landing gear can be retracted in not more than 7 seconds, it may be assumed to be retracted;

(C) The wing flaps in the take-off position(s); and

(D) A climb speed not less than the greater of 1,1 V_{MC} and 1,2 V_{S1}.

2. One Engine Inoperative

(i) The steady gradient of climb at an altitude of 400 ft above the take-off surface must be measurably positive with:

(A) The critical engine inoperative and its propeller in the minimum drag position;

(B) The remaining engine at take-off power;

(C) The landing gear retracted;

(D) The wing flaps in the take-off position(s); and

(E) A climb speed equal to that achieved at 50 ft.

(ii) The steady gradient of climb must be not less than 0, 75 % at an altitude of 1 500 ft above the take-off surface with:

(A) The critical engine inoperative and its propeller in the minimum drag position;

(B) The remaining engine at not more than maximum continuous power;

(C) The landing gear retracted;

(D) The wing flaps retracted; and

(E) A climb speed not less than 1,2 V_{S1}.

(b) *Landing Climb*

1. All Engines Operating

The steady gradient of climb must be at least 2,5 % with:

(A) Not more than the power or thrust that is available 8 seconds after initiation of movement of the power controls from the minimum flight idle position;

(B) The landing gear extended;

(C) The wing flaps in the landing position; and

(D) A climb speed equal to V_{REF}.

2. One engine Inoperative

The steady gradient of climb must be not less than 0,75 % at an altitude of 1 500 ft above the landing surface with:

(A) The critical engine inoperative and its propeller in the minimum drag position;

(B) The remaining engine at not more than maximum continuous power;

(C) The landing gear retracted;

(D) The wing flaps retracted; and

(E) A climb speed not less than 1,2 V_{S1}.

Appendix 1 to OPS 1.535 (b) 1 & (c) 1

Take-off Flight Path — Visual Course Guidance Navigation

In order to allow visual course guidance navigation, an operator must ensure that the weather conditions prevailing at the time of operation including ceiling and visibility, are such that the obstacle and/or ground reference points can be seen and identified. The Operations Manual must specify, for the aerodrome(s) concerned, the minimum weather conditions which enable the flight crew to continuously determine and maintain the correct flight path with respect to ground reference points, so as to provide a safe clearance with respect to obstructions and terrain as follows:

(a) The procedure must be well defined with respect to ground reference points so that the track to be flown can be analysed for obstacle clearance requirements;

(b) The procedure must be within the capabilities of the aeroplane with respect to forward speed, bank angle and wind effects;

(c) A written and/or pictorial description of the procedure must be provided for crew use; and

(d) The limiting environmental conditions must be specified (e.g. wind, cloud, visibility, day/night, ambient lighting, obstruction lighting).

Appendix 1 to OPS 1.550 (a)

Steep Approach Procedures

The Authority may approve the application of Steep Approach procedures using glideslope angles of 4,5° or more, and with screen heights of less than 50 ft but not less than 35 ft, provided that the following criteria are met:

1. The Aeroplane Flight Manual must state the maximum approved glideslope angle, any other limitations, normal, abnormal or emergency procedures for the steep approach as well as amendments to the field length data when using steep approach criteria;

2. A suitable glidepath reference system, comprising at least a visual glidepath indicating system, must be available at each aerodrome at which steep approach procedures are to be conducted; and

3. Weather minima must be specified and approved for each runway to be used with a steep approach. Consideration must be given to the following:

   (i) The obstacle situation;

   (ii) The type of glidepath reference and runway guidance such as visual aids, MLS, 3D-NAV, ILS, LLZ, VOR, NDB;

   (iii) The minimum visual reference to be required at DH and MDA;

   (iv) Available airborne equipment;

   (v) Pilot qualification and special aerodrome familiarisation;

   (vi) Aeroplane Flight Manual limitations and procedures; and

   (vii) Missed approach criteria.

Appendix 2 to OPS 1.550 (a)

Short Landing Operations

For the purpose of OPS 1.550 (a) 2, the distance used for the calculation of the permitted landing mass may consist of the usable length of the declared safe area plus the declared landing distance available. The Authority may approve such operations in accordance with the following criteria:

1. The use of the declared safe area must be approved by the aerodrome Authority;

2. The declared safe area must be clear of obstructions or depressions which would endanger an aeroplane undershooting the runway, and no mobile object shall be permitted on the declared safe area while the runway is being used for short landing operations;

3. The slope of the declared safe area must not exceed 5 % upward slope nor 2 % downward slope in the direction of landing;

4. The useable length of the declared safe area under the provisions of this Appendix shall not exceed 90 metres;

5. The width of the declared safe area shall not be less than twice the runway width, centred on the extended runway centreline;

6. It is assumed that the crossing height over the beginning of the usable length of the declared safe area shall not be less than 50 ft.

7. For the purpose of this operation, the bearing strength requirement of OPS 1.480 (a) 5 need not apply to the declared safe area.

8. Weather minima must be specified and approved for each runway to be used and shall not be less than the greater of VFR or non-precision approach minima;

9. Pilot requirements must be specified (OPS 1.975 (a) refers);

10. The Authority may impose such additional conditions as are necessary for safe operation taking into account the aeroplane type characteristics, approach aids and missed approach/baulked landing considerations.

SUBPART I

PERFORMANCE CLASS C

OPS 1.560

General

An operator shall ensure that, for determining compliance with the requirements of this Subpart, the approved performance Data in the Aeroplane Flight Manual is supplemented, as necessary, with other Data acceptable to the Authority if the approved performance Data in the Aeroplane Flight Manual is insufficient.

OPS 1.565

Take-off

(a) An operator shall ensure that the take-off mass does not exceed the maximum take-off mass specified in the Aeroplane Flight Manual for the pressure altitude and the ambient temperature at the aerodrome at which the take-off is to be made.

(b) An operator shall ensure that, for aeroplanes which have take-off field length data contained in their Aeroplane Flight Manuals that do not include engine failure accountability, the distance from the start of the take-off roll required by the aeroplane to reach a height of 50 ft above the surface with all engines operating within the maximum take-off power conditions specified, when multiplied by a factor of either:

1. 1,33 for aeroplanes having two engines; or

2. 1,25 for aeroplanes having three engines; or

3. 1,18 for aeroplanes having four engines,

does not exceed the take-off run available at the aerodrome at which the take-off is to be made.

(c) An operator shall ensure that, for aeroplanes which have take-off field length data contained in their Aeroplane Flight Manuals which accounts for engine failure, the following requirements are met in accordance with the specifications in the Aeroplane Flight Manual:

1. The accelerate-stop distance must not exceed the accelerate-stop distance available;

2. The take-off distance must not exceed the take-off distance available, with a clearway distance not exceeding half of the take-off run available;

3. The take-off run must not exceed the take-off run available;

4. Compliance with this paragraph must be shown using a single value of V_1 for the rejected and continued take-of; and

5. On a wet or contaminated runway the take-off mass must not exceed that permitted for a take-off on a dry runway under the same conditions.

(d) When showing compliance with sub-paragraphs (b) and (c) above, an operator must take account of the following:

1. The pressure altitude at the aerodrome;

2. The ambient temperature at the aerodrome;

3. The runway surface condition and the type of runway surface;

4. The runway slope in the direction of take-off;

5. Not more than 50 % of the reported head-wind component or not less than 150 % of the reported tail-wind component; and

6. The loss, if any, of runway length due to alignment of the aeroplane prior to take-off.

OPS 1.570

Take-off Obstacle Clearance

(a) An operator shall ensure that the take-off flight path with one engine inoperative clears all obstacles by a vertical distance of at least 50 ft plus 0,01 × D, or by a horizontal distance of at least 90 m plus 0,125 × D, where D is the horizontal distance the aeroplane has travelled from the end of the take-off distance available. For aeroplanes with a wingspan of less than 60 m a horizontal obstacle clearance of half the aeroplane wingspan plus 60 m, plus 0,125 × D may be used.

(b) The take-off flight path must begin at a height of 50 ft above the surface at the end of the take-off distance required by OPS 1.565 (b) or (c) as applicable, and end at a height of 1 500 ft above the surface.

(c) When showing compliance with sub-paragraph (a), an operator must take account of the following:

1. The mass of the aeroplane at the commencement of the take-off run;

2. The pressure altitude at the aerodrome;

3. The ambient temperature at the aerodrome; and

4. Not more than 50 % of the reported head-wind component or not less than 150 % of the reported tail-wind component.

(d) When showing compliance with sub-paragraph (a) above, track changes shall not be allowed up to that point of the take-off flight path where a height of 50 ft above the surface has been achieved. Thereafter, up to a height of 400 ft it is assumed that the aeroplane is banked by no more than 15°. Above 400 ft height bank angles greater than 15°, but not more than 25° may be scheduled. Adequate allowance must be made for the effect of bank angle on operating speeds and flight path including the distance increments resulting from increased operating speeds.

(e) When showing compliance with sub-paragraph (a) above for those cases which do not require track changes of more than 15°, an operator need not consider those obstacles which have a lateral distance greater than:

1. 300 m, if the pilot is able to maintain the required navigational accuracy through the obstacle accountability area; or

2. 600 m for flights under all other conditions.

(f) When showing compliance with sub-paragraph (a) above for those cases which do require track changes of more than 15°, an operator need not consider those obstacles which have a lateral distance greater than:

1. 600 m, if the pilot is able to maintain the required navigational accuracy through the obstacle accountability area; or

2. 900 m for flights under all other conditions.

(g) An operator shall establish contingency procedures to satisfy the requirements of OPS 1.570 and to provide a safe route, avoiding obstacles, to enable the aeroplane to either comply with the en-route requirements of OPS 1.580, or land at either the aerodrome of departure or at a take-off alternate aerodrome.

OPS 1.575

En-Route — All Engines Operating

An operator shall ensure that the aeroplane will, in the meteorological conditions expected for the flight, at any point on its route or on any planned diversion therefrom, be capable of a rate of climb of at least 300 ft per minute with all engines operating within the maximum continuous power conditions specified at:

1. The minimum altitudes for safe flight on each stage of the route to be flown or of any planned diversion therefrom specified in, or calculated from the information contained in, the Operations Manual relating to the aeroplane; and

2. The minimum altitudes necessary for compliance with the conditions prescribed in OPS 1.580 and 1.585, as appropriate.

OPS 1.580

En-Route — One Engine Inoperative

(a) An operator shall ensure that the aeroplane will, in the meteorological conditions expected for the flight, in the event of any one engine becoming inoperative at any point on its route or on any planned diversion therefrom and with the other engine or engines operating within the maximum continuous power conditions specified, be capable of continuing the flight from the cruising altitude to an aerodrome where a landing can be made in accordance with OPS 1.595 or OPS 1.600 as appropriate, clearing obstacles within 9,3 km (5 nm) either side of the intended track by a vertical interval of at least:

1. 1 000 ft when the rate of climb is zero or greater; or

2. 2 000 ft when the rate of climb is less than zero.

(b) The flight path shall have a positive slope at an altitude of 450 m (1 500 ft) above the aerodrome where the landing is assumed to be made after the failure of one engine.

(c) For the purpose of this sub-paragraph the available rate of climb of the aeroplane shall be taken to be 150 ft per minute less than the gross rate of climb specified.

(d) When showing compliance with this paragraph, an operator must increase the width margins of sub-paragraph (a) above to 18,5 km (10 nm) if the navigational accuracy does not meet the 95 % containment level.

(e) Fuel jettisoning is permitted to an extent consistent with reaching the aerodrome with the required fuel reserves, if a safe procedure is used.

OPS 1.585

En-Route — Aeroplanes With Three Or More Engines, Two Engines Inoperative

(a) An operator shall ensure that, at no point along the intended track, will an aeroplane having three or more engines be more than 90 minutes at the all-engine long range cruising speed at standard temperature in still air, away from an aerodrome at which the performance requirements applicable at the expected landing mass are met unless it complies with sub-paragraphs (b) to (e) below.

(b) The two-engines inoperative flight path shown must permit the aeroplane to continue the flight, in the expected meteorological conditions, clearing all obstacles within 9,3 km (5 nm) either side of the intended track by a vertical interval of at least 2 000 ft, to an aerodrome at which the performance requirements applicable at the expected landing mass are met.

(c) The two engines are assumed to fail at the most critical point of that portion of the route where the aeroplane is more than 90 minutes, at the all engines long range cruising speed at standard temperature in still air, away from an aerodrome at which the performance requirements applicable at the expected landing mass are met.

(d) The expected mass of the aeroplane at the point where the two engines are assumed to fail must not be less than that which would include sufficient fuel to proceed to an aerodrome where the landing is assumed to be made, and to arrive there at an altitude of a least 450 m (1 500 ft) directly over the landing area and thereafter to fly level for 15 minutes.

(e) For the purpose of this sub-paragraph the available rate of climb of the aeroplane shall be taken to be 150 ft per minute less than that specified.

(f) When showing compliance with this paragraph, an operator must increase the width margins of sub-paragraph (a) above to 18,5 km (10 nm) if the navigational accuracy does not meet the 95 % containment level.

(g) Fuel jettisoning is permitted to an extent consistent with reaching the aerodrome with the required fuel reserves, if a safe procedure is used.

OPS 1.590

Landing — Destination and Alternate Aerodromes

An operator shall ensure that the landing mass of the aeroplane determined in accordance with OPS 1.475 (a) does not exceed the maximum landing mass specified in the Aeroplane Flight Manual for the altitude and, if accounted for in the Aeroplane Flight Manual, the ambient temperature expected for the estimated time of landing at the destination and alternate aerodrome.

OPS 1.595

Landing Dry Runways

(a) An operator shall ensure that the landing mass of the aeroplane determined in accordance with OPS 1.475 (a) for the estimated time of landing allows a full stop landing from 50 ft above the threshold within 70 % of the landing distance available at the destination and any alternate aerodrome.

(b) When showing compliance with sub-paragraph (a) above, an operator must take account of the following:

1. The altitude at the aerodrome;

2. Not more than 50 % of the head-wind component or not less than 150 % of the tail-wind component;

3. The type of runway surface; and

4. The slope of the runway in the direction of landing.

(c) For despatching an aeroplane in accordance with sub-paragraph (a) above it must be assumed that:

1. The aeroplane will land on the most favourable runway in still air; and

2. The aeroplane will land on the runway most likely to be assigned considering the probable wind speed and direction and the ground handling characteristics of the aeroplane, and considering other conditions such as landing aids and terrain.

(d) If an operator is unable to comply with sub-paragraph (b) 2 above for the destination aerodrome, the aeroplane may be despatched if an alternate aerodrome is designated which permits full compliance with sub-paragraphs (a), (b) and (c).

OPS 1.600

Landing — Wet and Contaminated Runways

(a) An operator shall ensure that when the appropriate weather reports or forecasts, or a combination thereof, indicate that the runway at the estimated time of arrival may be wet, the landing distance available is equal to or exceeds the required landing distance, determined in accordance with OPS 1.595, multiplied by a factor of 1,15.

(b) An operator shall ensure that when the appropriate weather reports or forecasts, or a combination thereof, indicate that the runway at the estimated time of arrival may be contaminated, the landing distance determined by using data acceptable to the Authority for these conditions, does not exceed the landing distance available.

SUBPART J

MASS AND BALANCE

OPS 1.605

General

(See Appendix 1 to OPS 1.605)

(a) An operator shall ensure that during any phase of operation, the loading, mass and centre of gravity of the aeroplane complies with the limitations specified in the approved Aeroplane Flight Manual, or the Operations Manual if more restrictive.

(b) An operator must establish the mass and the centre of gravity of any aeroplane by actual weighing prior to initial entry into service and thereafter at intervals of 4 years if individual aeroplane masses are used and 9 years if fleet masses are used. The accumulated effects of modifications and repairs on the mass and balance must be accounted for and properly documented. Furthermore, aeroplanes must be reweighed if the effect of modifications on the mass and balance is not accurately known.

(c) An operator must determine the mass of all operating items and crew members included in the aeroplane dry operating mass by weighing or by using standard masses. The influence of their position on the aeroplane centre of gravity must be determined.

(d) An operator must establish the mass of the traffic load, including any ballast, by actual weighing or determine the mass of the traffic load in accordance with standard passenger and baggage masses as specified in OPS 1.620.

(e) An operator must determine the mass of the fuel load by using the actual density or, if not known, the density calculated in accordance with a method specified in the Operations Manual.

OPS 1.607

Terminology

(a) *Dry Operating Mass*

The total mass of the aeroplane ready for a specific type of operation excluding all usable fuel and traffic load. This mass includes items such as:

1. Crew and crew baggage;

2. Catering and removable passenger service equipment; and

3. Potable water and lavatory chemicals.

(b) *Maximum Zero Fuel Mass*

The maximum permissible mass of an aeroplane with no usable fuel. The mass of the fuel contained in particular tanks must be included in the zero fuel mass when it is explicitly mentioned in the Aeroplane Flight Manual limitations.

(c) *Maximum Structural Landing Mass*

The maximum permissible total aeroplane mass upon landing under normal circumstances.

(d) *Maximum Structural Take Off Mass*

The maximum permissible total aeroplane mass at the start of the take-off run.

(e) *Passenger classification*

1. Adults, male and female, are defined as persons of an age of 12 years and above.

2. Children are defined as persons who are of an age of two years and above but who are less than 12 years of age.

3. Infants are defined as persons who are less than 2 years of age.

(f) *Traffic Load*

The total mass of passengers, baggage and cargo, including any non-revenue load.

OPS 1.610

Loading, mass and balance

An operator shall specify, in the Operations Manual, the principles and methods involved in the loading and in the mass and balance system that meet the requirements of OPS 1.605. This system must cover all types of intended operations.

OPS 1.615

Mass values for crew

(a) An operator shall use the following mass values to determine the dry operating mass:

1. Actual masses including any crew baggage; or

2. Standard masses, including hand baggage, of 85 kg for flight crew members and 75 kg for cabin crew members; or

3. Other standard masses acceptable to the Authority.

(b) An operator must correct the dry operating mass to account for any additional baggage. The position of this additional baggage must be accounted for when establishing the centre of gravity of the aeroplane.

OPS 1.620

Mass values for passengers and baggage

(a) An operator shall compute the mass of passengers and checked baggage using either the actual weighed mass of each person and the actual weighed mass of baggage or the standard mass values specified in Tables 1 to 3 below except where the number of passenger seats available is less than 10. In such cases passenger mass may be established by use of a verbal statement by, or on behalf of, each passenger and adding to it a predetermined constant to account for hand baggage and clothing (The procedure specifying when to select actual or standard masses and the procedure to be followed when using verbal statements must be included in the Operations Manual.

(b) If determining the actual mass by weighing, an operator must ensure that passengers' personal belongings and hand baggage are included. Such weighing must be conducted immediately prior to boarding and at an adjacent location.

(c) If determining the mass of passengers using standard mass values, the standard mass values in Tables 1 and 2 below must be used. The standard masses include hand baggage and the mass of any infant below 2 years of age carried by an adult on one passenger seat. Infants occupying separate passenger seats must be considered as children for the purpose of this sub-paragraph.

(d) *Mass values for passengers — 20 seats or more*

1. Where the total number of passenger seats available on an aeroplane is 20 or more, the standard masses of male and female in Table 1 are applicable. As an alternative, in cases where the total number of passenger seats available is 30 or more, the "All Adult" mass values in Table 1 are applicable.

2. For the purpose of Table 1, holiday charter means a charter flight solely intended as an element of a holiday travel package. The holiday charter mass values apply provided that not more than 5 % of passenger seats installed in the aeroplane are used for the non-revenue carriage of certain categories of passengers

Table 1

Passenger seats	20 and more		30 and more
	Male	Female	All adult
All flights except holiday	88 kg	70 kg	84 kg
Holiday charters	83 kg	69 kg	76 kg
Children	35 kg	35 kg	35 kg

(e) *Mass values for passengers — 19 seats or less.*

1. Where the total number of passenger seats available on an aeroplane is 19 or less, the standard masses in Table 2 are applicable.

2. On flights where no hand baggage is carried in the cabin or where hand baggage is accounted for separately, 6 kg may be deducted from the above male and female masses. Articles such as an overcoat, an umbrella, a small handbag or purse, reading material or a small camera are not considered as hand baggage for the purpose of this sub-paragraph.

Table 2

Passenger seats	1—5	6—9	10—19
Male	104 kg	96 kg	92 kg
Female	86 kg	78 kg	74 kg
Children	35 kg	35 kg	35 kg

(f) *Mass values for baggage*

1. Where the total number of passenger seats available on the aeroplane is 20 or more the standard mass values given in Table 3 are applicable for each piece of checked baggage. For aeroplanes with 19 passenger seats or less, the actual mass of checked baggage, determined by weighing, must be used.

2. For the purpose of Table 3

(i) Domestic flight means a flight with origin and destination within the borders of one State;

(ii) Flights within the European region means flights, other than Domestic flights, whose origin and destination are within the area specified in Appendix 1 to OPS 1.620 (f); and

(iii) Intercontinental flight, other than flights within the European region, means a flight with origin and destination in different continents.

Table 3

20 or more seats

Type of flight	Baggage standard mass
Domestic	11 kg
Within the European region	13 kg
Intercontinental	15 kg
All other	13 kg

(g) If an operator wishes to use standard mass values other than those contained in Tables 1 to 3 above, he must advise the Authority of his reasons and gain its approval in advance. He must also submit for approval a detailed weighing survey plan and apply the statistical analysis method given in Appendix 1 to OPS 1.620 (g). After verification and approval by the Authority of the results of the weighing survey, the revised standard mass values are only applicable to that operator. The revised standard mass values can only be used in circumstances consistent with those under which the survey was conducted. Where revised standard masses exceed those in Tables 1-3, then such higher values must be used.

(h) On any flight identified as carrying a significant number of passengers whose masses, including hand baggage, are expected to exceed the standard passenger mass, an operator must determine the actual mass of such passengers by weighing or by adding an adequate mass increment.

(i) If standard mass values for checked baggage are used and a significant number of passengers check in baggage that is expected to exceed the standard baggage mass, an operator must determine the actual mass of such baggage by weighing or by adding an adequate mass increment.

(j) An operator shall ensure that a commander is advised when a non-standard method has been used for determining the mass of the load and that this method is stated in the mass and balance documentation.

OPS 1.625

Mass and balance documentation

(See Appendix 1 to OPS 1.625)

(a) An operator shall establish mass and balance documentation prior to each flight specifying the load and its distribution. The mass and balance documentation must enable the commander to determine that the load and its distribution is such that the mass and balance limits of the aeroplane are not exceeded. The person preparing the mass and balance documentation must be named on the document. The person supervising the loading of the aeroplane must confirm by signature that the load and its distribution are in accordance with the mass and balance documentation. This document must be acceptable to the commander, his acceptance being indicated by countersignature or equivalent. (See also OPS 1.1055 (a) 12).

(b) An operator must specify procedures for Last Minute Changes to the load.

(c) Subject to the approval of the Authority, an operator may use an alternative to the procedures required by paragraphs (a) and (b) above.

Appendix 1 to OPS 1.605

Mass and Balance General

(a) *Determination of the dry operating mass of an aeroplane*

1. Weighing of an aeroplane

(i) New aeroplanes are normally weighed at the factory and are eligible to be placed into operation without reweighing if the mass and balance records have been adjusted for alterations or modifications to the aeroplane. Aeroplanes transferred from one operator with an approved mass control programme to another operator with an approved programme need not be weighed prior to use by the receiving operator unless more than 4 years have elapsed since the last weighing.

(ii) The individual mass and centre of gravity (CG) position of each aeroplane shall be re-established periodically. The maximum interval between two weighings must be defined by the operator and must meet the requirements of OPS 1.605 (b). In addition, the mass and the CG of each aeroplane shall be re-established either by:

(A) Weighing; or

(B) Calculation, if the operator is able to provide the necessary justification to prove the validity of the method of calculation chosen,

whenever the cumulative changes to the dry operating mass exceed ± 0,5 % of the maximum landing mass or the cumulative change in CG position exceeds 0,5 % of the mean aerodynamic chord.

2. Fleet mass and CG position

(i) For a fleet or group of aeroplanes of the same model and configuration, an average dry operating mass and CG position may be used as the fleet mass and CG position, provided that the dry operating masses and CG positions of the individual aeroplanes meet the tolerances specified in sub-paragraph (ii) below. Furthermore, the criteria specified in sub-paragraphs (iii), (iv) and (a) 3 below are applicable.

(ii) Tolerances

(A) If the dry operating mass of any aeroplane weighed, or the calculated dry operating mass of any aeroplane of a fleet, varies by more than ± 0,5% of the maximum structural landing mass from the established dry operating fleet mass or the CG position varies by more than ± 0,5 % of the mean aero-dynamic chord from the fleet CG, that aeroplane shall be omitted from that fleet. Separate fleets may be established, each with differing fleet mean masses.

(B) In cases where the aeroplane mass is within the dry operating fleet mass tolerance but its CG position falls outside the permitted fleet tolerance, the aeroplane may still be operated under the applicable dry operating fleet mass but with an individual CG position.

(C) If an individual aeroplane has, when compared with other aeroplanes of the fleet, a physical, accurately accountable difference (e.g. galley or seat configuration), that causes exceedance of the fleet tolerances, this aeroplane may be maintained in the fleet provided that appropriate corrections are applied to the mass and/or CG position for that aeroplane.

(D) Aeroplanes for which no mean aerodynamic chord has been published must be operated with their individual mass and CG position values or must be subjected to a special study and approval.

(iii) Use of fleet values

(A) After the weighing of an aeroplane, or if any change occurs in the aeroplane equipment or configuration, the operator must verify that this aeroplane falls within the tolerances specified in sub-paragraph 2 (ii) above.

(B) Aeroplanes which have not been weighed since the last fleet mass evaluation can still be kept in a fleet operated with fleet values, provided that the individual values are revised by computation and stay within the tolerances defined in sub-paragraph 2 (ii) above. If these individual values no longer fall within the permitted tolerances, the operator must either determine new fleet values fulfilling the conditions of sub-paragraphs 2 (i) and 2 (ii) above, or operate the aeroplanes not falling within the limits with their individual values.

(C) To add an aeroplane to a fleet operated with fleet values, the operator must verify by weighing or computation that its actual values fall within the tolerances specified in sub-paragraph 2 (ii) above.

(iv) To comply with sub-paragraph 2 (i) above, the fleet values must be updated at least at the end of each fleet mass evaluation.

3. Number of aeroplanes to be weighed to obtain fleet values

(i) If "n" is the number of aeroplanes in the fleet using fleet values, the operator must at least weigh, in the period between two fleet mass evaluations, a certain number of aeroplanes defined in the Table below:

Number of aeroplanes in the fleet	Minimum number of weighings
2 or 3	n
4 to 9	(n + 3)/2
10 or more	(n + 51)/10

(ii) In choosing the aeroplanes to be weighed, aeroplanes in the fleet which have not been weighed for the longest time should be selected.

(iii) The interval between 2 fleet mass evaluations must not exceed 48 months.

4. Weighing procedure

(i) The weighing must be accomplished either by the manufacturer or by an approved maintenance organisation.

(ii) Normal precautions must be taken consistent with good practices such as:

(A) Checking for completeness of the aeroplane and equipment;

(B) Determining that fluids are properly accounted for;

(C) Ensuring that the aeroplane is clean; and

(D) Ensuring that weighing is accomplished in an enclosed building.

(iii) Any equipment used for weighing must be properly calibrated, zeroed, and used in accordance with the manufacturer's instructions. Each scale must be calibrated either by the manufacturer, by a civil department of weights and measures or by an appropriately authorised organisation within 2 years or within a time period defined by the manufacturer of the weighing equipment, whichever is less. The equipment must enable the mass of the aeroplane to be established accurately (see Appendix 1 to OPS 1.605, paragraph (a) 4 (iii)).

(b) *Special standard masses for the traffic load*

In addition to standard masses for passengers and checked baggage, an operator can submit for approval to the Authority standard masses for other load items.

(c) *Aeroplane loading*

1. An operator must ensure that the loading of its aeroplanes is performed under the supervision of qualified personnel.

2. An operator must ensure that the loading of the freight is consistent with the data used for the calculation of the aeroplane mass and balance.

3. An operator must comply with additional structural limits such as the floor strength limitations, the maximum load per running metre, the maximum mass per cargo compartment, and/or the maximum seating limits.

(d) *Centre of gravity limits*

1. Operational CG envelope

Unless seat allocation is applied and the effects of the number of passengers per seat row, of cargo in individual cargo compartments and of fuel in individual tanks is accounted for accurately in the balance calculation, operational margins must be applied to the certificated centre of gravity envelope. In determining the CG margins, possible deviations from the assumed load distribution must be considered. If free seating is applied, the operator must introduce procedures to ensure corrective action by flight or cabin crew if extreme longitudinal seat selection occurs. The CG margins and associated operational procedures, including assumptions with regard to passenger seating, must be acceptable to the Authority.

2. In-flight centre of gravity

Further to sub-paragraph (d) 1 above, the operator must show that the procedures fully account for the extreme variation in CG travel during flight caused by passenger/crew movement and fuel consumption/transfer.

Appendix 1 to OPS 1.620 (f)

Definition of the area for flights within the European region

For the purposes of OPS 1.620 (f), flights within the European region, other than domestic flights, are flights conducted within the area bounded by rhumb lines between the following points:

— N7200 E04500

— N4000 E04500

— N3500 E03700

— N3000 E03700

— N3000 W00600

— N2700 W00900

— N2700 W03000

— N6700 W03000

— N7200 W01000

— N7200 E04500

as depicted in Figure 1 below:

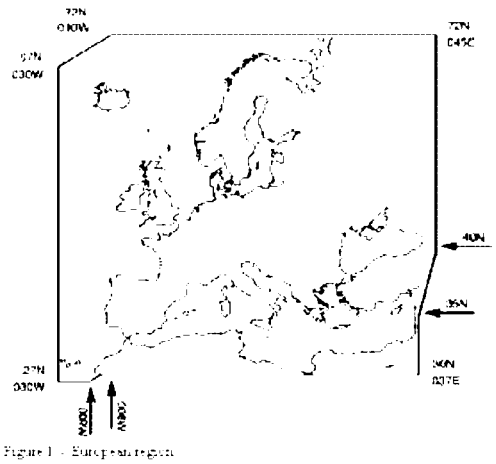


Figure 1

European region

Appendix 1 to OPS 1.620 (g)

Procedure for establishing revised standard mass values for passengers and baggage

(a) *Passengers*

1. Weight sampling method

The average mass of passengers and their hand baggage must be determined by weighing, taking random samples. The selection of random samples must by nature and extent be representative of the passenger volume, considering the type of operation, the frequency of flights on various routes, in/outbound flights, applicable season and seat capacity of the aeroplane.

2. Sample size

The survey plan must cover the weighing of at least the greatest of:

(i) A number of passengers calculated from a pilot sample, using normal statistical procedures and based on a relative confidence range (accuracy) of 1 % for all adult and 2 % for separate male and female average masses; and

(ii) For aeroplanes:

(A) With a passenger seating capacity of 40 or more, a total of 2 000 passengers; or

(B) With a passenger seating capacity of less than 40, a total number of 50 x (the passenger seating capacity).

3. Passenger masses

Passenger masses must include the mass of the passengers' belongings which are carried when entering the aeroplane. When taking random samples of passenger masses, infants shall be weighted together with the accompanying adult (See also OPS 1620 (c) (d) and (e).

4. Weighing location

The location for the weighing of passengers shall be selected as close as possible to the aeroplane, at a point where a change in the passenger mass by disposing of or by acquiring more personal belongings is unlikely to occur before the passengers board the aeroplane.

5. Weighing machine

The weighing machine to be used for passenger weighing shall have a capacity of at least 150 kg. The mass shall be displayed at minimum graduations of 500 g. The weighing machine must be accurate to within 0,5 % or 200 g whichever is the greater.

6. Recording of mass values

For each flight the mass of the passengers, the corresponding passenger category (i.e. male/female/children) and the flight number must be recorded.

(b) *Checked baggage*

The statistical procedure for determining revised standard baggage mass values based on average baggage masses of the minimum required sample size is basically the same as for passengers and as specified in sub-paragraph (a) 1. For baggage, the relative confidence range (accuracy) amounts to 1 %. A minimum of 2 000 pieces of checked baggage must be weighed.

(c) *Determination of revised standard mass values for passengers and checked baggage*

1. To ensure that, in preference to the use of actual masses determined by weighing, the use of revised standard mass values for passengers and checked baggage does not adversely affect operational safety, a statistical analysis must be carried out. Such an analysis will generate average mass values for passengers and baggage as well as other data.

2. On aeroplanes with 20 or more passenger seats, these averages apply as revised standard male and female mass values.

3. On smaller aeroplanes, the following increments must be added to the average passenger mass to obtain the revised standard mass values:

Number of passenger seats	Required mass increment
1—5 incl.	16 kg
6—9 incl.	8 kg
10—19 incl.	4 kg

Alternatively, all adult revised standard (average) mass values may be applied on aeroplanes with 30 or more passenger seats. Revised standard (average) checked baggage mass values are applicable to aeroplanes with 20 or more passenger seats.

4. Operators have the option to submit a detailed survey plan to the Authority for approval and subsequently a deviation from the revised standard mass value provided this deviating value is determined by use of the procedure explained in this Appendix. Such deviations must be reviewed at intervals not exceeding 5 years.

5. All adult revised standard mass values must be based on a male/female ratio of 80/20 in respect of all flights except holiday charters which are 50/50. If an operator wishes to obtain approval for use of a different ratio on specific routes or flights then data must be submitted to the Authority showing that the alternative male/female ratio is conservative and covers at least 84% of the actual male/female ratios on a sample of at least 100 representative flights.

6. The average mass values found are rounded to the nearest whole number in kg. Checked baggage mass values are rounded to the nearest 0,5 kg figure, as appropriate.

Appendix 1 to OPS 1.625

Mass and Balance Documentation

(a) *Mass and balance documentation*

1. Contents

(i) The mass and balance documentation must contain the following information:

(A) The aeroplane registration and type;

(B) The flight identification number and date;

(C) The identity of the Commander;

(D) The identity of the person who prepared the document;

(E) The dry operating mass and the corresponding CG of the aeroplane;

(F) The mass of the fuel at take-off and the mass of trip fuel;

(G) The mass of consumables other than fuel;

(H) The components of the load including passengers, baggage, freight and ballast;

(I) The Take-off Mass, Landing Mass and Zero Fuel Mass;

(J) The load distribution;

(K) The applicable aeroplane CG positions; and

(L) The limiting mass and CG values.

(ii) Subject to the approval of the Authority, an operator may omit some of this Data from the mass and balance documentation.

2. Last Minute Change

If any last minute change occurs after the completion of the mass and balance documentation, this must be brought to the attention of the commander and the last minute change must be entered on the mass and balance documentation. The maximum allowed change in the number of passengers or hold load acceptable as a last minute change must be specified in the Operations Manual. If this number is exceeded, new mass and balance documentation must be prepared.

(b) *Computerised systems*

Where mass and balance documentation is generated by a computerised mass and balance system, the operator must verify the integrity of the output data. He must establish a system to check that amendments of his input data are incorporated properly in the system and that the system is operating correctly on a continuous basis by verifying the output data at intervals not exceeding 6 months.

(c) *Onboard mass and balance systems*

An operator must obtain the approval of the Authority if he wishes to use an onboard mass and balance computer system as a primary source for despatch.

(d) *Datalink*

When mass and balance documentation is sent to aeroplanes via datalink, a copy of the final mass and balance documentation as accepted by the commander must be available on the ground.

SUBPART K

INSTRUMENTS AND EQUIPMENT

OPS 1.630

General introduction

(a) An operator shall ensure that a flight does not commence unless the instruments and equipment required under this Subpart are:

1. Approved, except as specified in sub-paragraph (c), and installed in accordance with the requirements applicable to them, including the minimum performance standard and the operational and airworthiness requirements; and

2. In operable condition for the kind of operation being conducted except as provided in the MEL (OPS 1.030 refers).

(b) Instruments and equipment minimum performance standards are those prescribed in the applicable Joint Technical Standard Orders (JTSO) as listed in JAR-TSO, unless different performance standards are prescribed in the operational or airworthiness codes. Instruments and equipment complying with design and performance specifications other than JTSO on the date of OPS implementation may remain in service, or be installed, unless additional requirements are prescribed in this Subpart. Instruments and equipment that have already been approved do not need to comply with a revised JTSO or a revised specification, other than JTSO, unless a retroactive requirement is prescribed.

(c) The following items shall not be required to have an equipment approval:

1. Fuses referred to in OPS 1.635;

2. Electric torches referred to in OPS 1.640 (a) 4;

3. An accurate time piece referred to in OPS 1.650 (b) & 1.652 (b);

4. Chart holder referred to in OPS 1.652 (n).

5. First-aid kits referred to in OPS 1.745;

6. Emergency medical kit referred to in OPS 1.755;

7. Megaphones referred to in OPS 1.810;

8. Survival and pyrotechnic signalling equipment referred to in OPS 1.835 (a) and (c); and

9. Sea anchors and equipment for mooring, anchoring or manoeuvring seaplanes and amphibians on water referred to in OPS 1.840.

(d) If equipment is to be used by one flight crew member at his station during flight, it must be readily operable from his station. When a single item of equipment is required to be operated by more than one flight crew member it must be installed so that the equipment is readily operable from any station at which the equipment is required to be operated.

(e) Those instruments that are used by any one flight crew member shall be so arranged as to permit the flight crew member to see the indications readily from his station, with the minimum practicable deviation from the position and line of vision which he normally assumes when looking forward along the flight path. Whenever a single instrument is required in an aeroplane operated by more than 1 flight crew member it must be installed so that the instrument is visible from each applicable flight crew station.

OPS 1.635

Circuit protection devices

An operator shall not operate an aeroplane in which fuses are used unless there are spare fuses available for use in flight equal to at least 10% of the number of fuses of each rating or three of each rating whichever is the greater.

OPS 1.640

Aeroplane operating lights

An operator shall not operate an aeroplane unless it is equipped with:

(a) For flight by day:

1. Anti-collision light system;

2. Lighting supplied from the aeroplane's electrical system to provide adequate illumination for all instruments and equipment essential to the safe operation of the aeroplane;

3. Lighting supplied from the aeroplane's electrical system to provide illumination in all passenger compartments; and

4. An electric torch for each required crew member readily accessible to crew members when seated at their designated station.

(b) For flight by night, in addition to equipment specified in paragraph (a) above:

1. Navigation/position lights; and

2. Two landing lights or a single light having two separately energised filaments; and

3. Lights to conform with the International regulations for preventing collisions at sea if the aeroplane is a Seaplane or an Amphibian.

OPS 1.645

Windshield wipers

An operator shall not operate an aeroplane with a maximum certificated take-off mass of more than 5 700 kg unless it is equipped at each pilot station with a windshield wiper or equivalent means to maintain a clear portion of the windshield during precipitation.

OPS 1.650

Day VFR operations Flight and navigational instruments and associated equipment

An operator shall not operate an aeroplane by day in accordance with Visual Flight Rules (VFR) unless it is equipped with the flight and navigational instruments and associated equipment and, where applicable, under the conditions stated in the following sub-paragraphs:

(a) A magnetic compass;

(b) An accurate timepiece showing the time in hours, minutes, and seconds;

(c) A sensitive pressure altimeter calibrated in feet with a sub-scale setting, calibrated in hectopascals/millibars, adjustable for any barometric pressure likely to be set during flight;

(d) An airspeed indicator calibrated in knots;

(e) A vertical speed indicator;

(f) A turn and slip indicator, or a turn coordinator incorporating a slip indicator;

(g) An attitude indicator;

(h) A stabilised direction indicator; and

(i) A means of indicating in the flight crew compartment the outside air temperature calibrated in degrees Celcius.

(j) For flights which do not exceed 60 minutes duration, which take off and land at the same aerodrome, and which remain within 50 nm of that aerodrome, the instruments prescribed in sub-paragraphs (f), (g) and (h) above, and sub-paragraphs (k) 4, (k) 5 and (k) 6 below, may all be replaced by either a turn and slip indicator, or a turn coordinator incorporating a slip indicator, or both an attitude indicator and a slip indicator.

(k) Whenever two pilots are required the second pilot's station shall have separate instruments as follows:

1. A sensitive pressure altimeter calibrated in feet with a sub-scale setting calibrated in hectopascals/millibars, adjustable for any barometric pressure likely to be set during flight;

2. An airspeed indicator calibrated in knots;

3. A vertical speed indicator;

4. A turn and slip indicator, or a turn coordinator incorporating a slip indicator;

5. An attitude indicator; and

6. A stabilised direction indicator.

(l) Each airspeed indicating system must be equipped with a heated pitot tube or equivalent means for preventing malfunction due to either condensation or icing for:

1. aeroplanes with a maximum certificated take-off mass in excess of 5 700 kg or having a maximum approved passenger seating configuration of more than 9 seats;

2. aeroplanes first issued with an individual certificate of airworthiness on or after 1 April 1999

(m) Whenever duplicate instruments are required, the requirement embraces separate displays for each pilot and separate selectors or other associated equipment where appropriate.

(n) All aeroplanes must be equipped with means for indicating when power is not adequately supplied to the required flight instruments; and

(o) All aeroplanes with compressibility limitations not otherwise indicated by the required airspeed indicators shall be equipped with a Mach number indicator at each pilot's station.

OPS 1.652

IFR or night operations — Flight and navigational instruments and associated equipment

An operator shall not operate an aeroplane in accordance with Instrument Flight Rules (IFR) or by night in accordance with Visual Flight Rules (VFR) unless it is equipped with the flight and navigational instruments and associated equipment and, where applicable, under the conditions stated in the following sub-paragraphs:

(a) A magnetic compass;

(b) An accurate time-piece showing the time in hours, minutes and seconds;

(c) Two sensitive pressure altimeters calibrated in feet with sub-scale settings, calibrated in hectopascals/millibars, adjustable for any barometric pressure likely to be set during flight;

(d) An airspeed indicating system with heated pitot tube or equivalent means for preventing malfunctioning due to either condensation or icing including a warning indication of pitot heater failure. The pitot heater failure warning indication requirement does not apply to those aeroplanes with a maximum approved passenger seating configuration of 9 or less or a maximum certificated take-off mass of 5 700 kg or less and issued with an individual Certificate of Airworthiness prior to 1 April 1998;

(e) A vertical speed indicator;

(f) A turn and slip indicator;

(g) An attitude indicator;

(h) A stabilised direction indicator;

(i) A means of indicating in the flight crew compartment the outside air temperature calibrated in degrees celsius; and

(j) Two independent static pressure systems, except that for propeller driven aeroplanes with maximum certificated take-off mass of 5 700 kg or less, one static pressure system and one alternate source of static pressure is allowed.

(k) Whenever two pilots are required the second pilot's station shall have separate instruments as follows:

1. A sensitive pressure altimeter calibrated in feet with a sub-scale setting, calibrated in hectopascals/millibars, adjustable for any barometric pressure likely to be set during flight and which may be one of the 2 altimeters required by sub-paragraph (c) above;

2. An airspeed indicating system with heated pitot tube or equivalent means for preventing malfunctioning due to either condensation or icing including a warning indication of pitot heater failure. The pitot heater failure warning indication requirement does not apply to those aeroplanes with a maximum approved passenger seating configuration of 9 or less or a maximum certificated take-off mass of 5 700 kg or less and issued with an individual Certificate of Airworthiness prior to 1 April 1998;

3. A vertical speed indicator;

4. A turn and slip indicator;

5. An attitude indicator; and

6. A stabilised direction indicator.

(l) Those aeroplanes with a maximum certificated take-off mass in excess of 5 700 kg or having a maximum approved passenger seating configuration of more than 9 seats must additionally be equipped with a single standby attitude indicator (artificial horizon), capable of being used from either pilot's station, that:

1. Is powered continuously during normal operation and, after a total failure of the normal electrical generating system is powered from a source independent of the normal electrical generating system;

2. Provides reliable operation for a minimum of 30 minutes after total failure of the normal electrical generating system, taking into account other loads on the emergency power supply and operational procedures;

3. Operates independently of any other attitude indicating system;

4. Is operative automatically after total failure of the normal electrical generating system; and

5. Is appropriately illuminated during all phases of operation,

except for aeroplanes with a maximum certificated take-off mass of 5 700 kg or less, already registered in a Member State on 1 April 1995, equipped with a standby attitude indicator in the pilot-in-command's instrument panel.

(m) In complying with sub-paragraph (l) above, it must be clearly evident to the flight crew when the standby attitude indicator, required by that sub-paragraph, is being operated by emergency power. Where the standby attitude indicator has its own dedicated power supply there shall be an associated indication, either on the instrument or on the instrument panel, when this supply is in use. This requirement must be complied with no later than 1 April 2000.

(n) A chart holder in an easily readable position which can be illuminated for night operations.

(o) If the standby attitude instrument system is installed and usable through flight attitudes of 360° of pitch and roll, the turn and slip indicators may be replaced by slip indicators. Usable means that the system will operate through 360° in pitch and roll and will not tumble.

(p) Whenever duplicate instruments are required, the requirement embraces separate displays for each pilot and separate selectors or other associated equipment where appropriate;

(q) All aeroplanes must be equipped with means for indicating when power is not adequately supplied to the required flight instruments; and

(r) All aeroplanes with compressibility limitations not otherwise indicated by the required airspeed indicators shall be equipped with a Mach number indicator at each pilot's station.

OPS 1.655

Additional equipment for single pilot operation under IFR or at night

An operator shall not conduct single pilot IFR operations unless the aeroplane is equipped with an autopilot with at least altitude hold and heading mode.

OPS 1.660

Altitude alerting system

An operator shall not operate a turbine propeller powered aeroplane with a maximum certificated take-off mass in excess of 5 700 kg or having a maximum approved passenger seating configuration of more than 9 seats or a turbojet powered aeroplane unless it is equipped with an altitude alerting system capable of:

1. Alerting the flight crew upon approaching preselected altitude in either ascent or descent; and

2. Alerting the flight crew by at least an aural signal, when deviating above or below a preselected altitude,

except for aeroplanes with a maximum certificated take-off mass of 5 700 kg or less having a maximum approved passenger seating configuration of more than 9 and first issued with an individual certificate of airworthiness before 1 April 1972 and already registered in a Member State on 1 April 1995.

OPS 1.665

Ground proximity warning system

(a) An operator shall not operate a turbine powered aeroplane:

1. Having a maximum certificated take-off mass in excess of 15 000 kg or having a maximum approved passenger seating configuration of more than 30; or

2. Having a maximum certificated take-off mass in excess of 5 700 kg or a maximum approved passenger seating configuration of more than 9 after 1 January 1999

unless it is equipped with a ground proximity warning system

(b) The ground proximity warning system required by this paragraph must automatically provide, by means of aural signals, which may be supplemented by visual signals, timely and distinctive warning to the flight crew of sink rate, ground proximity, altitude loss after take-off or go-around, incorrect landing configuration and downward glideslope deviation.

OPS 1.668

Airborne Collision Avoidance System

An operator shall not operate a turbine powered aeroplane:

1. Having a maximum certificated take-off mass in excess of 15 000 kg or a maximum approved passenger seating configuration of more than 30 after 1 January 2000; or

2. Having a maximum certificated take-off mass in excess of 5 700 kg, but not more than 15 000 kg, or a maximum approved passenger seating configuration of more than 19, but not more than 30, after 1 January 2005.

unless it is equipped with an airborne collision avoidance system with a minimum performance level of at least ACAS II.

OPS 1.670

Airborne weather radar equipment

(a) An operator shall not operate:

1. A pressurised aeroplane; or

2. An unpressurised aeroplane which has a maximum certificated take-off mass of more than 5 700 kg; or

3. An unpressurised aeroplane having a maximum approved passenger seating configuration of more than 9 seats after 1 April 1999,

unless it is equipped with airborne weather radar equipment whenever such an aeroplane is being operated at night or in instrument meteorological conditions in areas where thunderstorms or other potentially hazardous weather conditions, regarded as detectable with airborne weather radar, may be expected to exist along the route.

(b) For propeller driven pressurised aeroplanes having a maximum certificated take-off mass not exceeding 5 700 kg with a maximum approved passenger seating configuration not exceeding 9 seats the airborne weather radar equipment may be replaced by other equipment capable of detecting thunderstorms and other potentially hazardous weather conditions, regarded as detectable with airborne weather radar equipment, subject to approval by the Authority.

OPS 1.675

Equipment for operations in icing conditions

(a) An operator shall not operate an aeroplane in expected or actual icing conditions unless it is certificated and equipped to operate in icing conditions.

(b) An operator shall not operate an aeroplane in expected or actual icing conditions at night unless it is equipped with a means to illuminate or detect the formation of ice. Any illumination that is used must be of a type that will not cause glare or reflection that would handicap crew members in the performance of their duties.

OPS 1.680

Cosmic radiation detection equipment

An operator shall ensure that aeroplanes intended to be operated above 15 000 m (49 000 ft) are equipped with an instrument to measure and indicate continuously the dose rate of total cosmic radiation being received (i.e. the total of ionizing and neutron radiation of galactic and solar origin) and the cumulative dose on each flight.

OPS 1.685

Flight crew interphone system

An operator shall not operate an aeroplane on which a flight crew of more than one is required unless it is equipped with a flight crew interphone system, including headsets and microphones, not of a handheld type, for use by all members of the flight crew, except that for aeroplanes registered in a Member State on 1 April 1995 and first issued with an individual certificate of airworthiness before 1 April 1975 a flight crew interphone system is required by 1 April 2002.

OPS 1.690

Crew member interphone system

(a) An operator shall not operate an aeroplane with a maximum certificated take-off mass exceeding 15 000 kg or having a maximum approved passenger seating configuration of more than 19 unless it is equipped with a crew member interphone system except for aeroplanes first issued with an individual certificate of airworthiness before 1 April 1965 and already registered in a Member State on 1 April 1995.

(b) The crew member interphone system required by this paragraph must:

1. Operate independently of the public address system except for handsets, headsets, microphones, selector switches and signalling devices;

2. Provide a means of two-way communication between the flight crew compartment and:

(i) Each passenger compartment;

(ii) Each galley located other than on a passenger deck level; and

(iii) Each remote crew compartment that is not on the passenger deck and is not easily accessible from a passenger compartment;

3. Be readily accessible for use from each of the required flight crew stations in the flight crew compartment;

4. Be readily accessible for use at required cabin crew member stations close to each separate or pair of floor level emergency exits;

5. Have an alerting system incorporating aural or visual signals for use by flight crew members to alert the cabin crew and for use by cabin crew members to alert the flight crew;

6. Have a means for the recipient of a call to determine whether it is a normal call or an emergency call; and

7. Provide on the ground a means of two-way communication between ground personnel and at least two flight crew members.

OPS 1.695

Public address system

(a) An operator shall not operate an aeroplane with a maximum approved passenger seating configuration of more than 19 unless a public address system is installed.

(b) The public address system required by this paragraph must:

1. Operate independently of the interphone systems except for handsets, headsets, microphones, selector switches and signalling devices;

2. Be readily accessible for immediate use from each required flight crew member station;

3. For each required floor level passenger emergency exit which has an adjacent cabin crew seat, have a microphone which is readily accessible to the seated cabin crew member, except that one microphone may serve more than one exit, provided the proximity of the exits allows unassisted verbal communication between seated cabin crew members;

4. Be capable of operation within 10 seconds by a cabin crew member at each of those stations in the compartment from which its use is accessible; and

5. Be audible and intelligible at all passenger seats, toilets and cabin crew seats and work stations.

OPS 1.700

Cockpit voice recorders — 1

(a) An operator shall not operate an aeroplane first issued with an individual Certificate of Airworthiness, on or after 1 April 1998, which:

1. Is multi-engine turbine powered and has a maximum approved passenger seating configuration of more than 9; or

2. Has a maximum certificated take-off mass over 5 700 kg,

unless it is equipped with a cockpit voice recorder which, with reference to a time scale, records:

(i) Voice communications transmitted from or received on the flight deck by radio;

(ii) The aural environment of the flight deck, including without interruption, the audio signals received from each boom and mask microphone in use;

(iii) Voice communications of flight crew members on the flight deck using the aeroplane's interphone system;

(iv) Voice or audio signals identifying navigation or approach aids introduced into a headset or speaker; and

(v) Voice communications of flight crew members on the flight deck using the public address system, if installed.

(b) The cockpit voice recorder shall be capable of retaining information recorded during at least the last 2 hours of its operation except that, for those aeroplanes with a maximum certificated take-off mass of 5 700 kg or less, this period may be reduced to 30 minutes.

(c) The cockpit voice recorder must start automatically to record prior to the aeroplane moving under its own power and continue to record until the termination of the flight when the aeroplane is no longer capable of moving under its own power. In addition, depending on the availability of electrical power, the cockpit voice recorder must start to record as early as possible during the cockpit checks prior to engine start at the beginning of the flight until the cockpit checks immediately following engine shutdown at the end of the flight.

(d) The cockpit voice recorder must have a device to assist in locating that recorder in water.

(e) In complying with this section, aeroplanes with a maximum certificated take-off mass of 5 700 kg or less may have the cockpit voice recorder combined with the flight data recorder.

(f) Any aeroplane may be despatched with the cockpit voice recorder required by this section inoperative provided that:

1. It is not reasonably practicable to repair or replace the cockpit voice recorder before the commencement of the flight;

2. The aeroplane does not exceed 8 further consecutive flights with the cockpit voice recorder unserviceable;

3. Not more than 72 hours have elapsed since the cockpit voice recorder was found to be unserviceable; and

4. Any flight data recorder required to be carried is operative, unless it is combined with a cockpit voice recorder.

OPS 1.705

Cockpit voice recorders — 2

(a) After 1 April 2000 an operator shall not operate any multi-engined turbine aeroplane first issued with an individual certificate of airworthiness, on or after 1 January 1990 up to and including 31 March 1998 which has a maximum certificated take-off mass of 5 700 kg or less and a maximum approved passenger seating configuration of more than 9, unless it is equipped with a cockpit voice recorder which records:

1. Voice communications transmitted from or received on the flight deck by radio;

2. The aural environment of the flight deck, including where practicable, without interruption, the audio signals received from each boom and mask microphone in use;

3. Voice communications of flight crew members on the flight deck using the aeroplane's interphone system;

4. Voice or audio signals identifying navigation or approach aids introduced into a headset or speaker; and

5. Voice communications of flight crew members on the flight deck using the public address system, if installed.

(b) The cockpit voice recorder shall be capable of retaining information recorded during at least the last 30 minutes of its operation.

(c) The cockpit voice recorder must start to record prior to the aeroplane moving under its own power and continue to record until the termination of the flight when the aeroplane is no longer capable of moving under its own power. In addition, depending on the availability of electrical power, the cockpit voice recorder must start to record as early as possible during the cockpit checks, prior to the flight until the cockpit checks immediately following engine shutdown at the end of the flight.

(d) The cockpit voice recorder must have a device to assist in locating that recorder in water.

(e) An aeroplane may be despatched with the cockpit voice recorder required by this section inoperative provided that:

1. It is not reasonably practicable to repair or replace the cockpit voice recorder before the commencement of the flight;

2. The aeroplane does not exceed 8 further consecutive flights with the cockpit voice recorder unserviceable;

3. Not more than 72 hours have elapsed since the cockpit voice recorder was found to be unserviceable; and

4. Any flight data recorder required to be carried is operative unless it is combined with a cockpit voice recorder.

OPS 1.710

Cockpit voice recorders — 3

(a) An operator shall not operate any aeroplane with a maximum certificated take-off mass over 5 700 kg, first issued with an individual certificate of airworthiness, before 1 April 1998 unless it is equipped with a cockpit voice recorder which records:

1. Voice communications transmitted from or received on the flight deck by radio;

2. The aural environment of the flight deck;

3. Voice communications of flight crew members on the flight deck using the aeroplane's interphone system;

4. Voice or audio signals identifying navigation or approach aids introduced into a headset or speaker; and

5. Voice communications of flight crew members on the flight deck using the public address system, if installed.

(b) The cockpit voice recorder shall be capable of retaining information recorded during at least the last 30 minutes of its operation.

(c) The cockpit voice recorder must start to record prior to the aeroplane moving under its own power and continue to record until the termination of the flight when the aeroplane is no longer capable of moving under its own power.

(d) The cockpit voice recorder must have a device to assist in locating that recorder in water.

(e) An aeroplane may be despatched with the cockpit voice recorder required by this section inoperative provided that:

1. It is not reasonably practicable to repair or replace the cockpit voice recorder before the commencement of the flight;

2. The aeroplane does not exceed 8 further consecutive flights with the cockpit voice recorder unserviceable;

3. Not more than 72 hours have elapsed since the cockpit voice recorder was found to be unserviceable; and

4. Any flight data recorder required to be carried is operative.

OPS 1.715

Flight data recorders — 1

(a) An operator shall not operate any aeroplane first issued with an individual Certificate of Airworthiness on or after 1 April 1998 which:

1. Is multi-engine turbine powered and has a maximum approved passenger seating configuration of more than nine (9); or

2. Has a maximum certificated take-off mass over 5 700 kg,

unless it is equipped with a flight data recorder that uses a digital method of recording and storing data and a method of readily retrieving that data from the storage medium is available.

(b) The flight data recorder shall be capable of retaining the data recorded during at least the last 25 hours of its operation except that, for those aeroplanes with a maximum certificated take-off mass of 5 700 kg or less, this period may be reduced to 10 hours.

(c) The flight data recorder must, with reference to a timescale, record:

1. The parameters necessary to determine altitude, airspeed, heading, acceleration, pitch and roll attitude, radio transmission keying, thrust or power on each engine, configuration of lift and drag devices, air temperature, use of automatic flight control systems and angle of attack;

2. For those aeroplanes with a maximum certificated take-off mass over 27 000 kg, the additional parameters necessary to determine positions of primary flight controls and pitch trim, radio altitude and primary navigation information displayed to the flight crew, cockpit warnings and landing gear position; and

3. For aeroplanes specified in (a) above, the flight data recorder must record any dedicated parameters relating to novel or unique design or operational characteristics of the aeroplane.

(d) Data must be obtained from aircraft sources which enable accurate correlation with information displayed to the flight crew.

(e) The flight data recorder must start automatically to record the data prior to the aeroplane being capable of moving under its own power and must stop automatically after the aeroplane is incapable of moving under its own power.

(f) The flight data recorder must have a device to assist in locating that recorder in water.

(g) Aeroplanes with a maximum certificated take-off mass of 5 700 kg or less may have the flight data recorder combined with the cockpit voice recorder.

(h) An aeroplane may be despatched with the flight data recorder required by this section inoperative provided that:

1. It is not reasonably practicable to repair or replace the flight data recorder before the commencement of the flight;

2. The aeroplane does not exceed 8 further consecutive flights with the flight data recorder unserviceable;

3. Not more than 72 hours have elapsed since the flight data recorder was found to be unserviceable; and

4. Any cockpit voice recorder required to be carried is operative, unless it is combined with the flight data recorder.

OPS 1.720

Flight data recorders — 2

(a) An operator shall not operate any aeroplane first issued with an individual certificate of airworthiness, on or after 1 January 1989 up to and including 31 March 1998 which has a maximum certificated take-off mass over 5 700 kg unless it is equipped with a flight data recorder that uses a digital method of recording and storing data and a method of readily retrieving that data from the storage medium is available.

(b) The flight data recorder shall be capable of retaining the data recorded during at least the last 25 hours of its operation.

(c) The flight data recorder must, with reference to a timescale, record:

1. The parameters necessary to determine altitude, airspeed, heading, acceleration, pitch and roll attitude, radio transmission keying unless an alternative means is provided to enable the recordings of the flight data recorder and the cockpit voice recorder to be synchronised, thrust or power on each engine, configuration of lift and drag devices, air temperature, use of automatic flight control systems and angle of attack; and

2. For those aeroplanes with a maximum certificated take-off mass over 27 000 kg, the additional parameters necessary to determine positions of primary flight controls and pitch trim, radio altitude and primary navigation information displayed to the flight crew, cockpit warnings and landing gear position.

(d) Data must be obtained from aeroplane sources which enable accurate correlation with information displayed to the flight crew.

(e) The flight data recorder must start to record the data prior to the aeroplane being capable of moving under its own power and must stop after the aeroplane is incapable of moving under its own power.

(f) The flight data recorder must have a device to assist in locating that recorder in water.

(g) An aeroplane may be despatched with the flight data recorder required by this section inoperative provided that:

1. It is not reasonably practical to repair or replace the flight data recorder before the commencement of the flight;

2. The aeroplane does not exceed 8 further consecutive flights with the flight data recorder unserviceable;

3. Not more than 72 hours have elapsed since the flight data recorder was found to be unserviceable; and

4. Any cockpit voice recorder required to be carried is operative, unless it is combined with the flight data recorder.

OPS 1.725

Flight data recorders — 3

(a) An operator shall not operate any turbine-engined aeroplane to which OPS 1.715 or OPS 1.720 is not applicable and which has a maximum certificated take-off mass over 5 700 kg unless it is equipped with a flight data recorder that uses a digital method of recording and storing data and a method of readily retrieving that data from the storage medium is available, except that for aeroplanes registered in a Member State on 1 April 1995 and first issued with an individual certificate of airworthiness before 1 April 1975, the continued use of non-digital recorders is acceptable until 1 April 2000.

(b) The flight data recorder shall be capable of retaining the data recorded during at least the last 25 hours of its operation.

(c) The flight data recorder must, with reference to a timescale, record:

1. For aeroplanes first issued with an individual Certificate of Airworthiness, before 1 January 1987:

(i) The parameters necessary to determine altitude, airspeed, heading and normal acceleration; and

(ii) For those aeroplanes with a maximum certificated take-off mass over 27 000 kg that are of a type first type after 30 September 1969, the additional parameters necessary to determine:

(A) Radio transmission keying unless an alternative means is provided to enable the recordings of the flight data recorder and the cockpit voice recorder to be synchronised;

(B) The attitude of the aeroplane in achieving its flight path;

(C) The basic forces acting upon the aeroplane resulting in the achieved flight path and the origin of such forces.

2. For aeroplanes first issued with an individual certificate of airworthiness on or after 1 January 1987 but before 1 January 1989:

(i) The parameters necessary to determine altitude, airspeed, heading and normal acceleration; and

(ii) For those aeroplanes with a maximum certificated take-off mass over 27 000 kg that are of a type first type certificated after 30 September 1969, the additional parameters necessary to determine:

(A) Radio transmission keying unless an alternative means is provided to enable the recordings of the flight data recorder and the cockpit voice recorder to be synchronised; and

(B) Pitch and roll attitude, thrust or power on each engine, configuration of lift and drag devices, air temperature, use of automatic flight control systems, position of primary flight controls and pitch trim, radio altitude and primary navigation information displayed to the flight crew, cockpit warnings and landing gear position.

(d) Data must be obtained from aircraft sources which enable accurate correlation with information displayed to the flight crew.

(e) The flight data recorder must start to record the data prior to the aeroplane being capable of moving under its own power and must stop after the aeroplane is incapable of moving under its own power.

(f) The flight data recorder must have a device to assist in locating that recorder in water.

(g) Any aeroplane may be despatched with the flight data recorder required by this section inoperative provided that:

1. It is not reasonably practicable to repair or replace the flight data recorder before the commencement of the flight;

2. The aeroplane does not exceed 8 further consecutive flights with the flight data recorder unserviceable;

3. Not more than 72 hours have elapsed since the flight data recorder was found to be unserviceable; and

4. Any cockpit voice recorder required to be carried is operative, unless it is combined with the flight data recorder.

OPS 1.730

Seats, seat safety belts, harnesses and child restraint devices

(a) An operator shall not operate an aeroplane unless it is equipped with:

1. A seat or berth for each person who is aged two years or more;

2. A safety belt, with or without a diagonal shoulder strap, or a safety harness for use in each passenger seat for each passenger aged 2 years or more;

3. A supplementary loop belt or other restraint device for each infant;

4. Except as provided in sub-paragraph (b) below, a safety belt with shoulder harness for each flight crew seat and for any seat alongside a pilot's seat incorporating a device which will automatically restrain the occupant's torso in the event of rapid deceleration;

5. Except as provided in sub-paragraph (b) below, a safety belt with shoulder harness for each cabin crew seat and observer's seats. However, this requirement does not preclude use of passenger seats by cabin crew members carried in excess of the required cabin crew complement; and

6. Seats for cabin crew members located near required floor level emergency exits except that, if the emergency evacuation of passengers would be enhanced by seating cabin crew members elsewhere, other locations are acceptable. Such seats shall be forward or rearward facing within 15º of the longitudinal axis of the aeroplane.

(b) All safety belts with shoulder harness must have a single point release.

(c) A safety belt with a diagonal shoulder strap for aeroplanes with a maximum certificated take-off mass not exceeding 5 700 kg or a safety belt for aeroplanes with a maximum certificated take-off mass not exceeding 2 730 kg may be permitted in place of a safety belt with shoulder harness if it is not reasonably practicable to fit the latter.

OPS 1.731

Fasten Seat belt and No Smoking signs

An operator shall not operate an aeroplane in which all passenger seats are not visible from the flight deck, unless it is equipped with a means of indicating to all passengers and cabin crew when seat belts shall be fastened and when smoking is not allowed.

OPS 1.735

Internal doors and curtains

An operator shall not operate an aeroplane unless the following equipment is installed:

(a) In an aeroplane with a maximum approved passenger seating configuration of more than 19 passengers, a door between the passenger compartment and the flight deck compartment with a placard "crew only" and a locking means to prevent passengers from opening it without the permission of a member of the flight crew;

(b) A means for opening each door that separates a passenger compartment from another compartment that has emergency exit provisions. The means for opening must be readily accessible;

(c) If it is necessary to pass through a doorway or curtain separating the passenger cabin from other areas to reach any required emergency exit from any passenger seat, the door or curtain must have a means to secure it in the open position;

(d) A placard on each internal door or adjacent to a curtain that is the means of access to a passenger emergency exit, to indicate that it must be secured open during take off and landing; and

(e) A means for any member of the crew to unlock any door that is normally accessible to passengers and that can be locked by passengers.

OPS 1.745

First-Aid Kits

(a) An operator shall not operate an aeroplane unless it is equipped with first-aid kits, readily accessible for use, to the following scale:

Number of passenger seats installed	Number of First-Aid Kits required
0 to 99	1
100 to 199	2
200 to 299	3
300 and more	4

(b) An operator shall ensure that first-aid kits are:

1. Inspected periodically to confirm, to the extent possible, that contents are maintained in the condition necessary for their intended use; and

2. Replenished at regular intervals, in accordance with instructions contained on their labels, or as circumstances warrant.

OPS 1.755

Emergency Medical Kit

(a) An operator shall not operate an aeroplane with a maximum approved passenger seating configuration of more than 30 seats unless it is equipped with an emergency medical kit if any point on the planned route is more than 60 minutes flying time (at normal cruising speed) from an aerodrome at which qualified medical assistance could be expected to be available.

(b) The commander shall ensure that drugs are not administered except by qualified doctors, nurses or similarly qualified personnel.

(c) *Conditions for carriage*

1. The emergency medical kit must be dust and moisture proof and shall be carried under security conditions, where practicable, on the flight deck; and

2. An operator shall ensure that emergency medical kits are:

(i) Inspected periodically to confirm, to the extent possible, that the contents are maintained in the condition necessary for their intended use; and

(ii) Replenished at regular intervals, in accordance with instructions contained on their labels, or as circumstances warrant.

OPS 1.760

First-aid oxygen

(a) An operator shall not operate a pressurised aeroplane, at altitudes above 25 000 ft, when a cabin crew member is required to be carried, unless it is equipped with a supply of undiluted oxygen for passengers who, for physiological reasons, might require oxygen following a cabin depressurisation. The amount of oxygen shall be calculated using an average flow rate of at least 3 litres Standard Temperature Pressure Dry (STPD)/minute/person and provided for the entire flight after cabin depressurisation at cabin altitudes of more than 8 000 ft for at least 2 % of the passengers carried, but in no case for less than one person. There shall be a sufficient number of dispensing units, but in no case less than two, with a means for cabin crew to use the supply.

(b) The amount of first-aid oxygen required for a particular operation shall be determined on the basis of cabin pressure altitudes and flight duration, consistent with the operating procedures established for each operation and route.

(c) The oxygen equipment provided shall be capable of generating a mass flow to each user of at least four litres per minute, STPD. Means may be provided to decrease the flow to not less than two litres per minute, STPD, at any altitude.

OPS 1.770

Supplemental oxygen pressurised aeroplanes

(See Appendix 1 to OPS 1.770)

(a) *General*

1. An operator shall not operate a pressurised aeroplane at pressure altitudes above 10 000 ft unless supplemental oxygen equipment, capable of storing and dispensing the oxygen supplies required by this paragraph, is provided.

2. The amount of supplemental oxygen required shall be determined on the basis of cabin pressure altitude, flight duration and the assumption that a cabin pressurisation failure will occur at the altitude or point of flight that is most critical from the standpoint of oxygen need, and that, after the failure, the aeroplane will descend in accordance with emergency procedures specified in the Aeroplane Flight Manual to a safe altitude for the route to be flown that will allow continued safe flight and landing.

3. Following a cabin pressurisation failure, the cabin pressure altitude shall be considered the same as the aeroplane pressure altitude, unless it is demonstrated to the Authority that no probable failure of the cabin or pressurisation system will result in a cabin pressure altitude equal to the aeroplane altitude. Under these circumstances, the demonstrated maximum cabin pressure altitude may be used as a basis for determination of oxygen supply.

(b) *Oxygen equipment and supply requirements*

1. Flight crew members

(i) Each member of the flight crew on flight deck duty shall be supplied with supplemental oxygen in accordance with Appendix 1. If all occupants of flight deck seats are supplied from the flight crew source of oxygen supply then they shall be considered as flight crew members on flight deck duty for the purpose of oxygen supply. Flight deck seat occupants, not supplied by the flight crew source, are to be considered as passengers for the purpose of oxygen supply.

(ii) Flight crew members, not covered by sub-paragraph (b) 1 (i) above, are to be considered as passengers for the purpose of oxygen supply.

(iii) Oxygen masks shall be located so as to be within the immediate reach of flight crew members whilst at their assigned duty station.

(iv) Oxygen masks for use by flight crew members in pressurised aeroplanes operating above 25 000 ft shall be a quick donning type of mask.

2. Cabin crew members, additional crew members and passengers

(i) Cabin crew members and passengers shall be supplied with supplemental oxygen in accordance with Appendix 1, except when subparagraph (v) below applies. Cabin crew members carried in addition to the minimum number of cabin crew members required, and additional crew members, shall be considered as passengers for the purpose of oxygen supply.

(ii) Aeroplanes intended to be operated at pressure altitudes above 25 000 ft shall be provided with sufficient spare outlets and masks and/or sufficient portable oxygen units with masks for use by all required cabin crew members. The spare outlets and/or portable oxygen units are to be distributed evenly throughout the cabin to ensure immediate availability of oxygen to each required cabin crew member regardless of his location at the time of cabin pressurisation failure.

(iii) Aeroplanes intended to be operated at pressure altitudes above 25 000 ft shall be provided with an oxygen dispensing unit connected to oxygen supply terminals immediately available to each occupant, wherever seated. The total number of dispensing units and outlets shall exceed the number of seats by at least 10 %. The extra units are to be evenly distributed throughout the cabin.

(iv) Aeroplanes intended to be operated at pressure altitudes above 25 000 ft or which, if operated at or below 25 000 ft, cannot descend safely within 4 minutes to 13 000 ft, and for which the individual certificate of airworthiness was first issued on or after 9 November 1998, shall be provided with automatically deployable oxygen equipment immediately available to each occupant, wherever seated. The total number of dispensing units and outlets shall exceed the number of seats by at least 10 %. The extra units are to be evenly distributed throughout the cabin.

(v) The oxygen supply requirements, as specified in Appendix 1, for aeroplanes not certificated to fly at altitudes above 25 000 ft, may be reduced to the entire flight time between 10 000 ft and 13 000 ft cabin pressure altitudes for all required cabin crew members and for at least 10% of the passengers if, at all points along the route to be flown, the aeroplane is able to descend safely within 4 minutes to a cabin pressure altitude of 13 000 ft.

OPS 1.775

Supplemental oxygen — Non-pressurised aeroplanes

(See Appendix 1 to OPS 1.775)

(a) *General*

1. An operator shall not operate a non-pressurised aeroplane at altitudes above 10 000 ft unless supplemental oxygen equipment, capable of storing and dispensing the oxygen supplies required, is provided.

2. The amount of supplemental oxygen for sustenance required for a particular operation shall be determined on the basis of flight altitudes and flight duration, consistent with the operating procedures established for each operation in the Operations Manual and with the routes to be flown, and with the emergency procedures specified in the Operations Manual.

3. An aeroplane intended to be operated at pressure altitudes above 10 000 ft shall be provided with equipment capable of storing and dispensing the oxygen supplies required.

(b) *Oxygen supply requirements*

1. Flight crew members

Each member of the flight crew on flight deck duty shall be supplied with supplemental oxygen in accordance with Appendix 1. If all occupants of flight deck seats are supplied from the flight crew source of oxygen supply then they shall be considered as flight crew members on flight deck duty for the purpose of oxygen supply.

2. Cabin crew members, additional crew members and passengers

Cabin crew members and passengers shall be supplied with oxygen in accordance with Appendix 1. Cabin crew members carried in addition to the minimum number of cabin crew members required, and additional crew members, shall be considered as passengers for the purpose of oxygen supply.

OPS 1.780

Crew Protective Breathing Equipment

(a) An operator shall not operate a pressurised aeroplane or, after 1 April 2000, an unpressurised aeroplane with a maximum certificated take-off mass exceeding 5 700 kg or having a maximum approved seating configuration of more than 19 seats unless:

1. It has equipment to protect the eyes, nose and mouth of each flight crew member while on flight deck duty and to provide oxygen for a period of not less than 15 minutes. The supply for Protective Breathing Equipment (PBE) may be provided by the supplemental oxygen required by OPS 1.770 (b) 1 or OPS 1.775 (b) 1. In addition, when the flight crew is more than one and a cabin crew member is not carried, portable PBE must be carried to protect the eyes, nose and mouth of one member of the flight crew and to provide breathing gas for a period of not less than 15 minutes; and

2. It has sufficient portable PBE to protect the eyes, nose and mouth of all required cabin crew members and to provide breathing gas for a period of not less than 15 minutes.

(b) PBE intended for flight crew use must be conveniently located on the flight deck and be easily accessible for immediate use by each required flight crew member at their assigned duty station.

(c) PBE intended for cabin crew use must be installed adjacent to each required cabin crew member duty station.

(d) An additional, easily accessible portable PBE must be provided and located at or adjacent to the hand fire extinguishers required by OPS 1.790 (c) and (d) except that, where the fire extinguisher is located inside a cargo compartment, the PBE must be stowed outside but adjacent to the entrance to that compartment.

(e) PBE while in use must not prevent communication where required by OPS 1.685, OPS 1.690, OPS 1.810 and OPS 1.850.

OPS 1.790

Hand fire extinguishers

An operator shall not operate an aeroplane unless hand fire extinguishers are provided for use in crew, passenger and, as applicable, cargo compartments and galleys in accordance with the following:

(a) The type and quantity of extinguishing agent must be suitable for the kinds of fires likely to occur in the compartment where the extinguisher is intended to be used and, for personnel compartments, must minimise the hazard of toxic gas concentration;

(b) At least one hand fire extinguisher, containing Halon 1211 (bromochlorodifluoro-methane, $CBrClF_2$), or equivalent as the extinguishing agent, must be conveniently located on the flight deck for use by the flight crew;

(c) At least one hand fire extinguisher must be located in, or readily accessible for use in, each galley not located on the main passenger deck;

(d) At least one readily accessible hand fire extinguisher must be available for use in each Class A or Class B cargo or baggage compartment and in each Class E cargo compartment that is accessible to crew members in flight; and

(e) At least the following number of hand fire extinguishers must be conveniently located in the passenger compartment(s):

Maximum approved passenger seating configuration	Number of Extinguishers
7 to 30	1
31 to 60	2
61 to 200	3
201 to 300	4
301 to 400	5
401 to 500	6
501 to 600	7
601 or more	8

When two or more extinguishers are required, they must be evenly distributed in the passenger compartment.

(f) At least one of the required fire extinguishers located in the passenger compartment of an aeroplane with a maximum approved passenger seating configuration of at least 31, and not more than 60, and at least two of the fire extinguishers located in the passenger compartment of an aeroplane with a maximum approved passenger seating configuration of 61 or more must contain Halon 1211 (bromochlorodi-fluoromethane, $CBrClF_2$), or equivalent as the extinguishing agent.

OPS 1.795

Crash axes and crowbars

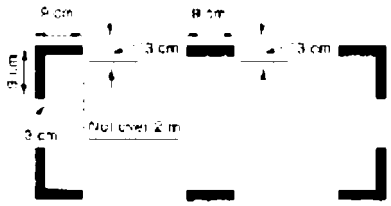
(a) An operator shall not operate an aeroplane with a maximum certificated take-off mass exceeding 5 700 kg or having a maximum approved passenger seating configuration of more than 9 seats unless it is equipped with at least one crash axe or crowbar located on the flight deck. If the maximum approved passenger seating configuration is more than 200 an additional crash axe or crowbar must be carried and located in or near the most rearward galley area.

(b) Crash axes and crowbars located in the passenger compartment must not be visible to passengers.

OPS 1.800

Marking of break-in points

An operator shall ensure that, if designated areas of the fuselage suitable for break-in by rescue crews in emergency are available on an aeroplane, such areas shall be marked as shown below. The colour of the markings shall be red or yellow, and if necessary they shall be outlined in white to contrast with the background. If the corner markings are more than 2 metres apart, intermediate lines 9 cm × 3 cm shall be inserted so that there is no more than 2 metres between adjacent marks.



OPS 1.805

Means for emergency evacuation

(a) An operator shall not operate an aeroplane with passenger emergency exit sill heights:

1. Which are more than 1,83 metres (6 feet) above the ground with the aeroplane on the ground and the landing gear extended; or

2. Which would be more than 1,83 metres (6 feet) above the ground after the collapse of, or failure to extend of, one or more legs of the landing gear and for which a Type Certificate was first applied for on or after 1 April 2000,

unless it has equipment or devices available at each exit, where sub-paragraphs 1 or 2 apply, to enable passengers and crew to reach the ground safely in an emergency.

(b) Such equipment or devices need not be provided at overwing exits if the designated place on the aeroplane structure at which the escape route terminates is less than 1,83 metres (6 feet) from the ground with the aeroplane on the ground, the landing gear extended, and the flaps in the take off or landing position, whichever flap position is higher from the ground.

(c) In aeroplanes required to have a separate emergency exit for the flight crew and:

1. For which the lowest point of the emergency exit is more than 1,83 metres (6 feet) above the ground with the landing gear extended; or,

2. For which a Type Certificate was first applied for on or after 1 April 2000, would be more than 1,83 metres (6 ft) above the ground after the collapse of, or failure to extend of, one or more legs of the landing gear,

there must be a device to assist all members of the flight crew in descending to reach the ground safely in an emergency.

OPS 1.810

Megaphones

An operator shall not operate an aeroplane with a maximum approved passenger seating configuration of more than 60 and carrying one or more passengers unless it is equipped with portable battery-powered megaphones readily accessible for use by crew members during an emergency evacuation, to the following scales:

1. For each passenger deck:

Passenger seating configuration	Number of Megaphones Required
61 to 99	1
100 or more	2

2. For aeroplanes with more than one passenger deck, in all cases when the total passenger seating configuration is more than 60, at least 1 megaphone is required.

OPS 1.815

Emergency lighting

(a) An operator shall not operate a passenger carrying aeroplane which has a maximum approved passenger seating configuration of more than 9 unless it is provided with an emergency lighting system having an independent power supply to facilitate the evacuation of the aeroplane. The emergency lighting system must include:

1. For aeroplanes which have a maximum approved passenger seating configuration of more than 19:

(i) Sources of general cabin illumination;

(ii) Internal lighting in floor level emergency exit areas; and

(iii) Illuminated emergency exit marking and locating signs.

(iv) For aeroplanes for which the application for the type certificate or equivalent was filed before 1 May 1972, and when flying by night, exterior emergency lighting at all overwing exits, and at exits where descent assist means are required.

(v) For aeroplanes for which the application for the type certificate or equivalent was filed on or after 1 May 1972, and when flying by night, exterior emergency lighting at all passenger emergency exits.

(vi) For aeroplanes for which the type certificate was first issued on or after 1 January 1958, floor proximity emergency escape path marking system in the passenger compartment(s).

2. For aeroplanes which have a maximum approved passenger seating configuration of 19 or less and are certificated according to JAR-25 or the applicable requirements for normal, utility, aerobatic and commuter category aeroplanes:

(i) Sources of general cabin illumination;

(ii) Internal lighting in emergency exit areas; and

(iii) Illuminated emergency exit marking and locating signs.

3. For aeroplanes which have a maximum approved passenger seating configuration of 19 or less and are not certificated according to JAR-25 or the applicable requirements for normal, utility, aerobatic and commuter category aeroplanes, sources of general cabin illumination.

(b) After 1 April 1998 an operator shall not, by night, operate a passenger carrying aeroplane which has a maximum approved passenger seating configuration of 9 or less unless it is provided with a source of general cabin illumination to facilitate the evacuation of the aeroplane. The system may use dome lights or other sources of illumination already fitted on the aeroplane and which are capable of remaining operative after the aeroplane's battery has been switched off.

OPS 1.820

Automatic Emergency Locator Transmitter

(a) An operator shall not operate an aeroplane unless it is equipped with an automatic Emergency Locator Transmitter (ELT) attached to the aeroplane in such a manner that, in the event of a crash, the probability of the ELT transmitting a detectable signal is maximised and the possibility of the ELT transmitting at any other time is minimised.

(b) An operator must ensure that the ELT is capable of transmitting on the distress frequencies prescribed in ICAO Annex 10.

OPS 1.825

Life Jackets

(a) *Land aeroplanes*

An operator shall not operate a land aeroplane:

1. When flying over water and at a distance of more than 50 nautical miles from the shore; or

2. When taking off or landing at an aerodrome where the take-off or approach path is so disposed over water that in the event of a mishap there would be a likelihood of a ditching,

unless it is equipped with life jackets equipped with a survivor locator light, for each person on board. Each life jacket must be stowed in a position easily accessible from the seat or berth of the person for whose use it is provided. Life jackets for infants may be substituted by other approved flotation devices equipped with a survivor locator light.

(b) *Seaplanes and amphibians*

An operator shall not operate a seaplane or an amphibian on water unless it is equipped with life jackets equipped with a survivor locator light, for each person on board. Each life jacket must be stowed in a position easily accessible from the seat or berth of the person for whose use it is provided. Life jackets for infants may be substituted by other approved flotation devices equipped with a survivor locator light.

OPS 1.830

Life-rafts and survival ELTs for extended overwater flights

(a) On overwater flights, an operator shall not operate an aeroplane at a distance away from land, which is suitable for making an emergency landing, greater than that corresponding to:

1. 120 minutes at cruising speed or 400 nautical miles, whichever is the lesser, for aeroplanes capable of continuing the flight to an aerodrome with the critical power unit(s) becoming inoperative at any point along the route or planned diversions; or

2. 30 minutes at cruising speed or 100 nautical miles, whichever is the lesser, for all other aeroplanes, unless the equipment specified in sub-paragraphs (b) and (c) below is carried.

(b) Sufficient life-rafts to carry all persons on board. Unless excess rafts of enough capacity are provided, the buoyancy and seating capacity beyond the rated capacity of the rafts must accommodate all occupants of the aeroplane in the event of a loss of one raft of the largest rated capacity. The life-rafts shall be equipped with:

1. A survivor locator light; and

2. Life saving equipment including means of sustaining life as appropriate to the flight to be undertaken; and

(c) At least two survival Emergency Locator Transmitters (ELT (S)) capable of transmitting on the distress frequencies prescribed in ICAO Annex 10, Volume V, Chapter 2.

OPS 1.835

Survival equipment

An operator shall not operate an aeroplane across areas in which search and rescue would be especially difficult unless it is equipped with the following:

(a) Signalling equipment to make the pyrotechnical distress signals described in ICAO Annex 2;

(b) At least one ELT (S) is capable of transmitting on the distress frequencies prescribed in ICAO Annex 10, Volume V, Chapter 2; and

(c) Additional survival equipment for the route to be flown taking account of the number of persons on board

except that the equipment specified in sub-paragraph (c) need not be carried when the aeroplane either:

1. Remains within a distance from an area where search and rescue is not especially difficult corresponding to:

   (i) 120 minutes at the one engine inoperative cruising speed for aeroplanes capable of continuing the flight to an aerodrome with the critical power unit(s) becoming inoperative at any point along the route or planned diversions; or

   (ii) 30 minutes at cruising speed for all other aeroplanes,

   or,

2. For aeroplanes certificated to JAR-25 or equivalent, no greater distance than that corresponding to 90 minutes at cruising speed from an area suitable for making an emergency landing.

OPS 1.840

Seaplanes and amphibians — Miscellaneous equipment

An operator shall not operate a seaplane or an amphibian on water unless it is equipped with:

1. A sea anchor and other equipment necessary to facilitate mooring, anchoring or manoeuvring the aircraft on water, appropriate to its size, weight and handling characteristics; and

2. Equipment for making the sound signals prescribed in the International Regulations for preventing collisions at sea, where applicable.

Appendix 1 to OPS 1.770

Oxygen — Minimum Requirements for Supplemental Oxygen for Pressurised Aeroplanes during and following Emergency Descent (Note 1)

Table 1

(a)	(b)
Supply for:	Duration and cabin pressure altitude
1. All occupants of flight deck seats on flight deck duty	Entire flight time when the cabin pressure altitude exceeds 13 000 ft and entire flight time when the cabin pressure altitude exceeds 10 000 ft but does not exceed 13 000 ft after the first 30 minutes at those altitudes, but in no case less than: (i) 30 minutes for aeroplanes certificated to fly at altitudes not exceeding 25 000 ft (Note 2) (ii) 2 hours for aeroplanes certificated to fly at altitudes more than 25 000 ft (Note 3)
2. All required cabin crew members	Entire flight time when cabin pressure altitude exceeds 13 000 ft but not less than 30 minutes (Note 2), and entire flight time when cabin pressure altitude is greater than 10 000 ft but does not exceed 13 000 ft after the first 30 minutes at these altitudes
3. 100 % of passengers (Note 5)	Entire flight time when the cabin pressure altitude exceeds 15 000 ft but in no case less then 10 minutes (Note 4)
4. 30 % of passengers (Note 5)	Entire flight time when the cabin pressure altitude exceeds 14 000 ft but does not exceed 15 000 ft
5. 10 % of passengers (Note 5).	Entire flight time when the cabin pressure altitude exceeds 10 000 ft but does not exceed 14 000 ft after the first 30 minutes at these altitudes

Note 1: The supply provided must take account of the cabin pressure altitude and descent profile for the routes concerned.

Note 2: The required minimum supply is that quantity of oxygen necessary for a constant rate of descent from the aeroplane's maximum certificated operating altitude to 10 000 ft in 10 minutes and followed by 20 minutes at 10 000 ft.

Note 3: The required minimum supply is that quantity of oxygen necessary for a constant rate of descent from the aeroplane's maximum certificated operating altitude to 10 000 ft in 10 minutes and followed by 110 minutes at 10 000 ft . The oxygen required in OPS 1.780 (a) 1 may be included in determining the supply required.

Note 4: The required minimum supply is that quantity of oxygen necessary for a constant rate of descent from the aeroplane's maximum certificated operating altitude to 15 000 ft.

Note 5: For the purpose of this table “passengers” means passengers actually carried and includes infants.

Appendix 1 to OPS 1.775

Supplemental Oxygen for non-pressurised Aeroplanes

Table 1

(a)	(b)
Supply for:	Duration and pressure altitude
1. All occupants of flight deck seats on flight deck duty	Entire flight time at pressure altitudes above 10 000 ft
2. All required cabin crew members	Entire flight time at pressure altitudes above 13 000 ft and for any period exceeding 30 minutes at pressure altitudes above 10 000 ft but not exceeding 13 000 ft
3. 100 % of passengers (See Note)	Entire flight time at pressure altitudes above 13 000 ft
4. 10 % of passengers (See Note)	Entire flight time after 30 minutes at pressure altitudes greater than 10 000 ft but not exceeding 13 000 ft

Note: For the purpose of this table "passengers" means passengers actually carried and includes infants under the age of 2.

SUBPART L

COMMUNICATION AND NAVIGATION EQUIPMENT

OPS 1.845

General introduction

(a) An operator shall ensure that a flight does not commence unless the communication and navigation equipment required under this Subpart is:

1. Approved and installed in accordance with the requirements applicable to them, including the minimum performance standard and the operational and airworthiness requirements;

2. Installed such that the failure of any single unit required for either communication or navigation purposes, or both, will not result in the failure of another unit required for communications or navigation purposes;

3. In operable condition for the kind of operation being conducted except as provided in the MEL (OPS 1.030 refers); and

4. So arranged that if equipment is to be used by one flight crew member at his station during flight it must be readily operable from his station. When a single item of equipment is required to be operated by more than one flight crew member it must be installed so that the equipment is readily operable from any station at which the equipment is required to be operated.

(b) Communication and navigation equipment minimum performance standards are those prescribed in the applicable Joint Technical Standard Orders (JTSO) as listed in JAR-TSO, unless different performance standards are prescribed in the operational or airworthiness codes. Communication and navigation equipment complying with design and performance specifications other than JTSO on the date of OPS implementation may remain in service, or be installed, unless additional requirements are prescribed in this Subpart. Communication and navigation equipment which has already been approved does not need to comply with a revised JTSO or a revised specification, other than JTSO, unless a retroactive requirement is prescribed.

OPS 1.850

Radio Equipment

(a) An operator shall not operate an aeroplane unless it is equipped with radio required for the kind of operation being conducted.

(b) Where two independent (separate and complete) radio systems are required under this Subpart, each system must have an independent antenna installation except that, where rigidly supported non-wire antennae or other antenna installations of equivalent reliability are used, only one antenna is required.

(c) The radio communication equipment required to comply with paragraph (a) above must also provide for communications on the aeronautical emergency frequency 121,5 MHz.

OPS 1.855

Audio Selector Panel

An operator shall not operate an aeroplane under IFR unless it is equipped with an audio selector panel accessible to each required flight crew member.

OPS 1.860

Radio equipment for operations under VFR over routes navigated by reference to visual landmarks

An operator shall not operate an aeroplane under VFR over routes that can be navigated by reference to visual landmarks, unless it is equipped with the radio equipment (communication and SSR transponder equipment) necessary under normal operating conditions to fulfil the following:

(a) Communicate with appropriate ground stations;

(b) Communicate with appropriate air traffic control facilities from any point in controlled airspace within which flights are intended;

(c) Receive meteorological information; and

(d) Reply to SSR interrogations as required for the route being flown.

OPS 1.865

Communication and Navigation equipment for operations under IFR, or under VFR over routes not navigated by reference to visual landmarks

(a) An operator shall not operate an aeroplane under IFR, or under VFR over routes that cannot be navigated by reference to visual landmarks, unless the aeroplane is equipped with communication and navigation equipment in accordance with the requirements of air traffic services in the area(s) of operation.

(b) *Radio Equipment*

An operator shall ensure that radio equipment comprises not less than:

1. Two independent radio communication systems necessary under normal operating conditions to communicate with an appropriate ground station from any point on the route including diversions;

2. SSR transponder equipment as required for the route being flown.

(c) *Navigation equipment*

An operator shall ensure that navigation equipment

1. Comprises not less than:

(i) One VOR receiving system, one ADF system, one DME;

(ii) One ILS or MLS where ILS or MLS is required for approach navigation purposes;

(iii) One Marker Beacon receiving system where a Marker Beacon is required for approach navigation purposes

(iv) An Area Navigation System when area navigation is required for the route being flown;

(v) An additional DME system on any route, or part thereof, where navigation is based only on DME signals;

(vi) An additional VOR receiving system on any route, or part thereof, where navigation is based only on VOR signals;

(vii) ADF system on any route, or part thereof, where navigation is based only on NDB signals; or

2. Complies with the Required Navigation Performance (RNP) Type for operation in the airspace concerned.

(d) An operator may operate an aeroplane that is not equipped with the navigation equipment specified in sub-paragraph(s) (a) 5 and/or (a) 6 above, provided that it is equipped with alternative equipment authorised, for the route being flown, by the Authority. The reliability and the accuracy of alternative equipment must allow safe navigation for the intended route.

OPS 1.870

Additional navigation equipment for operations in MNPS airspace

(a) An operator shall not operate an aeroplane in MNPS airspace unless it is equipped with navigation equipment that complies with minimum navigation performance specifications prescribed in ICAO Doc 7030 in the form of Regional Supplementary Procedures.

(b) The navigation equipment required by this paragraph must be visible and usable by either pilot seated at his duty station.

(c) For unrestricted operation in MNPS airspace an aeroplane must be equipped with two independent Long Range Navigation Systems (LRNS).

(d) For operation in MNPS airspace along notified special routes an aeroplane must be equipped with one Long Range Navigation System (LRNS), unless otherwise specified.

OPS 1.872

Equipment for operation in defined airspace with Reduced Vertical Separation Minima (RVSM)

(See also OPS 1.241)

An operator shall ensure that aeroplanes operated in RVSM airspace are equipped with:

1. Two independent altitude measuring systems

2. An altitude alerting system

3. An automatic altitude control system; and

4. A secondary surveillance radar (SSR) transponder with altitude reporting system that can be connected to the altitude measurement system in use for altitude keeping.

SUBPART M

AEROPLANE MAINTENANCE

OPS 1.875

General

(a) An operator shall not operate an aeroplane unless it is maintained and released to service by an organisation appropriately approved/accepted in accordance with JAR-145 except that pre-flight inspections need not necessarily be carried out by the JAR-145 organisation.

(b) This Subpart prescribes aeroplane maintenance requirements needed to comply with the operator certification requirements in OPS 1.180.

OPS 1.880

Terminology

The following definitions from JAR-145 shall apply to this Subpart:

(a) Preflight inspection — means the inspection carried out before flight to ensure that the aeroplane is fit for the intended flight. It does not include defect rectification.

(b) Approved standard — means a manufacturing/design/maintenance/quality standard approved by the Authority.

(c) Approved by the Authority — means approved by the Authority directly or in accordance with a procedure approved by the Authority.

OPS 1.885

Application for and approval of the operator's maintenance system

(a) For the approval of the maintenance system, an applicant for the initial issue, variation and renewal of an AOC shall submit the documents specified in OPS 1.185(b).

(b) An applicant for the initial issue, variation and renewal of an AOC who meets the requirements of this Subpart, in conjunction with an appropriate JAR-145 approved/accepted maintenance organisation's exposition, is entitled to approval of the maintenance system by the Authority.

Note: Detailed requirements are given in OPS 1.180 (a) 3 and 1.180 (b), and OPS 1.185.

OPS 1.890

Maintenance responsibility

(a) An operator shall ensure the airworthiness of the aeroplane and the serviceability of both operational and emergency equipment by:

1. The accomplishment of preflight inspections;

2. The rectification to an approved standard of any defect and damage affecting safe operation, taking into account the minimum equipment list and configuration deviation list if available for the aeroplane type;

3. The accomplishment of all maintenance in accordance with the approved operator's aeroplane maintenance programme specified in OPS 1.910;

4. The analysis of the effectiveness of the operator's approved aeroplane maintenance programme;

5. The accomplishment of any operational directive, airworthiness directive and any other continued airworthiness requirement made mandatory by the Authority; and

6. The accomplishment of modifications in accordance with an approved standard and, for non-mandatory modifications, the establishment of an embodiment policy.

(b) An operator shall ensure that the Certificate of Airworthiness for each aeroplane operated remains valid in respect of:

1. The requirements in sub-paragraph (a) above;

2. Any calendar expiry date specified in the Certificate; and

3. Any other maintenance condition specified in the Certificate.

(c) The requirements specified in sub-paragraph (a) above must be performed in accordance with procedures acceptable to the Authority.

OPS 1.895

Maintenance Management

(a) An operator must be appropriately approved in accordance with JAR-145 to carry out the requirements specified in OPS 1.890 (a) 2, 3, 5 and 6 except when the Authority is satisfied that the maintenance can be contracted to an appropriate JAR-145 approved/accepted organisation.

(b) An operator must employ a person or group of persons acceptable to the Authority to ensure that all maintenance is carried out on time to an approved standard such that the maintenance responsibility requirements prescribed in OPS 1.890 are satisfied, and to ensure the functioning of the quality system required by OPS 1.900. The person, or senior person as appropriate, is the nominated postholder referred to in OPS 1.175 (i) 2.

(c) When an operator is not appropriately approved in accordance with JAR-145, arrangements must be made with such an organisation to carry out the requirements specified in OPS 1.890 (a) 2, 3, 5 and 6. A written maintenance contract must be agreed between the operator and the JAR-145 approved/accepted maintenance organisation detailing the functions specified in OPS 1.890 (a) 2, 3, 5 and 6 and defining the support of the quality functions of OPS 1.900. This contract, together with all amendments, must be acceptable to the Authority. The Authority does not require the commercial elements of a maintenance contract.

(d) An operator must provide suitable office accommodation at appropriate locations for the personnel specified in sub-paragraph (b) above.

OPS 1.900

Quality System

(a) For maintenance purposes, the operator's quality system, as required by OPS 1.035, must additionally include at least the following functions:

1. Monitoring that the activities of OPS 1.890 are being performed in accordance with the accepted procedures;

2. Monitoring that all contracted maintenance is carried out in accordance with the contract; and

3. Monitoring the continued compliance with the requirements of this Subpart.

(b) Where the operator is approved in accordance with JAR-145, the quality system may be combined with that required by JAR-145.

OPS 1.905

Operator's Maintenance Management Exposition

(a) An operator must provide an operator's Maintenance Management exposition containing details of the organisation structure including:

1. The nominated postholder responsible for the maintenance system required by OPS 1.175 (i) 2 and the person, or group of persons, referred to in OPS 1.895 (b);

2. The procedures that must be followed to satisfy the maintenance responsibility of OPS 1.890 and the quality functions of OPS 1.900, except that where the operator is appropriately approved as a maintenance organisation in accordance with JAR145, such details may be included in the JAR145 exposition.

(b) An operator's maintenance management exposition and any subsequent amendment must be approved by the Authority.

OPS 1.910

Operator's aeroplane maintenance programme

(a) An operator must ensure that the aeroplane is maintained in accordance with the operator's aeroplane maintenance programme. The programme must contain details, including frequency, of all maintenance required to be carried out. The programme will be required to include a reliability programme when the Authority determines that such a reliability programme is necessary.

(b) An operator's aeroplane maintenance programme and any subsequent amendment must be approved by the Authority.

OPS 1.915

Operator's Aeroplane

(a) An operator must use an aeroplane technical log system containing the following information for each aeroplane:

1. Information about each flight necessary to ensure continued flight safety;

2. The current aeroplane certificate of release to service;

3. The current maintenance statement giving the aeroplane maintenance status of what scheduled and out of phase maintenance is next due except that the Authority may agree to the maintenance statement being kept elsewhere;

4. All outstanding deferred defects that affect the operation of the aeroplane; and

5. Any necessary guidance instructions on maintenance support arrangements.

(b) The aeroplane technical log and any subsequent amendment must be approved by the Authority.

OPS 1.920

Maintenance Records

(a) An operator shall ensure that the aeroplane technical log is retained for 24 months after the date of the last entry.

(b) An operator shall ensure that a system has been established to keep, in a form acceptable to the Authority, the following records for the periods specified:

1. All detailed maintenance records in respect of the aeroplane and any aeroplane component fitted thereto — 24 months after the aeroplane or aeroplane component was released to service;

2. The total time and flight cycles as appropriate, of the aeroplane and all life-limited aeroplane components 12 months after the aeroplane has been permanently withdrawn from service;

3. The time and flight cycles as appropriate, since last overhaul of the aeroplane or aeroplane component subjected to an overhaul life until the aeroplane or aeroplane component overhaul has been superseded by another overhaul of equivalent work scope and detail;

4. The current aeroplane inspection status such that compliance with the approved operator's aeroplane maintenance programme can be established until the aeroplane or aeroplane component inspection has been superseded by another inspection, of equivalent work scope and detail;

5. The current status of airworthiness directives applicable to the aeroplane and aeroplane components — 12 months after the aeroplane has been permanently withdrawn from service; and

6. Details of current modifications and repairs to the aeroplane, engine(s), propeller(s) and any other aeroplane component vital to flight safety — 12 months after the aeroplane has been permanently withdrawn from service.

(c) An operator shall ensure that when an aeroplane is permanently transferred from one operator to another operator the records specified in paragraphs (a) and (b) are also transferred and the time periods prescribed will continue to apply to the new operator.

OPS 1.930

Continued Validity of the Air Operator Certificate in Respect of the Maintenance System

An operator must comply with OPS 1.175 and 1.180 to ensure continued validity of the air operator's certificate in respect of the maintenance system.

OPS 1.935

Equivalent Safety Case

An operator shall not introduce alternative procedures to those prescribed in this Subpart unless needed and an equivalent safety case has first been approved subject to the applicable common review procedures and has been approved to do so by the Authority.

SUBPART N

FLIGHT CREW

OPS 1.940

Composition of Flight Crew

(See Appendices 1 & 2 to OPS 1.940)

(a) An operator shall ensure that:

1. The composition of the flight crew and the number of flight crew members at designated crew stations are both in compliance with, and no less than the minimum specified in, the Aeroplane Flight Manual (AFM);

2. The flight crew includes additional flight crew members when required by the type of operation, and is not reduced below the number specified in the Operations Manual;

3. All flight crew members hold an applicable and valid licence acceptable to the Authority and are suitably qualified and competent to conduct the duties assigned to them;

4. Procedures are established, acceptable to the Authority, to prevent the crewing together of inexperienced flight crew members;

5. One pilot amongst the flight crew, qualified as a pilot-in-command in accordance with the applicable regulations in the field of Flight Crew Licensing, is designated as the commander who may delegate the conduct of the flight to another suitably qualified pilot; and

6. When a dedicated System Panel Operator is required by the AFM, the flight crew includes one crew member who holds a Flight Engineer's licence or is a suitably qualified flight crew member and acceptable to the Authority.

7. An operator shall ensure that when engaging the services of flight crew members who are self-employed and/or working on a freelance or part-time basis, the requirements of Subpart N are complied with. In this respect, particular attention must be paid to the total number of aircraft types or variants that a flight crew member may fly for the purposes of commercial air transportation, which must not exceed the requirements prescribed in OPS 1.980 and OPS 1.981, including when his services are engaged by another operator

(b) *Minimum flight crew for operations under IFR or at night*

For operations under IFR or at night, an operator shall ensure that:

1. For all turbo-propeller aeroplanes with a maximum approved passenger seating configuration of more than 9 and for all turbo-jet aeroplanes, the minimum flight crew is 2 pilots; or

2. Aeroplanes other than those covered by sub-paragraph (b) 1 above are operated by a single pilot provided that the requirements of Appendix 2 to OPS 1.940 are satisfied. If the requirements of Appendix 2 are not satisfied, the minimum flight crew is 2 pilots.

OPS 1.945

Conversion Training and checking

(See Appendix 1 to OPS 1.945)

(a) An operator shall ensure that:

1. A flight crew member completes a Type Rating course which satisfies the requirements governing flight crew licences when changing from one type of aeroplane to another type or class for which a new type or class rating is required;

2. A flight crew member completes an operator's conversion course before commencing unsupervised line flying;

(i) When changing to an aeroplane for which a new type or class rating is required; or

(ii) When changing operator;

3. Conversion training is conducted by suitably qualified persons in accordance with a detailed course syllabus included in the Operations Manual acceptable to the Authority;

4. The amount of training required by the operator's conversion course is determined after due note has been taken of the flight crew member's previous training as recorded in his training records prescribed in OPS 1.985;

5. The minimum standards of qualification and experience required of flight crew members before undertaking conversion training are specified in the Operations Manual;

6. Each flight crew member undergoes the checks required by OPS 1.965 (b) and the training and checks required by OPS 1.965 (d) before commencing line flying under supervision;

7. Upon completion of line flying under supervision, the check required by OPS 1.965 (c) is undertaken;

8. Once an operator's conversion course has been commenced, a flight crew member does not undertake flying duties on another type or class until the course is completed or terminated; and

9. Crew Resource Management training is incorporated in the conversion course.

(b) In the case of changing aeroplane type or class, the check required by OPS 1.965 (b) may be combined with the type or class rating skill test.

(c) The operator's conversion course and the Type or Class Rating course may be combined.

OPS 1.950

Differences Training and Familiarisation Training

(a) An operator shall ensure that a flight crew member completes:

1. Differences training

(i) When operating another variant of an aeroplane of the same type or another type of the same class currently operated; or

(ii) When a change of equipment and/or procedures on types or variants currently operated, requires additional knowledge and training on an appropriate training device.

2. Familiarisation training

(i) When operating another aeroplane of the same type or variant; or

(ii) When a change of equipment and/or procedures on types or variants currently operated, requires the acquisition of additional knowledge.

(b) The operator shall specify in the Operations Manual when such differences training or familiarisation training is required.

OPS 1.955

Nomination as commander

(a) An operator shall ensure that for upgrade to commander from co-pilot and for those joining as commanders:

1. A minimum level of experience, acceptable to the Authority, is specified in the Operations Manual; and

2. For multi-crew operations, the pilot completes an appropriate command course.

(b) The command course required by sub-paragraph (a) 2 above must be specified in the Operations Manual and include at least the following:

1. Training in a flight simulator (including Line Orientated Flying Training) and/or flying training;

2. An operator proficiency check operating as commander;

3. Commander's responsibilities;

4. Line training in command under supervision. A minimum of 10 sectors is required for pilots already qualified on the aeroplane type;

5. Completion of a commander's line check as prescribed in OPS 1.965(c) and route and aerodrome competence qualifications as prescribed in OPS 1.975; and

6. Crew Resource Management training.

OPS 1.960

Commanders holding a Commercial Pilot Licence

An operator shall ensure that:

1. A Commercial Pilot Licence (CPL) holder does not operate as a commander of an aeroplane certificated in the Aeroplane Flight Manual for single pilot operations unless:

(i) When conducting passenger carrying operations under Visual Flight Rules (VFR) outside a radius of 50 nm from an aerodrome of departure, the pilot has a minimum of 500 hours total flight time on aeroplanes or holds a valid Instrument Rating; or

(ii) When operating on a multi-engine type under Instrument Flight Rules (IFR), the pilot has a minimum of 700 hours total flight time on aeroplanes which includes 400 hours as pilot-in-command of which 100 hours have been under IFR including 40 hours multi-engine operation. The 400 hours as pilot-in-command may be substituted by hours operating as co-pilot on the basis of two hours co-pilot is equivalent to one hour as pilot-in-command provided those hours were gained within an established multi-pilot crew system prescribed in the Operations Manual;

2. In addition to sub-paragraph 1 (ii) above, when operating under IFR as a single pilot, the requirements prescribed in Appendix 2 to OPS 1.940 are satisfied; and

3. In multi-pilot crew operations, in addition to sub-paragraph 1 above, and prior to the pilot operating as commander, the command course prescribed in OPS 1.955 (a) 2 is completed.

OPS 1.965

Recurrent Training and Checking

(See Appendices 1 & 2 to OPS 1.965)

(a) *General*

An operator shall ensure that:

1. Each flight crew member undergoes recurrent training and checking and that all such training and checking is relevant to the type or variant of aeroplane on which the crew member is certificated to operate;

2. A recurrent training and checking programme is established in the Operations Manual and approved by the Authority;

3. Recurrent training is conducted by the following personnel:

(i) Ground and refresher training — by a suitably qualified person;

(ii) Aeroplane/flight simulator training — by a Type Rating Instructor/Examiner or by a Type Rating Instructor (synthetic flight instruction);

(iii) Emergency and safety equipment training and checking — by suitably qualified personnel; and

(iv) Crew Resource Management (CRM) training — by suitably qualified personnel;

4. Recurrent checking is conducted by the following personnel:

(i) Operator proficiency checks — by a Type Rating Examiner; and

(ii) Line checks — by commanders nominated by the operator and acceptable to the Authority; and

5. Each flight crew member undergoes operator proficiency checks as part of a normal flight crew complement.

(b) *Operator Proficiency Check*

1. An operator shall ensure that:

(i) Each flight crew member undergoes operator proficiency checks to demonstrate his competence in carrying out normal, abnormal and emergency procedures; and

(ii) The check is conducted without external visual reference when the flight crew member will be required to operate under IFR.

2. The period of validity of an operator proficiency check shall be 6 calendar months in addition to the remainder of the month of issue. If issued within the final 3 calendar months of validity of a previous operator proficiency check, the period of validity shall extend from the date of issue until 6 calendar months from the expiry date of that previous operator proficiency check.

(c) *Line Check*

An operator shall ensure that each flight crew member undergoes a line check on the aeroplane to demonstrate his competence in carrying out normal line operations described in the Operations Manual. The period of validity of a line check shall be 12 calendar months, in addition to the remainder of the month of issue. If issued within the final 3 calendar months of validity of a previous line check the period of validity shall extend from the date of issue until 12 calendar months from the expiry date of that previous line check.

(d) *Emergency and Safety Equipment training and checking*

An operator shall ensure that each flight crew member undergoes training and checking on the location and use of all emergency and safety equipment carried. The period of validity of an emergency and safety equipment check shall be 12 calendar months in addition to the remainder of the month of issue. If issued within the final 3 calendar months of validity of a previous emergency and safety check, the period of validity shall extend from the date of issue until 12 calendar months from the expiry date of that previous emergency and safety equipment check.

(e) *Crew Resource Management*

An operator shall ensure that each flight crew member undergoes Crew Resource Management training as part of recurrent training.

(f) *Ground and Refresher training*

An operator shall ensure that each flight crew member undergoes ground and refresher training every 12 calendar months. If the training is conducted within 3 calendar months prior to the expiry of the 12 calendar months period, the next ground and refresher training must be completed within 12 calendar months of the original expiry date of the previous ground and refresher training.

(g) *Aeroplane/flight simulator training*

An operator shall ensure that each flight crew member undergoes aeroplane/flight simulator training at least every 12 calendar months. If the training is conducted within 3 calendar months prior to the expiry of the 12 calendar months period, the next aeroplane/flight simulator training must be completed within 12 calendar months of the original expiry date of the previous aeroplane/flight simulator training.

OPS 1.968

Pilot qualification to operate in either pilot's seat

(See Appendix 1 to OPS 1.968)

An operator shall ensure that:

1. A pilot who may be assigned to operate in either pilot's seat completes appropriate training and checking; and

2. The training and checking programme is specified in the Operations Manual and is acceptable to the Authority.

OPS 1.970

Recent experience

(a) An operator shall ensure that:

1. Commander: A pilot does not operate an aeroplane as commander unless he has carried out at least three take-offs and three landings as pilot flying in an aeroplane of the same type or a flight simulator, qualified and approved for the purpose in accordance with the applicable regulations in the field of Synthetic Training Devices, of the aeroplane type to be used, in the preceding 90 days; and

2. Co-pilot: A co-pilot does not serve at the flight controls during take-off and landing unless he has served as a pilot at the controls during take-off and landing in an aeroplane of the same type or a flight simulator qualified and approved for the purpose in accordance with the applicable regulations in the field of Synthetic Training Devices of the aeroplane type to be used, in the preceding 90 days.

(b) The 90 day period prescribed in sub-paragraphs (a) 1 and 2 above may be extended up to a maximum of 120 days by line flying under the supervision of a Type Rating Instructor or Examiner. For periods beyond 120 days, the recency requirement is satisfied by a training flight or use of an approved flight simulator.

OPS 1.975

Pilot-in-command — Route and Aerodrome Competence Qualification

(a) An operator shall ensure that, prior to being assigned as pilot-in-command, the pilot has obtained adequate knowledge of the route to be flown and of the aerodromes (including alternates), facilities and procedures to be used.

(b) The period of validity of the route and aerodrome competence qualification shall be 12 calendar months in addition to the remainder of:

1. The month of qualification; or

2. The month of the latest operation on the route or to the aerodrome.

(c) Route and aerodrome competence qualification shall be revalidated by operating on the route or to the aerodrome within the period of validity prescribed in sub-paragraph (b) above.

(d) If revalidated within the final 3 calendar months of the validity of the previous route and aerodrome competence qualification, the period of validity shall extend from the date of revalidation until 12 calendar months from the expiry date of that previous route and aerodrome competence qualification.

OPS 1.978

Advanced Qualification Programme

(a) The periods of validity of OPS 1.965 and 1.970 may be extended, where the Authority has approved an Advanced Qualification Programme established by the operator.

(b) The Advanced Qualification Programme must contain training and checking which establishes and maintains a proficiency that is not less than the provisions prescribed in OPS 1.945, 1.965 and 1.970.

OPS 1.980

Operation on more than one type or variant

(see Appendix 1 to OPS 1.980)

(a) An operator shall ensure that a flight crew member does not operate on more than one type or variant unless the flight crew member is competent to do so.

(b) When considering operations of more than one type or variant, an operator shall ensure that the differences and/or similarities of the aeroplanes concerned justify such operations, taking account of the following:

1. The level of technology;

2. Operational procedures;

3. Handling characteristics.

(c) An Operator shall ensure that a flight crew member operating more than one type or variant complies with all of the requirements prescribed in Subpart N for each type or variant unless the Authority has approved the use of credit(s) related to the training, checking and recent experience requirements.

(d) An operator shall specify appropriate procedures and/or operational restrictions, approved by the Authority, in the Operations Manual, for any operation on more than one type or variant covering:

1. The flight crew members' minimum experience level;

2. The minimum experience level on one type or variant before beginning training for and operation of another type or variant;

3. The process whereby flight crew qualified on one type or variant will be trained and qualified on another type or variant;

4. All applicable recent experience requirements for each type or variant.

OPS 1.981

Operation of helicopter and aeroplane

When a flight crew member operates both helicopters and aeroplanes:

1. An operator shall ensure that operations of helicopter and aeroplane are limited to one type of each.

2. The operator shall specify appropriate procedures and/or operational restrictions, approved by the Authority, in the Operations Manual.

OPS 1.985

Training Records

An operator shall:

1. Maintain records of all training, checking and qualification prescribed in OPS 1.945, 1.955, 1.965, 1.968 and 1.975 undertaken by a flight crew member; and

2. Make the records of all conversion courses and recurrent training and checking available, on request, to the flight crew member concerned.

Appendix 1 to OPS 1.940

In-flight relief of flight crew members

(a) A flight crew member may be relieved in flight of his duties at the controls by another suitably qualified flight crew member.

(b) *Relief of the Commander*

The commander may be relieved by:

(i) Another pilot qualified as commander; or

(ii) A pilot-in-command (PIC) qualified as detailed in sub-paragraph (c) below.

(c) Minimum requirements for PIC relieving the commander:

1. Valid Airline Transport Pilot Licence;

2. Conversion training and checking (including Type Rating training) as prescribed in OPS 1.945;

3. All recurrent training and checking as prescribed in OPS 1.965;

4. Recent experience as prescribed in OPS 1.970;

5. PIC route competence qualification as prescribed in OPS 1.975; and

6. To operate in the role of PIC in the cruise only and not below FL 200.

(d) *Relief of the co-pilot*

The co-pilot may be relieved by:

(i) Another suitably qualified pilot; or

(ii) A cruise relief co-pilot qualified as detailed in sub-paragraph (e) below.

(e) *Minimum requirements for Cruise Relief Co-Pilot*

1. Valid Commercial Pilot Licence with Instrument Rating;

2. Conversion training and checking, including Type Rating training, as prescribed in OPS 1.945 except the requirement for take-off and landing training;

3. All recurrent training and checking as prescribed in OPS 1.965 except the requirement for take-off and landing training; and

4. To operate in the role of co-pilot in the cruise only and not below FL 200.

5. Recent experience as prescribed in OPS 1.970 is not required. The pilot shall, however, carry out flight simulator recency and refresher flying skill training at intervals not exceeding 90 days. This refresher training may be combined with the training prescribed in OPS 1.965.

(f) *Relief of the system panel operator*

A system panel operator may be relieved in flight by a crew member who holds a Flight Engineer's licence or by a suitably qualified flight crew member and acceptable to the Authority.

Appendix 2 to OPS 1.940

Single pilot operations under IFR or at night

Aeroplanes referred to in OPS 1.940 (b) 2 may be operated by a single pilot under IFR or at night when the following requirements are satisfied:

1. The operator shall include in the Operations Manual a pilot's conversion and recurrent training programme which includes the additional requirements for a single pilot operation;

2. In particular, the cockpit procedures must include:

(i) Engine management and emergency handling;

(ii) Use of normal, abnormal and emergency checklist;

(iii) ATC communication;

(iv) Departure and approach procedures;

(v) Autopilot management; and

(vi) Simplified in-flight documentation;

3. The recurrent checks required by OPS 1.965 shall be performed in the single-pilot role on the type or class of aeroplane in an environment representative of the operation;

4. The pilot shall have a minimum of 50 hours flight time on the specific type or class of aeroplane under IFR of which 10 hours is as pilot-in-command; and

5. The minimum required recent experience for a pilot engaged in a single-pilot operation under IFR or at night shall be 5 IFR flights, including 3 instrument approaches, carried out during the preceding 90 days on the type or class of aeroplane in the single-pilot role. This requirement may be replaced by an IFR instrument approach check on the type or class of aeroplane.

Appendix 1 to OPS 1.945

Operator's Conversion Course

(a) An operator's conversion course shall include:

1. Ground training and checking including aeroplane systems, normal, abnormal and emergency procedures;

2. Emergency and safety equipment training and checking which must be completed before aeroplane training commences;

3. Crew Resource Management training;

4. Aeroplane/flight simulator training and checking; and

5. Line flying under supervision and line check.

(b) The conversion course shall be conducted in the order set out in sub-paragraph (a) above.

(c) When a flight crew member has not previously completed an operator's conversion course, the operator shall ensure that in addition to sub-paragraph (a) above, the flight crew member undergoes general first aid training and, if applicable, ditching procedures training using the equipment in water.

Appendix 1 to OPS 1.965

Recurrent training and checking — Pilots

(a) *Recurrent Training*

Recurrent training shall comprise:

1. Ground and refresher training

(i) The ground and refresher training programme shall include:

(A) Aeroplane systems;

(B) Operational procedures and requirements including ground de-/anti-icing and pilot incapacitation; and

(C) Accident/Incident and occurrence review.

(ii) Knowledge of the ground and refresher training shall be verified by a questionnaire or other suitable methods.

2. Aeroplane/Flight Simulator training

(i) The aeroplane/flight simulator training programme shall be established such that all major failures of aeroplane systems and associated procedures will have been covered in the preceding 3 year period.

(ii) When engine-out manoeuvres are carried out in an aeroplane, the engine failure shall be simulated.

(iii) Aeroplane/flight simulator training may be combined with the operator proficiency check.

3. Emergency and Safety Equipment Training

(i) The emergency and safety equipment training programme may be combined with emergency and safety equipment checking and shall be conducted in an aeroplane or a suitable alternative training device.

(ii) Every year the emergency and safety equipment training programme must include the following:

(A) Actual donning of a lifejacket where fitted;

(B) Actual donning of protective breathing equipment;

(C) Actual handling of fire extinguishers;

(D) Instruction on the location and use of all emergency and safety equipment carried on the aeroplane;

(E) Instruction on the location and use of all types of exits; and

(F) Security procedures.

(iii) Every 3 years the programme of training must include the following:

(A) Actual operation of all types of exits;

(B) Demonstration of the method used to operate a slide where fitted;

(C) Actual fire-fighting using equipment representative of that carried in the aeroplane on an actual or simulated fire except that, with Halon extinguishers, an alternative method acceptable to the Authority may be used;

(D) The effects of smoke in an enclosed area and actual use of all relevant equipment in a simulated smoke-filled environment;

(E) Actual handling of pyrotechnics, real or simulated, where fitted; and

(F) Demonstration in the use of the life-raft(s) where fitted.

4. Crew Resource Management training

(b) *Recurrent checking*

Recurrent checking shall comprise:

1. Operator proficiency checks;

(i) Where applicable, operator proficiency checks shall include the following manoeuvres:

(A) Rejected take-off when a flight simulator is available, otherwise touch drills only;

(B) Take-off with engine failure between V_1 and V_2 or as soon as safety considerations permit;

(C) Precision instrument approach to minima with, in the case of multi-engined aeroplanes, one engine inoperative;

(D) Non-precision approach to minima;

(E) Missed approach on instruments from minima with, in the case of multi-engined aeroplanes, one engine inoperative; and

(F) Landing with one engine inoperative. For single-engined aeroplanes a practice forced landing is required.

(ii) When engine out manoeuvres are carried out in an aeroplane, the engine failure must be simulated.

(iii) In addition to the checks prescribed in sub-paragraphs (i) (A) to (F) above, the requirements governing the issue of flight crew licences must be completed every 12 months and may be combined with the operator proficiency check.

(iv) For a pilot operating VFR only, the checks prescribed in sub-paragraphs (i) (C) to (E) above may be omitted except for an approach and go-around in a multi-engine aeroplane with one engine inoperative.

(v) Operator proficiency checks must be conducted by a Type Rating Examiner.

2. Emergency and safety equipment checks

The items to be checked shall be those for which training has been carried out in accordance with sub-paragraph (a) 3 above.

3. Line checks

(i) Line checks must establish the ability to perform satisfactorily a complete line operation including pre-flight and post-flight procedures and use of the equipment provided, as specified in the Operations Manual.

(ii) The flight crew must be assessed on their Crew Resource Management skills.

(iii) When pilots are assigned duties as pilot flying and pilot non-flying they must be checked in both functions.

(iv) Line checks must be completed in an aeroplane.

(v) Line checks must be conducted by commanders nominated by the operator and acceptable to the Authority.

Appendix 2 to OPS 1.965

Recurrent training and checking — System Panel Operators

(a) The recurrent training and checking for System Panel Operators shall meet the requirements for pilots and any additional specific duties, omitting those items that do not apply to System Panel Operators.

(b) Recurrent training and checking for System Panel Operators shall, whenever possible, take place concurrently with a pilot undergoing recurrent training and checking.

(c) A line check shall be conducted by a commander nominated by the operator and acceptable to the Authority or by a System Panel Operator Type Rating Instructor or Examiner.

Appendix 1 to OPS 1.968

Pilot qualification to operate in either pilot's seat

(a) Commanders whose duties also require them to operate in the right-hand seat and carry out the duties of co-pilot, or commanders required to conduct training or examining duties from the right-hand seat, shall complete additional training and checking as specified in the Operations Manual, concurrent with the operator proficiency checks prescribed in OPS 1.965 (b). This additional training must include at least the following:

1. An engine failure during take-off;

2. A one engine inoperative approach and go-around; and

3. A one engine inoperative landing.

(b) When engine-out manoeuvres are carried out in an aeroplane, the engine failure must be simulated.

(c) When operating in the right-hand seat, the checks required by OPS for operating in the left-hand seat must, in addition, be valid and current.

(d) A pilot relieving the commander as pilot-in-command shall demonstrate practice of drills and procedures, concurrent with the operator proficiency checks prescribed in OPS 1.965 (b), which would otherwise have been the commander's responsibility as pilot-in-command. Where the differences between left and right seats are not significant (for example because of use of autopilot) then practice may be conducted in either seat.

(e) A pilot other than the commander occupying the left-hand seat shall demonstrate practice of drills and procedures, concurrent with the operator proficiency checks prescribed in OPS 1.965 (b), which would otherwise have been the commander's responsibility acting as pilot non-flying. Where the differences between left and right seats are not significant (for example because of use of autopilot) then practice may be conducted in either seat.

Appendix 1 to OPS 1.980

Operation on more than one type or variant

(a) When a flight crew member operates more than one aeroplane type or variant within one or more licence endorsement (type — multi-pilot), an operator shall ensure that:

1. The minimum flight crew complement specified in the Operations Manual is the same for each type or variant to be operated;

2. A flight crew member does not operate more than two aeroplane types or variants for which a separate licence endorsement is required; and

3. Only aeroplanes within one licence endorsement are flown in any one flight duty period unless the operator has established procedures to ensure adequate time for preparation.

(b) When a flight crew member operates more than one aeroplane class, type or variant (class- and/or type-single pilot), but not within a single licence endorsement, an operator must comply with the following:

1. A flight crew member shall not operate more than:

(i) Three piston-engined aeroplane types or variants; or

(ii) Three turbo-propeller aeroplane types *or variants;* or

(iii) One turbo-propeller aeroplane type or variant and one piston engined aeroplane type or variant; or

(iv) One turbo-propeller aeroplane type or variant and any aeroplane within a particular class.

2. OPS 1.965 for each type or variant operated unless the operator has demonstrated specific procedures and/or operational restrictions, which are acceptable to the Authority.

(c) When a flight crew member operates more than one aeroplane type or variant (type - single pilot and type - multi pilot), but not within a single licence endorsement, an operator must comply with the following:

1. Subparagraphs (a) 1, (a) 2 and (a) 3 above;

2. Subparagraph (d) below.

(d) When a flight crew member operates more than one aeroplane type or variant (type — multi pilot), but not within a single licence endorsement, an operator must comply with the following:

1. Subparagraphs (a) 1, (a) 2 and (a) 3 above;

2. Before exercising the privileges of 2 licence endorsements:

(i) Flight crew members must have completed two consecutive operator proficiency checks and must have 500 hours in the relevant crew position in commercial air transport operations with the same operator.

(ii) In the case of a pilot having experience with an operator and exercising the privileges of 2 licence endorsements, and then being promoted to command with the same operator on one of those types, the required minimum experience as commander is 6 months and 300 hours, and the pilot must have completed 2 consecutive operator proficiency checks before again being eligible to exercise 2 licence endorsements.

3. Before commencing training for and operation of another type or variant, flight crew members must have completed 3 months and 150 hours flying on the base aeroplane, and this must include at least one proficiency check.

4. After completion of the initial line check on the new type, 50 hours flying or 20 sectors must be achieved solely on aeroplanes of the new type rating.

5. OPS 1.970 for each type operated unless credits have been allowed by the Authority in accordance with sub-paragraph 7 below.

6. The period within which line flying experience is required on each type must be specified in the Operations Manual.

7. Where credits are sought to reduce the training and checking and recent experience requirements between aeroplane types, the operator must demonstrate to the Authority which items need not be repeated on each type or variant because of similarities

   (i) OPS 1.965 (b) requires two operator proficiency checks every year. When credit is given in accordance with sub-paragraph 7 above for operator proficiency checks to alternate between the two types, each operator proficiency check revalidates the operator proficiency check for the other type. Provided that the period between Licence proficiency checks does not exceed that prescribed in the applicable regulation in the field of Flight Crew Licensing for each type, the relevant requirements on Flight Crew Licensing will be satisfied. In addition relevant and approved recurrent training must be specified in the Operations Manual.

   (ii) OPS 1.965 (c) requires one line check every year. When credit is given in accordance with sub-paragraph 7 above for line checks to alternate between types or variants, each line check revalidates the line check for the other type or variant.

   (iii) Annual emergency and safety equipment training and checking must cover all requirements for each type.

8. OPS 1.965 for each type or variant operated unless credits have been allowed by the Authority in accordance with sub-paragraph 7 above.

(e) When a flight crew member operates combinations of aeroplane types or variants (class- single pilot and type - multi pilot) an operator must demonstrate that specific procedures and/or operational restrictions are approved in accordance with OPS 1.980 (d).

SUBPART O

CABIN CREW

OPS 1.988

Applicability

An operator shall ensure that all crew members, other than flight crew members, assigned by the operator to duties in the passenger compartment of an aeroplane comply with the requirements of this Subpart and the applicable safety rules except for additional crew members solely assigned to non-safety related duties.

OPS 1.990

Number and composition of Cabin Crew

(a) An operator shall not operate an aeroplane with a maximum approved passenger seating configuration of more than 19, when carrying one or more passengers, unless at least one cabin crew member is included in the crew for the purpose of performing duties, specified in the Operations Manual, in the interests of the safety of passengers.

(b) When complying with sub-paragraph (a) above, an operator shall ensure that the minimum number of cabin crew is the greater of:

   1. One cabin crew member for every 50, or fraction of 50, passenger seats installed on the same deck of the aeroplane; or

   2. The number of cabin crew who actively participated in the aeroplane cabin during the relevant emergency evacuation demonstration, or who were assumed to have taken part in the relevant analysis, except that, if the maximum approved passenger seating configuration is less than the number evacuated during the demonstration by at least 50 seats, the number of cabin crew may be reduced by 1 for every whole multiple of 50 seats by which the maximum approved passenger seating configuration falls below the certificated maximum capacity.

(c) The Authority may under exceptional circumstances require an operator to include in the crew additional cabin crew members.

(d) In unforeseen circumstances the required minimum number of cabin crew may be reduced provided that:

   1. The number of passengers has been reduced in accordance with procedures specified in the Operations Manual; and

   2. A report is submitted to the Authority after completion of the flight.

(e) An operator shall ensure that when engaging the services of cabin crew members who are self-employed and/or working on a freelance or part-time basis, the requirements of subpart O are complied with. In this respect, particular attention must be paid to the total number of aircraft types or variants that a cabin crew member may fly for the purposes of commercial air transportation, which must not exceed the requirements prescribed in OPS 1.1030, including when his services are engaged by another operator.

OPS 1.995

Minimum requirements

(a) An operator shall ensure that each cabin crew member fulfils the applicable minimum age and medical requirements.

(b) An operator shall ensure that each cabin crew member is competent to perform his duties in accordance with procedures specified in the Operations Manual.

OPS 1.1000

Senior cabin crew members

(a) An operator shall nominate a senior cabin crew member whenever more than one cabin crew member is assigned.

(b) The senior cabin crew member shall have responsibility to the commander for the conduct and co-ordination of cabin safety and emergency procedure(s) specified in the Operations Manual.

(c) Where required by OPS 1.990 to carry more than one cabin crew member, an operator shall not appoint a person to the post of senior cabin crew member unless that person has at least one year's experience as an operating cabin crew member and has completed an appropriate course.

(d) An operator shall establish procedures to select the next most suitably qualified cabin crew member to operate as senior cabin crew member in the event of the nominated senior cabin crew member becoming unable to operate. Such procedures must be acceptable to the Authority and take account of a cabin crew member's operational experience.

OPS 1.1005

Initial training

An operator shall ensure that each cabin crew member successfully completes initial training, approved by the Authority, in accordance with the applicable requirements and holds an attestation of professional competence describing the training successfully undertaken by a cabin crew member.

OPS 1.1010

Conversion and differences training

An operator shall ensure that each cabin crew member has completed appropriate training, in accordance with the applicable rules and as specified in the Operations Manual, before undertaking assigned duties as follows:

1. Conversion training

A conversion course must be completed before being:

(i) First assigned by the operator to operate as a cabin crew member; or

(ii) Assigned to operate another aeroplane type; and

2. Differences training

Differences training must be completed before operating:

(i) On a variant of an aeroplane type currently operated; or

(ii) With different safety equipment, safety equipment location, or normal and emergency safety procedures on currently operated aeroplane types or variants.

OPS 1.1012

Familiarisation flights

An operator shall ensure that, following completion of conversion training, each cabin crew member completes familiarisation prior to operating as one of the minimum number of cabin crew required by OPS 1.990 (b).

OPS 1.1015

Recurrent training

(a) An operator shall ensure that each cabin crew member undergoes recurrent training, covering the actions assigned to each crew member in normal and emergency procedures and drills relevant to the type(s) and/or variant(s) of aeroplane on which they operate in accordance with the applicable requirements.

(b) An operator shall ensure that the recurrent training and checking programme approved by the Authority includes theoretical and practical instruction, together with individual practice.

(c) The period of validity of recurrent training and the associated checking required by OPS 1.1025 shall be 12 calendar months in addition to the remainder of the month of issue. If issued within the final 3 calendar months of validity of a previous check, the period of validity shall extend from the date of issue until 12 calendar months from the expiry date of that previous check.

OPS 1.1020

Refresher Training

(See Appendix 1 to OPS 1.1020)

(a) An operator shall ensure that each cabin crew member who has been absent from all flying duties for more than 6 months and still remains within the period of the previous check required by OPS 1.1025 (b) 3 completes refresher training specified in the Operations Manual as prescribed in Appendix 1 to OPS 1.1020.

(b) An operator shall ensure that when a cabin crew member has not been absent from all flying duties, but has not, during the preceding 6 months, undertaken duties on a type of aeroplane as a cabin crew member required by OPS 1.990 (b), before undertaking such duties on that type, the cabin crew member either:

1. Completes refresher training on the type; or

2. Operates two re-familiarisation sectors during commercial operations on the type.

OPS 1.1025

Checking

An operator shall ensure that during or following completion of the training required by OPS 1.1010 and 1.1015, each cabin crew member undergoes a check covering the training received in order to verify his proficiency in carrying out normal and emergency safety duties. These checks must be performed by personnel acceptable to the Authority.

OPS 1.1030

Operation on more than one type or variant

(a) An operator shall ensure that each cabin crew member does not operate on more than three aeroplane types except that, with the approval of the Authority, the cabin crew member may operate on four aeroplane types, provided that safety equipment and emergency procedures for at least two of the types are similar.

(b) For the purposes of sub-paragraph (a) above, variants of an aeroplane type are considered to be different types if they are not similar in all the following aspects:

1. Emergency exit operation;

2. Location and type of safety equipment; and

3. Emergency procedures.

OPS 1.1035

Training records

An operator shall:

1. Maintain records of all training and checking required by OPS 1.1005, 1.1010, 1.1015, 1.1020 and 1.1025; and

2. Make the records of all conversion and recurrent training and checking available, on request, to the cabin crew member concerned.

Appendix 1 to OPS 1.1020

Refresher training

An operator shall ensure that refresher training is conducted by suitable qualified persons and, for each cabin crew member, includes at least the following:

1. Emergency procedures including pilot incapacitation;

2. Evacuation procedures including crowd control techniques;

3. The operation and actual opening of all normal and emergency exits for passenger evacuation in an aeroplane or representative training device;

4. Demonstration of the operation of all other exits including flight deck windows; and

5. The location and handling of emergency equipment, including oxygen systems, and the donning of lifejackets, portable oxygen and protective breathing equipment.

SUBPART P

MANUALS, LOGS AND RECORDS

OPS 1.1040

General Rules for Operations Manuals

(a) An operator shall ensure that the Operations Manual contains all instructions and information necessary for operations personnel to perform their duties.

(b) An operator shall ensure that the contents of the Operations Manual, including all amendments or revisions, do not contravene the conditions contained in the Air Operator Certificate (AOC) or any applicable regulations and are acceptable to, or, where applicable, approved by, the Authority.

(c) Unless otherwise approved by the Authority, or prescribed by national law, an operator must prepare the Operations Manual in the English language. In addition, an operator may translate and use that manual, or parts thereof, into another language.

(d) Should it become necessary for an operator to produce new Operations Manuals or major parts/volumes thereof, he must comply with sub-paragraph (c) above. In all other cases, an operator must comply with sub-paragraph (c) above as soon as possible and in no case later than 1 December 2000.

(e) An operator may issue an Operations Manual in separate volumes.

(f) An operator shall ensure that all operations personnel have easy access to a copy of each part of the Operations Manual which is relevant to their duties. In addition, the operator shall supply crew members with a personal copy of, or sections from, Parts A and B of the Operations Manual as are relevant for personal study.

(g) An operator shall ensure that the Operations Manual is amended or revised so that the instructions and information contained therein are kept up to date. The operator shall ensure that all operations personnel are made aware of such changes that are relevant to their duties.

(h) Each holder of an Operations Manual, or appropriate parts of it, shall keep it up to date with the amendments or revisions supplied by the operator.

(i) An operator shall supply the Authority with intended amendments and revisions in advance of the effective date. When the amendment concerns any part of the Operations Manual which must be approved in accordance with OPS, this approval shall be obtained before the amendment becomes effective. When immediate amendments or revisions are required in the interest of safety, they may be published and applied immediately, provided that any approval required has been applied for.

(j) An operator shall incorporate all amendments and revisions required by the Authority.

(k) An operator must ensure that information taken from approved documents, and any amendment of such approved documentation, is correctly reflected in the Operations Manual and that the Operations Manual contains no information contrary to any approved documentation. However, this requirement does not prevent an operator from using more conservative data and procedures.

(l) An operator must ensure that the contents of the Operations Manual are presented in a form in which they can be used without difficulty.

(m) An operator may be permitted by the Authority to present the Operations Manual or parts thereof in a form other than on printed paper. In such cases, an acceptable level of accessibility, usability and reliability must be assured.

(n) The use of an abridged form of the Operations Manual does not exempt the operator from the requirements of OPS 1.130.

OPS 1.1045

Operations Manual structure and contents

(See Appendix 1 to OPS 1.1045)

(a) An operator shall ensure that the main structure of the Operations Manual is as follows:

Part A — General/Basic

This part shall comprise all non type-related operational policies, instructions and procedures needed for a safe operation.

Part B — Aeroplane Operating Matters

This part shall comprise all type-related instructions and procedures needed for a safe operation. It shall take account of any differences between types, variants or individual aeroplanes used by the operator.

Part C — Route and Aerodrome Instructions and Information

This part shall comprise all instructions and information needed for the area of operation.

Part D — Training

This part shall comprise all training instructions for personnel required for a safe operation.

(b) An operator shall ensure that the contents of the Operations Manual are in accordance with Appendix 1 to OPS 1.1045 and relevant to the area and type of operation.

(c) An operator shall ensure that, the detailed structure of the Operations Manual is acceptable to the Authority.

OPS 1.1050

Aeroplane Flight Manual

An operator shall keep a current approved Aeroplane Flight Manual or equivalent document for each aeroplane that it operates.

OPS 1.1055

Journey log

(a) An operator shall retain the following information for each flight in the form of a Journey Log:

1. Aeroplane registration;
2. Date;
3. Name(s) of crew member(s);
4. Duty assignment of crew member(s);
5. Place of departure;
6. Place of arrival;
7. Time of departure (off-block time);
8. Time of arrival (on-block time);
9. Hours of flight;
10. Nature of flight;
11. Incidents, observations (if any); and
12. Commander's signature (or equivalent).

(b) An operator may be permitted not to keep an aeroplane journey log, or parts thereof, by the Authority if the relevant information is available in other documentation.

(c) An operator shall ensure that all entries are made concurrently and that they are permanent in nature.

OPS 1.1060

Operational flight plan

(a) An operator must ensure that the operational flight plan used and the entries made during flight contain the following items:

1. Aeroplane registration;
2. Aeroplane type and variant;
3. Date of flight;
4. Flight identification;

5. Names of flight crew members;

6. Duty assignment of flight crew members;

7. Place of departure;

8. Time of departure (actual off-block time, take-off time);

9. Place of arrival (planned and actual);

10. Time of arrival (actual landing and on-block time);

11. Type of operation (ETOPS, VFR, Ferry flight, etc.)

12. Route and route segments with checkpoints/waypoints, distances, time and tracks;

13. Planned cruising speed and flying times between check-points/waypoints. Estimated and actual times overhead;

14. Safe altitudes and minimum levels;

15. Planned altitudes and flight levels;

16. Fuel calculations (records of in-flight fuel checks);

17. Fuel on board when starting engines;

18. Alternate(s) for destination and, where applicable, take-off and en-route, including information required in sub-paragraphs 12, 13, 14, and 15 above;

19. Initial ATS Flight Plan clearance and subsequent re-clearance;

20. In-flight re-planning calculations; and

21. Relevant meteorological information.

(b) Items which are readily available in other documentation or from an acceptable source or are irrelevant to the type of operation may be omitted from the operational flight plan.

(c) An operator must ensure that the operational flight plan and its use is described in the Operations Manual.

(d) An operator shall ensure that all entries on the operational flight plan are made concurrently and that they are permanent in nature.

OPS 1.1065

Document storage periods

An operator shall ensure that all records and all relevant operational and technical information for each individual flight, are stored for the periods prescribed in Appendix 1 to OPS 1.1065.

OPS 1.1070

Operator's maintenance management exposition

An operator shall keep a current approved maintenance management exposition as prescribed in OPS 1.905.

OPS 1.1071

Aeroplane Technical Log

An operator shall keep an aeroplane technical log as prescribed in OPS 1.915.

Appendix 1 to OPS 1.1045

Operations Manual Contents

An operator shall ensure that the Operations Manual contains the following:

A — GENERAL/BASIC

0. ADMINISTRATION AND CONTROL OF OPERATIONS MANUAL

0.1 *Introduction*

(a) A statement that the manual complies with all applicable regulations and with the terms and conditions of the applicable Air Operator Certificate.

(b) A statement that the manual contains operational instructions that are to be complied with by the relevant personnel.

(c) A list and brief description of the various parts, their contents, applicability and use.

(d) Explanations and definitions of terms and words needed for the use of the manual.

0.2 *System of amendment and revision*

(a) Who is responsible for the issuance and insertion of amendments and revisions.

(b) A record of amendments and revisions with insertion dates and effective dates.

(c) A statement that hand written amendments and revisions are not permitted except in situations requiring immediate amendment or revision in the interest of safety.

(d) A description of the system for the annotation of pages and their effective dates.

(e) A list of effective pages.

(f) Annotation of changes (on text pages and, as far as practicable, on charts and diagrams).

(g) Temporary revisions.

(h) A description of the distribution system for the manuals, amendments and revisions.

1. ORGANISATION AND RESPONSIBILITIES

1.1. *Organisational structure*

A description of the organisational structure including the general company organigram and operations department organigram. The organigram must depict the relationship between the Operations Department and the other Departments of the company. In particular, the subordination and reporting lines of all Divisions, Departments etc, which pertain to the safety of flight operations, must be shown.

1.2. *Nominated postholders*

The name of each nominated postholder responsible for flight operations, the maintenance system, crew training and ground operations, as prescribed in OPS 1.175 (i). A description of their function and responsibilities must be included.

1.3. *Responsibilities and duties of operations management personnel*

A description of the duties, responsibilities and authority of operations management personnel pertaining to the safety of flight operations and the compliance with the applicable regulations.

1.4. *Authority, duties and responsibilities of the commander*

A statement defining the authority, duties and responsibilities of the commander.

1.5. *Duties and responsibilities of crew members other than the commander*

2. OPERATIONAL CONTROL AND SUPERVISION

2.1. *Supervision of the operation by the operator*

A description of the system for supervision of the operation by the operator (see OPS 1.175 (g)). This must show how the safety of flight operations and the qualifications of personnel are supervised. In particular, the procedures related to the following items must be described:

(a) Licence and qualification validity;

(b) Competence of operations personnel; and

(c) Control, analysis and storage of records, flight documents, additional information and data.

2.2. *System of promulgation of additional operational instructions and information*

A description of any system for promulgating information which may be of an operational nature but is supplementary to that in the Operations Manual. The applicability of this information and the responsibilities for its promulgation must be included.

2.3. *Accident prevention and flight safety programme*

A description of the main aspects of the flight safety programme

2.4. *Operational control*

A description of the procedures and responsibilities necessary to exercise operational control with respect to flight safety.

2.5. *Powers of the Authority*

A description of the powers of the Authority.

3. QUALITY SYSTEM

A description of the quality system adopted including at least:

(a) Quality policy;

(b) A description of the Organisation of the Quality System; and

(c) Allocation of duties and responsibilities.

4. CREW COMPOSITION

4.1. *Crew Composition*

An explanation of the method for determining crew compositions taking account of the following:

(a) The type of aeroplane being used;

(b) The area and type of operation being undertaken;

(c) The phase of the flight;

(d) The minimum crew requirement and flight duty period planned;

(e) Experience (total and on type), recency and qualification of the crew members; and

(f) The designation of the commander and, if necessitated by the duration of the flight, the procedures for the relief of the commander or other members of the flight crew. (See Appendix 1 to OPS 1.940).

(g) The designation of the senior cabin crew member and, if necessitated by the duration of the flight, the procedures for the relief of the senior cabin crew member and any other member of the cabin crew.

4.2. *Designation of the commander*

The rules applicable to the designation of the commander.

4.3. *Flight crew incapacitation*

Instructions on the succession of command in the event of flight crew incapacitation.

4.4. *Operation of more than one type*

A statement indicating which aeroplanes are considered as one type for the purpose of:

(a) Flight crew scheduling; and

(b) Cabin crew scheduling.

5. QUALIFICATION REQUIREMENTS

5.1. A description of the required licence, rating(s), qualification/competency (e.g. for routes and aerodromes), experience, training, checking and recency for operations personnel to conduct their duties. Consideration must be given to the aeroplane type, kind of operation and composition of the crew.

5.2. *Flight crew*

(a) Commander.

(b) Pilot relieving the commander.

(c) Co-pilot.

(d) Pilot under supervision.

(e) System panel operator.

(f) Operation on more than one type or variant.

5.3. *Cabin crew*

(a) Senior cabin crew member.

(b) Cabin crew member.

(i) Required cabin crew member.

(ii) Additional cabin crew member and cabin crew member during familiarisation flights.

(c) Operation on more than one type or variant.

5.4. *Training, checking and supervision personnel*

(a) For flight crew.

(b) For cabin crew.

5.5. *Other operations personnel*

6. CREW HEALTH PRECAUTIONS

6.1. *Crew health precautions*

The relevant regulations and guidance to crew members concerning health including:

(a) Alcohol and other intoxicating liquor;

(b) Narcotics;

(c) Drugs;

(d) Sleeping tablets;

(e) Pharmaceutical preparations;

(f) Immunisation;

(g) Deep diving;

(h) Blood donation;

(i) Meal precautions prior to and during flight;

(j) Sleep and rest; and

(k) Surgical operations.

7. FLIGHT TIME LIMITATIONS

7.1. *Flight and Duty Time Limitations and Rest Requirements*

The scheme developed by the operator in accordance with existing national requirements.

7.2. *Exceedances of flight and duty time limitations and/or reductions of rest periods*

Conditions under which flight and duty time may be exceeded or rest periods may be reduced and the procedures used to report these modifications.

8. OPERATING PROCEDURES

8.1. *Flight Preparation Instructions*

As applicable to the operation:

8.1.1. *Minimum Flight Altitudes*

A description of the method of determination and application of minimum altitudes including:

(a) A procedure to establish the minimum altitudes/flight levels for VFR flights; and

(b) A procedure to establish the minimum altitudes/flight levels for IFR flights.

8.1.2. *Criteria for determining the usability of aerodromes*

8.1.3. *Methods for the determination of aerodrome operating minima*

The method for establishing aerodrome operating minima for IFR flights in accordance with OPS 1 Subpart E. Reference must be made to procedures for the determination of the visibility and/or runway visual range and for the applicability of the actual visibility observed by the pilots, the reported visibility and the reported runway visual range.

8.1.4. En-route Operating Minima for VFR Flights or VFR portions of a flight and, where single engined aeroplanes are used, instructions for route selection with respect to the availability of surfaces which permit a safe forced landing.

8.1.5. *Presentation and Application of Aerodrome and En-route Operating Minima*

8.1.6. *Interpretation of meteorological information*

Explanatory material on the decoding of MET forecasts and MET reports relevant to the area of operations, including the interpretation of conditional expressions.

8.1.7. *Determination of the quantities of fuel, oil and water methanol carried*

The methods by which the quantities of fuel, oil and water methanol to be carried are determined and monitored in flight. This section must also include instructions on the measurement and distribution of the fluid carried on board. Such instructions must take account of all circumstances likely to be encountered on the flight, including the possibility of in-flight replanning and of failure of one or more of the aeroplane's power plants. The system for maintaining fuel and oil records must also be described.

8.1.8. *Mass and Centre of Gravity*

The general principles of mass and centre of gravity including:

(a) Definitions;

(b) Methods, procedures and responsibilities for preparation and acceptance of mass and centre of gravity calculations;

(c) The policy for using either standard and/or actual masses;

(d) The method for determining the applicable passenger, baggage and cargo mass;

(e) The applicable passenger and baggage masses for various types of operations and aeroplane type;

(f) General instruction and information necessary for verification of the various types of mass and balance documentation in use;

(g) Last Minute Changes procedures;

(h) Specific gravity of fuel, oil and water methanol; and

(i) Seating policy/procedures.

8.1.9. *ATS Flight Plan*

Procedures and responsibilities for the preparation and submission of the air traffic services flight plan. Factors to be considered include the means of submission for both individual and repetitive flight plans.

8.1.10. *Operational Flight Plan*

Procedures and responsibilities for the preparation and acceptance of the operational flight plan. The use of the operational flight plan must be described including samples of the operational flight plan formats in use.

8.1.11. *Operator's Aeroplane Technical Log*

The responsibilities and the use of the operator's Aeroplane Technical Log must be described, including samples of the format used.

8.1.12. *List of documents, forms and additional information to be carried*

8.2. *Ground Handling Instructions*

8.2.1. *Fuelling procedures*

A description of fuelling procedures, including:

(a) Safety precautions during refuelling and defuelling including when an APU is in operation or when a turbine engine is running and the prop-brakes are on;

(b) Refuelling and defuelling when passengers are embarking, on board or disembarking; and

(c) Precautions to be taken to avoid mixing fuels.

8.2.2. *Aeroplane, passengers and cargo handling procedures related to safety*

A description of the handling procedures to be used when allocating seats and embarking and disembarking passengers and when loading and unloading the aeroplane. Further procedures, aimed at achieving safety whilst the aeroplane is on the ramp, must also be given. Handling procedures must include:

(a) Children/infants, sick passengers and Persons with Reduced Mobility;

(b) Transportation of inadmissible passengers, deportees or persons in custody;

(c) Permissible size and weight of hand baggage;

(d) Loading and securing of items in the aeroplane;

(e) Special loads and classification of load compartments;

(f) Positioning of ground equipment;

(g) Operation of aeroplane doors;

(h) Safety on the ramp, including fire prevention, blast and suction areas;

(i) Start-up, ramp departure and arrival procedures;

(j) Servicing of aeroplanes; and

(k) Documents and forms for aeroplane handling;

(l) Multiple occupancy of aeroplane seats.

8.2.3. *Procedures for the refusal of embarkation*

Procedures to ensure that persons who appear to be intoxicated or who demonstrate by manner or physical indications that they are under the influence of drugs, except medical patients under proper care, are refused embarkation. This does not apply to medical patients under proper care.

8.2.4. *De-icing and Anti-icing on the ground*

A description of the de-icing and anti-icing policy and procedures for aeroplanes on the ground. These shall include descriptions of the types and effects of icing and other contaminants on aeroplanes whilst stationary, during ground movements and during take-off. In addition, a description of the fluid types used must be given including:

(a) Proprietary or commercial names;

(b) Characteristics;

(c) Effects on aeroplane performance;

(d) Hold-over times; and

(e) Precautions during usage.

8.3. *Flight Procedures*

8.3.1. *VFR/IFR Policy*

A description of the policy for allowing flights to be made under VFR, or of requiring flights to be made under IFR, or of changing from one to the other.

8.3.2. *Navigation Procedures*

A description of all navigation procedures relevant to the type(s) and area(s) of operation. Consideration must be given to:

(a) Standard navigational procedures including policy for carrying out independent cross-checks of keyboard entries where these affect the flight path to be followed by the aeroplane;

(b) MNPS and POLAR navigation and navigation in other designated areas;

(c) RNAV;

(d) In-flight replanning; and

(e) Procedures in the event of system degradation; and

(f) RVSM

8.3.3. *Altimeter setting procedures*

8.3.4. *Altitude alerting system procedures*

8.3.5. *Ground Proximity Warning System procedures*

8.3.6. *Policy and procedures for the use of TCAS/ACAS*

8.3.7. *Policy and procedures for in-flight fuel management*

8.3.8. *Adverse and potentially hazardous atmospheric conditions*

Procedures for operating in, and/or avoiding adverse and potentially hazardous atmospheric conditions including:

(a) Thunderstorms;

(b) Icing conditions;

(c) Turbulence;

(d) Windshear;

(e) Jetstream;

(f) Volcanic ash clouds;

(g) Heavy precipitation;

(h) Sand storms;

(i) Mountain waves; and

(j) Significant Temperature inversions.

8.3.9. *Wake Turbulence*

Wake turbulence separation criteria, taking into account aeroplane types, wind conditions and runway location.

8.3.10. *Crew members at their stations*

The requirements for crew members to occupy their assigned stations or seats during the different phases of flight or whenever deemed necessary in the interest of safety.

8.3.11. *Use of safety belts for crew and passengers*

The requirements for crew members and passengers to use safety belts and/or harnesses during the different phases of flight or whenever deemed necessary in the interest of safety.

8.3.12. *Admission to Flight Deck*

The conditions for the admission to the flight deck of persons other than the flight crew. The policy regarding the admission of Inspectors from the Authority must also be included.

8.3.13. *Use of vacant crew seats*

The conditions and procedures for the use of vacant crew seats.

8.3.14. *Incapacitation of crew members*

Procedures to be followed in the event of incapacitation of crew members in flight. Examples of the types of incapacitation and the means for recognising them must be included.

8.3.15. *Cabin Safety Requirements*

Procedures covering:

(a) Cabin preparation for flight, in-flight requirements and preparation for landing including procedures for securing cabin and galleys;

(b) Procedures to ensure that passengers are seated where, in the event that an emergency evacuation is required, they may best assist and not hinder evacuation from the aeroplane;

(c) Procedures to be followed during passenger embarkation and disembarkation; and

(d) Procedures in the event of fuelling with passengers on board or embarking and disembarking.

(e) Smoking on board.

8.3.16. *Passenger briefing procedures*

The contents, means and timing of passenger briefing in accordance with OPS 1.285.

8.3.17. *Procedures for aeroplanes operated whenever required cosmic or solar radiation detection equipment is carried*

Procedures for the use of cosmic or solar radiation detection equipment and for recording its readings including actions to be taken in the event that limit values specified in the Operations Manual are exceeded. In addition, the procedures, including ATS procedures, to be followed in the event that a decision to descend or re-route is taken.

8.4. *All Weather Operations*

A description of the operational procedures associated with All Weather operations (See also OPS Subpart D and E).

8.5. *ETOPS*

A description of the ETOPS operational procedures.

8.6. *Use of the Minimum Equipment and Configuration Deviation List(s)*

8.7. *Non revenue flights*

Procedures and limitations for:

(a) Training flights;

(b) Test flights;

(c) Delivery flights;

(d) Ferry flights;

(e) Demonstration flights; and

(f) Positioning flights,

including the kind of persons who may be carried on such flights.

8.8. *Oxygen Requirements*

8.8.1. An explanation of the conditions under which oxygen must be provided and used.

8.8.2. The oxygen requirements specified for:

(a) Flight crew;

(b) Cabin crew; and

(c) Passengers.

9. DANGEROUS GOODS AND WEAPONS

9.1. Information, instructions and general guidance on the transport of dangerous goods including:

(a) Operator's policy on the transport of dangerous goods;

(b) Guidance on the requirements for acceptance, labelling, handling, stowage and segregation of dangerous goods;

(c) Procedures for responding to emergency situations involving dangerous goods;

(d) Duties of all personnel involved as per OPS 1.1215; and

(e) Instructions on the carriage of the operator's employees.

9.2. The conditions under which weapons, munitions of war and sporting weapons may be carried.

10. SECURITY

10.1. Security instructions and guidance of a non-confidential nature which must include the authority and responsibilities of operations personnel. Policies and procedures for handling and reporting crime on board such as unlawful interference, sabotage, bomb threats, and hijacking must also be included.

10.2. A description of preventative security measures and training.

Note: Parts of the security instructions and guidance may be kept confidential.

11. HANDLING OF ACCIDENTS AND OCCURRENCES

Procedures for the handling, notifying and reporting of accidents and occurrences

This section must include:

(a) Definitions of accidents and occurrences and the relevant responsibilities of all persons involved;

(b) The descriptions of which company departments, Authorities or other institutions have to be notified by which means and in which sequence in case of an accident;

(c) Special notification requirements in the event of an accident or occurrence when dangerous goods are being carried;

(d) A description of the requirements to report specific occurrences and accidents;

(e) The forms used for reporting and the procedure for submitting them to the Authority shall also be included; and

(f) If the operator develops additional safety related reporting procedures for its own internal use, a description of the applicability and related forms to be used.

12. RULES OF THE AIR

Rules of the Air including:

(a) Visual and instrument flight rules;

(b) Territorial application of the Rules of the Air;

(c) Communication procedures including COM-failure procedures;

(d) Information and instructions relating to the interception of civil aeroplanes;

(e) The circumstances in which a radio listening watch is to be maintained;

(f) Signals;

(g) Time system used in operation;

(h) ATC clearances, adherence to flight plan and position reports;

(i) Visual signals used to warn an unauthorised aeroplane flying in or about to enter a restricted, prohibited or danger area;

(j) Procedures for pilots observing an accident or receiving a distress transmission;

(k) The ground/air visual codes for use by survivors, description and use of signal aids; and

(l) Distress and urgency signals.

B — AEROPLANE OPERATING MATTERS — TYPE RELATED

Taking account of the differences between types, and variants of types, under the following headings:

0. GENERAL INFORMATION AND UNITS OF MEASUREMENT

0.1. General Information (e.g. aeroplane dimensions), including a description of the units of measurement used for the operation of the aeroplane type concerned and conversion tables.

1. LIMITATIONS

1.1. A description of the certified limitations and the applicable operational limitations including:

(a) Certification status (e.g. JAR-23, JAR-25, ICAO Annex 16 (JAR-36 and JAR-34) etc);

(b) Passenger seating configuration for each aeroplane type including a pictorial presentation;

(c) Types of operation that are approved (e.g. VFR/IFR, CAT II/III, RNP Type, flight in known icing conditions etc);

(d) Crew composition;

(e) Mass and centre of gravity;

(f) Speed limitations;

(g) Flight envelope(s);

(h) Wind limits including operations on contaminated runways;

(i) Performance limitations for applicable configurations;

(j) Runway slope;

(k) Limitations on wet or contaminated runways;

(l) Airframe contamination; and

(m) System limitations.

2. NORMAL PROCEDURES

2.1. The normal procedures and duties assigned to the crew, the appropriate check-lists, the system for use of the check-lists and a statement covering the necessary coordination procedures between flight and cabin crew. The following normal procedures and duties must be included:

(a) Pre-flight;

(b) Pre-departure;

(c) Altimeter setting and checking;

(d) Taxi, Take-Off and Climb;

(e) Noise abatement;

(f) Cruise and descent;

(g) Approach, Landing preparation and briefing;

(h) VFR Approach;

(i) Instrument approach;

(j) Visual Approach and circling;

(k) Missed Approach;

(l) Normal Landing;

(m) Post Landing; and

(n) Operation on wet and contaminated runways.

3. ABNORMAL AND EMERGENCY PROCEDURES

3.1. The abnormal and emergency procedures and duties assigned to the crew, the appropriate check-lists, the system for use of the check-lists and a statement covering the necessary coordination procedures between flight and cabin crew. The following abnormal and emergency procedures and duties must be included:

(a) Crew Incapacitation;

(b) Fire and Smoke Drills;

(c) Unpressurised and partially pressurised flight;

(d) Exceeding structural limits such as overweight landing;

(e) Exceeding cosmic radiation limits;

(f) Lightning Strikes;

(g) Distress Communications and alerting ATC to Emergencies;

(h) Engine failure;

(i) System failures;

(j) Guidance for Diversion in case of Serious Technical Failure;

(k) Ground Proximity Warning;

(l) TCAS Warning;

(m) Windshear; and

(n) Emergency Landing/Ditching.

4. PERFORMANCE

4.0. Performance data must be provided in a form in which it can be used without difficulty.

4.1. *Performance data*

Performance material which provides the necessary data for compliance with the performance requirements prescribed in OPS 1 Subparts F, G, H and I must be included to allow the determination of:

(a) Take-off climb limits Mass, Altitude, Temperature;

(b) Take-off field length (dry, wet, contaminated);

(c) Net flight path data for obstacle clearance calculation or, where applicable, take-off flight path;

(d) The gradient losses for banked climbouts;

(e) En-route climb limits;

(f) Approach climb limits;

(g) Landing climb limits;

(h) Landing field length (dry, wet, contaminated) including the effects of an in-flight failure of a system or device, if it affects the landing distance;

(i) Brake energy limits; and

(j) Speeds applicable for the various flight stages (also considering wet or contaminated runways).

4.1.1. *Supplementary data covering flights in icing conditions*

Any certificated performance related to an allowable configuration, or configuration deviation, such as anti-skid inoperative, must be included.

4.1.2. If performance Data, as required for the appropriate performance class, is not available in the approved AFM, then other data acceptable to the Authority must be included. Alternatively, the Operations Manual may contain cross-reference to the approved Data contained in the AFM where such Data is not likely to be used often or in an emergency.

4.2. *Additional Performance Data.*

Additional performance data where applicable including:

(a) All engine climb gradients;

(b) Drift-down data;

(c) Effect of de-icing/anti-icing fluids;

(d) Flight with landing gear down;

(e) For aeroplanes with 3 or more engines, one engine inoperative ferry flights; and

(f) Flights conducted under the provisions of the CDL.

5. FLIGHT PLANNING

5.1. Data and instructions necessary for pre-flight and in-flight planning including factors such as speed schedules and power settings. Where applicable, procedures for engine(s)-out operations, ETOPS (particularly the one-engine-inoperative cruise speed and maximum distance to an adequate aerodrome determined in accordance with OPS 1.245) and flights to isolated aerodromes must be included.

5.2. The method for calculating fuel needed for the various stages of flight, in accordance with OPS 1.255.

6. MASS AND BALANCE

Instructions and data for the calculation of the mass and balance including:

(a) Calculation system (e.g. Index system);

(b) Information and instructions for completion of mass and balance documentation, including manual and computer generated types;

(c) Limiting masses and centre of gravity for the types, variants or individual aeroplanes used by the operator; and

(d) Dry Operating mass and corresponding centre of gravity or index.

7. LOADING

Procedures and provisions for loading and securing the load in the aeroplane.

8. CONFIGURATION DEVIATION LIST

The Configuration Deviation List(s) (CDL), if provided by the manufacturer, taking account of the aeroplane types and variants operated including procedures to be followed when an aeroplane is being despatched under the terms of its CDL.

9. MINIMUM EQUIPMENT LIST

The Minimum Equipment List (MEL) taking account of the aeroplane types and variants operated and the type(s)/area(s) of operation. The MEL must include the navigational equipment and take into account the required performance for the route and area of operation.

10. SURVIVAL AND EMERGENCY EQUIPMENT INCLUDING OXYGEN

10.1. A list of the survival equipment to be carried for the routes to be flown and the procedures for checking the serviceability of this equipment prior to take-off. Instructions regarding the location, accessibility and use of survival and emergency equipment and its associated check list(s) must also be included.

10.2. The procedure for determining the amount of oxygen required and the quantity that is available. The flight profile, number of occupants and possible cabin decompression must be considered. The information provided must be in a form in which it can be used without difficulty.

11. EMERGENCY EVACUATION PROCEDURES

11.1. *Instructions for preparation for emergency evacuation including crew coordination and emergency station assignment.*

11.2. *Emergency evacuation procedures*

A description of the duties of all members of the crew for the rapid evacuation of an aeroplane and the handling of the passengers in the event of a forced landing, ditching or other emergency.

12. AEROPLANE SYSTEMS

A description of the aeroplane systems, related controls and indications and operating instructions.

C — ROUTE AND AERODROME INSTRUCTIONS AND INFORMATION

1. Instructions and information relating to communications, navigation and aerodromes including minimum flight levels and altitudes for each route to be flown and operating minima for each aerodrome planned to be used, including:

(a) Minimum flight level/altitude;

(b) Operating minima for departure, destination and alternate aerodromes;

(c) Communication facilities and navigation aids;

(d) Runway data and aerodrome facilities;

(e) Approach, missed approach and departure procedures including noise abatement procedures;

(f) COM-failure procedures;

(g) Search and rescue facilities in the area over which the aeroplane is to be flown;

(h) A description of the aeronautical charts that must be carried on board in relation to the type of flight and the route to be flown, including the method to check their validity;

(i) Availability of aeronautical information and MET services;

(j) En-route COM/NAV procedures;

(k) Aerodrome categorisation for flight crew competence qualification

(l) Special aerodrome limitations (performance limitations and operating procedures).

D — TRAINING

1. Training syllabi and checking programmes for all operations personnel assigned to operational duties in connection with the preparation and/or conduct of a flight.

2. Training syllabi and checking programmes must include:

2.1. For flight crew: All relevant items prescribed in Subpart E and N;

2.2. For cabin crew: All relevant items prescribed in Subpart O;

2.3. For operations personnel concerned, including crew members:

(a) All relevant items prescribed in Subpart R (Transport of Dangerous Goods by Air); and

(b) All relevant items prescribed in Subpart S (Security).

2.4. For operations personnel other than crew members (e.g. dispatcher, handling personnel etc.). All other relevant items prescribed in OPS pertaining to their duties.

3. *Procedures*

3.1. Procedures for training and checking.

3.2. Procedures to be applied in the event that personnel do not achieve or maintain the required standards.

3.3. Procedures to ensure that abnormal or emergency situations requiring the application of part or all of abnormal or emergency procedures and simulation of IMC by artificial means, are not simulated during commercial air transportation flights.

4. Description of documentation to be stored and storage periods. (See Appendix 1 to OPS 1.1065.)

Appendix 1 to OPS 1.1065

Document storage periods

An operator shall ensure that the following information/documentation is stored in an acceptable form, accessible to the Authority, for the periods shown in the Tables below.

Note:

Additional information relating to maintenance records is prescribed in Subpart M.

Table 1

Information used for the preparation and execution of a flight

Information used for the preparation and execution of the flight as described in OPS 1.135	
Operational flight plan	3 months
Aeroplane Technical log	24 months after the date of the last entry
Route specific NOTAM/AIS briefing documentation if edited by the operator	3 month
Mass and balance documentation	3 month
Notification of special loads including dangerous goods	3 months

Table 2

Reports

Reports	
Journey log	3 months
Flight report(s) for recording details of any occurrence, as prescribed in OPS 1.420, or any event which the commander deems necessary to report/record	3 months
Reports on exceedances of duty and/or reducing rest periods	3 months

Table 3

Flight crew records

Flight Crew Records	
Flight, Duty and Rest time	15 months
Licence	As long as the flight crew member is exercising the privileges of the licence for the operator
Conversion training and checking	3 years
Command course (including checking)	3 years
Recurrent training and checking	3 years
Training and checking to operate in either pilot's seat	3 years
Recent experience (OPS 1.970 refers)	15 months
Route and aerodrome competence (OPS 1.975 refers)	3 years
Training and qualification for specific operations when required by OPS (e.g. ETOPS CATII/III operations)	3 years
Dangerous Goods training as appropriate	3 years

Table 4

Cabin crew records

Cabin Crew Records	
Flight, Duty and Rest time	15 months
Initial training, conversion and differences training (including checking)	As long as the cabin crew member is employed by the operator
Recurrent training and refresher (including checking)	Until 12 months after the cabin crew member has left the employ of the operator
Dangerous Goods training as appropriate	3 years

Table 5

Records for other operations personnel

Records for other operations personnel	
Training/qualification records of other personnel for whom an approved training programme is required by OPS	Last 2 training records

Table 6

Other records

Other Records	
Records on cosmic and solar radiation dosage	Until 12 months after the crew member has left the employ of the operator
Quality System records	5 years

SUBPART R

TRANSPORT OF DANGEROUS GOODS BY AIR

OPS 1.1150

Terminology

Terms used in this Subpart have the following meanings:

1. Acceptance Check List: A document used to assist in carrying out a check on the external appearance of packages of dangerous goods and their associated documents to determine that all appropriate requirements have been met.

2. Cargo Aircraft: Any aircraft which is carrying goods or property but not passengers. In this context the following are not considered to be passengers:

   (i) A crew member;

   (ii) An operator's employee permitted by, and carried in accordance with, the instructions contained in the Operations Manual;

   (iii) An authorised representative of an Authority; or

   (iv) A person with duties in respect of a particular shipment on board.

3. Dangerous Goods Accident: An occurrence associated with and related to the transport of dangerous goods which results in fatal or serious injury to a person or major property damage.

4. Dangerous Goods Incident: An occurrence, other than a dangerous goods accident, associated with and related to the transport of dangerous goods, not necessarily occurring on board an aircraft, which results in injury to a person, property damage, fire, breakage, spillage, leakage of fluid or radiation or other evidence that the integrity of the packaging has not been maintained. Any occurrence relating to the transport of dangerous goods which seriously jeopardises the aircraft or its occupants is also deemed to constitute a dangerous goods incident.

5. Dangerous Goods Transport Document: A document which is specified by the Technical Instructions. It is completed by the person who offers dangerous goods for air transport and contains information about those dangerous goods. The document bears a signed declaration indicating that the dangerous goods are fully and accurately described by their proper shipping names and UN numbers (if assigned) and that they are correctly classified, packed, marked, labelled and in a proper condition for transport.

6. Freight Container: A freight container is an article of transport equipment for radioactive materials, designed to facilitate the transport of such materials, either packaged or unpackaged, by one or more modes of transport. (Note: see Unit Load Device where the dangerous goods are not radioactive materials.)

7. Handling Agent: An agency which performs on behalf of the operator some or all of the latter's functions including receiving, loading, unloading, transferring or other processing of passengers or cargo.

8. Overpack: An enclosure used by a single shipper to contain one or more packages and to form one handling unit for convenience of handling and stowage. (Note: a unit load device is not included in this definition.)

9. Package: The complete product of the packing operation consisting of the packaging and its contents prepared for transport.

10. Packaging: Receptacles and any other components or materials necessary for the receptacle to perform its containment function and to ensure compliance with the packing requirements.

11. Proper Shipping Name: The name to be used to describe a particular article or substance in all shipping documents and notifications and, where appropriate, on packagings.

12. Serious Injury: An injury which is sustained by a person in an accident and which:

    (i) Requires hospitalisation for more than 48 hours, commencing within seven days from the date the injury was received; or

    (ii) Results in a fracture of any bone (except simple fractures of fingers, toes or nose); or

    (iii) Involves lacerations which cause severe haemorrhage, nerve, muscle or tendon damage; or

    (iv) Involves injury to any internal organ; or

    (v) Involves second or third degree burns, or any burns affecting more than 5 % of the body surface; or

    (vi) Involves verified exposure to infectious substances or injurious radiation.

13. State of Origin: The Authority in whose territory the dangerous goods were first loaded on an aircraft.

14. Technical Instructions: The latest effective edition of the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284-AN/905), including the Supplement and any Addendum, approved and published by decision of the Council of the International Civil Aviation Organization.

15. UN Number: The four-digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods to identify a substance or a particular group of substances.

16. Unit Load Device: Any type of aircraft container, aircraft pallet with a net, or aircraft pallet with a net over an igloo. (Note: an overpack is not included in this definition; for a container containing radioactive materials see the definition for freight container.)

OPS 1.1155

Approval to Transport Dangerous Goods

An operator shall not transport dangerous goods unless approved to do so by the Authority.

OPS 1.1160

Scope

(a) An operator shall comply with the provisions contained in the Technical Instructions on all occasions when dangerous goods are carried, irrespective of whether the flight is wholly or partly within or wholly outside the territory of a State.

(b) Articles and substances which would otherwise be classed as dangerous goods are excluded from the provisions of this Subpart, to the extent specified in the Technical Instructions, provided:

    1. They are required to be aboard the aeroplane in accordance with the relevant applicable rules or for operating reasons;

    2. They are carried as catering or cabin service supplies;

    3. They are carried for use in flight as veterinary aid or as a humane killer for an animal;

    4. They are carried for use in flight for medical aid for a patient, provided that:

        (i) Gas cylinders have been manufactured specifically for the purpose of containing and transporting that particular gas;

(ii) Drugs, medicines and other medical matter are under the control of trained personnel during the time when they are in use in the aeroplane;

(iii) Equipment containing wet cell batteries is kept and, when necessary secured, in an upright position to prevent spillage of the electrolyte; and

(iv) Proper provision is made to stow and secure all the equipment during take-off and landing and at all other times when deemed necessary by the commander in the interests of safety; or

5. They are carried by passengers or crew members.

(c) Articles and substances intended as replacements for those in (b) 1 above shall be transported on an aeroplane as specified in the Technical Instructions.

OPS 1.1165

Limitations on the Transport of Dangerous Goods

(a) An operator shall take all reasonable measures to ensure that articles and substances that are specifically identified by name or generic description in the Technical Instructions as being forbidden for transport under any circumstances are not carried on any aeroplane.

(b) An operator shall take all reasonable measures to ensure that articles and substances or other goods that are identified in the Technical Instructions as being forbidden for transport in normal circumstances are only transported when:

1. They are exempted by the States concerned under the provisions of the Technical Instructions; or

2. The Technical Instructions indicate they may be transported under an approval issued by the State of Origin.

OPS 1.1170

Classification

An operator shall take all reasonable measures to ensure that articles and substances are classified as dangerous goods as specified in the Technical Instructions.

OPS 1.1175

Packing

An operator shall take all reasonable measures to ensure that dangerous goods are packed as specified in the Technical Instructions.

OPS 1.1180

Labelling and Marking

(a) An operator shall take all reasonable measures to ensure that packages, overpacks and freight containers are labelled and marked as specified in the Technical Instructions.

(b) Where dangerous goods are carried on a flight which takes place wholly or partly outside the territory of a State, labelling and marking must be in the English language in addition to any other language requirements.

OPS 1.1185

Dangerous Goods Transport Document

(a) An operator shall ensure that, except when otherwise specified in the Technical Instructions, dangerous goods are accompanied by a dangerous goods transport document.

(b) Where dangerous goods are carried on a flight which takes place wholly or partly outside the territory of a State, the English language must be used for the dangerous goods transport document in addition to any other language requirements.

OPS 1.1195

Acceptance of Dangerous Goods

(a) An operator shall not accept dangerous goods for transport until the package, overpack or freight container has been inspected in accordance with the acceptance procedures in the Technical Instructions.

(b) An operator or his handling agent shall use an acceptance check list. The acceptance check list shall allow for all relevant details to be checked and shall be in such form as will allow for the recording of the results of the acceptance check by manual, mechanical or computerised means.

OPS 1.1200

Inspection for Damage, Leakage or Contamination

An operator shall ensure that:

1. Packages, overpacks and freight containers are inspected for evidence of leakage or damage immediately prior to loading on an aeroplane or into a unit load device, as specified in the Technical Instructions;

2. A unit load device is not loaded on an aeroplane unless it has been inspected as required by the Technical Instructions and found free from any evidence of leakage from, or damage to, the dangerous goods contained therein;

3. Leaking or damaged packages, overpacks or freight containers are not loaded on an aeroplane;

4. Any package of dangerous goods found on an aeroplane and which appears to be damaged or leaking is removed or arrangements made for its removal by an appropriate authority or organisation. In this case the remainder of the consignment shall be inspected to ensure it is in a proper condition for transport and that no damage or contamination has occurred to the aeroplane or its load; and

5. Packages, overpacks and freight containers are inspected for signs of damage or leakage upon unloading from an aeroplane or from a unit load device and, if there is evidence of damage or leakage, the area where the dangerous goods were stowed is inspected for damage or contamination.

OPS 1.1205

Removal of Contamination

An operator shall ensure that:

1. Any contamination found as a result of the leakage or damage of dangerous goods is removed without delay; and

2. An aeroplane which has been contaminated by radioactive materials is immediately taken out of service and not returned until the radiation level at any accessible surface and the non-fixed contamination are not more than the values specified in the Technical Instructions.

OPS 1.1210

Loading Restrictions

(a) *Passenger Cabin and Flight Deck*

An operator shall ensure that dangerous goods are not carried in an aeroplane cabin occupied by passengers or on the flight deck, unless otherwise specified in the Technical Instructions.

(b) *Cargo Compartments*

An operator shall ensure that dangerous goods are loaded, segregated, stowed and secured on an aeroplane as specified in the Technical Instructions.

(c) *Dangerous Goods Designated for Carriage Only on Cargo Aircraft*

An operator shall ensure that packages of dangerous goods bearing the "Cargo Aircraft Only" label are carried on a cargo aircraft and loaded as specified in the Technical Instructions.

OPS 1.1215

Provision of Information

(a) *Information to Ground Staff*

An operator shall ensure that:

1. Information is provided to enable ground staff to carry out their duties with regard to the transport of dangerous goods, including the actions to be taken in the event of incidents and accidents involving dangerous goods; and

2. Where applicable, the information referred to in sub-paragraph (a) 1 above is also provided to his handling agent.

(b) *Information to Passengers and Other Persons*

1. An operator shall ensure that information is promulgated as required by the Technical Instructions so that passengers are warned as to the types of goods which they are forbidden from transporting aboard an aeroplane; and

2. An operator and, where applicable, his handling agent shall ensure that notices are provided at acceptance points for cargo giving information about the transport of dangerous goods.

(c) *Information to Crew Members*

An operator shall ensure that information is provided in the Operations Manual to enable crew members to carry out their responsibilities in regard to the transport of dangerous goods, including the actions to be taken in the event of emergencies arising involving dangerous goods.

(d) *Information to the Commander*

An operator shall ensure that the commander is provided with written information, as specified in the Technical Instructions.

(e) *Information in the Event of an Aeroplane Incident or Accident*

1. The operator of an aeroplane which is involved in an aeroplane incident shall, on request, provide any information required to minimise the hazards created by any dangerous goods carried.

2. The operator of an aeroplane which is involved in an aeroplane accident shall, as soon as possible, inform the appropriate authority of the State in which the aeroplane accident occurred of any dangerous goods carried.

OPS 1.1220

Training programmes

(a) An operator shall establish and maintain staff training programmes, as required by the Technical Instructions, which must be approved by the Authority.

(b) *Operators not holding a permanent approval to carry dangerous goods*

An operator 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. As a minimum this training must cover the areas identified in Column 1 of Table 1 and be to a depth sufficient to ensure that an awareness is gained of the hazards associated with dangerous goods and how to identify such goods; and

2. The following personnel:

   (i) Crew members;

   (ii) Passenger handling staff; and

   (iii) Security staff employed by the operator who deal with the screening of passengers and their baggage,

   have received training which, as a minimum, must cover the areas identified in Column 2 of Table 1 and be 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

Areas of training	1	2
General philosophy	×	×
Limitations on Dangerous Goods in air transport	×	×
Package marking and labelling	×	×
Dangerous Goods in passengers baggage		×
Emergency procedures		×

Note: "×" indicates an area to be covered.

(c) *Operators holding a permanent approval to carry dangerous goods*

An operator 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. As a minimum this training must cover the areas identified in Column 1 of Table 2 and be 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. As a minimum this training must cover the areas identified in Column 2 of Table 2 and be 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. As a minimum this training must cover the areas identified in Column 3 of Table 2 and be 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, as a minimum, must cover the areas identified in Column 4 of Table 2. Training must be 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 aeroplane; and

5. The following personnel:

   (i) Passenger handling staff;

   (ii) Security staff employed by the operator who deal with the screening of passengers and their baggage; and

   (iii) Crew members other than flight crew members,

   have received training which, as a minimum, must cover the areas identified in Column 5 of Table 2. Training must be 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 aeroplane.

(d) An operator shall ensure that all staff who require dangerous goods training receive recurrent training at intervals of not longer than 2 years.

(e) An operator shall ensure that records of dangerous goods training are maintained for all staff trained in accordance with sub-paragraph (d) above.

(f) An operator shall ensure that his 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	×	×	×	×	×
Limitations on Dangerous Goods in the air transport	×	×	×	×	×
Classification and list of Dangerous Goods	×	×		×	
General packing requirements and Packing Instructions	×				
Packaging specifications markings	×				
Package marking and labelling	×	×	×	×	×
Documentation from the shipper	×				
Acceptance of Dangerous Goods, including the use of a checklist	×				
Loading, restrictions on loading and segregation	×	×	×	×	
Inspections for damage or leakage and decontamination procedures	×	×			
Provision of information to commander	×	×		×	
Dangerous Goods in passengers' baggage	×			×	×
Emergency procedures	×	×	×		×

Note: "×" indicates an area to be covered.

OPS 1.1225

Dangerous Goods Incident and Accident Reports

An operator shall report dangerous goods incidents and accidents to the Authority. An initial report shall be despatched within 72 hours of the event unless exceptional circumstances prevent this.

SUBPART S

SECURITY

OPS 1.1235

Security requirements

An operator shall ensure that all appropriate personnel are familiar, and comply, with the relevant requirements of the national security programmes of the State of the operator.

OPS 1.1240

Training programmes

An operator shall establish, maintain and conduct approved training programmes which enable the operator's personnel to take appropriate action to prevent acts of unlawful interference such as sabotage or unlawful seizure of aeroplanes and to minimise the consequences of such events should they occur.

OPS 1.1245

Reporting acts of unlawful interference

Following an act of unlawful interference on board an aeroplane the commander or, in his absence the operator, shall submit, without delay, a report of such an act to the designated local authority and the Authority in the State of the operator.

OPS 1.1250

Aeroplane search procedure checklist

An operator shall ensure that all aeroplanes carry a checklist of the procedures to be followed for that type in searching for concealed weapons, explosives, or other dangerous devices.

OPS 1.1255

Flight crew compartment security

If installed, the flight crew compartment door on all aeroplanes operated for the purpose of carrying passengers shall be capable of being locked from within the compartment in order to prevent unauthorised access.'