determined and monitored in-flight. This section should also include instructions on the measurement and distribution of the fluid carried on board. Such instructions should take account of all circumstances likely to be encountered on the flight, including the possibility of in-flight re-planning and of failure of one or more of the aircraft's power plants. The system for maintaining fuel and oil records should also be described.

8.1.8 Mass and centre of gravity.

The general principles of mass and centre of gravity including the following:

a) definitions;
b) methods, procedures and responsibilities for preparation and acceptance of mass and centre of gravity calculations;
c) the policy for using 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 aircraft type;
f) general instructions and information necessary for verification of the various
g) types of mass and balance documentation in use;
h) last-minute changes procedures;
i) specific gravity of fuel, oil and water methanol;
j) seating policy/procedures;
k) for helicopter operations, standard load plans.

8.1.9 Air traffic services (ATS) flight plan.

Procedures and responsibilities for the preparation and submission of the ATS 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 should be described, including samples of the operational flight plan formats in use.

8.1.11 Operator's aircraft technical log.

The responsibilities and the use of the operator's aircraft technical log should 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. As applicable to the operation:

8.2.1 Fuelling procedures. A description of fuelling procedures, including:

(a) safety precautions during refuelling and defueling including when an auxiliary power unit is in operation or when rotors are running or when an engine is or engines are 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 Aircraft, passengers and cargo handling procedures related to safety.

A description of the handling procedures to be used when allocating seats, embarking and disembarking passengers and when loading and unloading the aircraft. Further procedures,aimed at achieving safety whilst the aircraft is on the ramp, should also be given. Handling procedures should include:

(a) special categories of passengers, including children/infants, persons withreduced mobility, inadmissible passengers, deportees and persons in custody;
(b) permissible size and weight of hand baggage;
(c) loading and securing of items in the aircraft;
(d) positioning of ground equipment;
(e) operation of aircraft doors;
(f) safety on the aerodrome/operating site, including fire prevention and safety in blast and suction areas;
(g) start-up, ramp departure and arrival procedures, including, for aeroplanes, push-back and towing operations;
(h) servicing of aircraft;
(i) documents and forms for aircraft handling;
(j) special loads and classification of load compartments; and
(k) multiple occupancy of aircraft 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, 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 aircraft on the ground. These should include descriptions of the types and effects of icing and other contaminants on aircraft whilst stationary, during ground movements and during take-off. In addition, a description of the fluid types used should be given, including the following:

(a) proprietary or commercial names,

(b) characteristics,

(c) effects on aircraft performance,

(d) hold-over times,

(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 for requiring flights to be made under IFR, or for 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. Special consideration should 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 aircraft; and
(b) required navigation performance (RNP), minimum navigation performance specification (MNPS) and polar navigation and navigation in other designated areas;
(c) in-flight re-planning;

(d) procedures in the event of system degradation; and

(e) reduced vertical separation minima (RVSM), for aeroplanes.

8.3.3 Altimeter setting procedures, including, where appropriate, use of:

(a) metric altimetry and conversion tables; and

(b) QFE operating procedures.

8.3.4 Altitude alerting system procedures for aeroplanes or audio voice alerting devices for helicopters.

8.3.5 Ground proximity warning system (GPWS)/terrain avoidance warning system (TAWS), for aeroplanes. Procedures and instructions required for the avoidance of controlled flight into terrain, including limitations on high rate of descent near the surface (the related training requirements are covered in OM-D 2.1).

8.3.6 Policy and procedures for the use of traffic collision avoidance system (TCAS)/airborne collision avoidance system (ACAS) for aeroplanes and, when applicable, for helicopters.

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 the following:

(a) thunderstorms,

(b) icing conditions,

(c) turbulence,

(d) windshear,

(e) jet stream,

(f) volcanic ash clouds,

(g) heavy precipitation,

(h) sand storms,

(i) mountain waves,

(j) significant temperature inversions.

8.3.9 Wake turbulence.

Wake turbulence separation criteria, taking into account aircraft types, wind conditions and runway/final approach and take-off area (FATO) location.

For helicopters, consideration should also be given to rotor downwash.

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 and, for aeroplane operations, including procedures for controlled rest in the flight crew compartment.

8.3.11 Use of restraint devices for crew and passengers.

The requirements for crew members and passengers to use safety belts and/or restraint systems during the different phases of flight or whenever deemed necessary in the interest of safety.

8.3.12 Admission to flight crew compartment.

The conditions for the admission to the flight crew compartment of persons other than the flight crew. The policy regarding the admission of inspectors from an authority should 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 should be included.

8.3.15 Cabin safety requirements.

Procedures:

(a) covering cabin preparation for flight, in-flight requirements and preparation for landing, including procedures for securing the cabin and galleys;

(b) 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 aircraft;
(c) to be followed during passenger embarkation and disembarkation;
(d) when refuelling/defuelling with passengers embarking, on board or disembarking;
(e) covering the carriage of special categories of passengers;
(f) covering smoking on board;
(g) covering the handling of suspected infectious diseases.

8.3.16 Passenger briefing procedures.

The contents, means and timing of passenger briefing.

8.3.17 Procedures for aircraft operated whenever required cosmic or solar radiation detection equipment is carried.

8.3.18 Policy on the use of autopilot and autothrottle for aircraft fitted with these systems.

8.4 Low visibility operations (LVO). A description of the operational procedures associated with LVO.

8.5 Extended-range operations with two-engined aeroplanes (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 example, for the following:

(a) non-commercial operations by AOC holders, a description of the differences to commercial operations,
(b) training flights,
(c) test flights,
(d) delivery flights,
(e) ferry flights,
(f) demonstration flights,
(g) 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 should be provided and used.

8.8.2 The oxygen requirements specified for the following persons:

(a) flight crew;

(b) cabin crew;

(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) special notification requirements in the event of an accident or occurrence when dangerous goods are being carried;
(d) procedures for responding to emergency situations involving dangerous goods;
(e) duties of all personnel involved; and
(f) instructions on the carriage of the operator's personnel on cargo aircraft when dangerous goods are being carried.

9.2 The conditions under which weapons, munitions of war and sporting weapons may be carried.

10 SECURITY

Security instructions, guidance, procedures, training and responsibilities. Some parts of the security instructions and guidance may be kept confidential.

11 HANDLING, NOTIFYING AND REPORTING ACCIDENTS, INCIDENTS AND OCCURRENCES

Procedures for handling, notifying and reporting accidents, incidents and occurrences. This section should include the following:

(a) definition of accident, incident and occurrence and of the relevant responsibilities of all persons involved;
(b) illustrations of forms to be used for reporting all types of accident, incident and occurrence (or copies of the forms themselves), instructions on how they are to be completed, the addresses to which they should be sent and the time allowed for this to be done;
(c) in the event of an accident, descriptions of which departments, authorities and other organisations have to be notified, how this will be done and in what sequence;
(d) procedures for verbal notification to air traffic service units of incidents involving ACAS resolution advisories (RAs), bird hazards, dangerous goods and hazardous conditions;
(e) procedures for submitting written reports on air traffic incidents, ACAS RAs, bird strikes,dangerous goods incidents or accidents, and unlawful interference;
(f) reporting procedures. These procedures should include internal safety-related reporting procedures to be followed by crew members, designed to ensure that the pilot-in-command/ commander is informed immediately of any incident that has endangered, or may have endangered, safety during the flight, and that the pilot-in-command/commander is provided with all relevant information.
(g) Procedures for the preservation of recordings following a reportable event.

12 RULES OF THE AIR

(a) Visual and instrument flight rules,
(b) Territorial application of the rules of the air,
(c) Communication procedures, including communication-failure procedures,
(d) Information and instructions relating to the interception of civil aircraft,
(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 aircraft flying in or about to enter a restricted, prohibited or danger area,

(j) Procedures for flight crew observing an accident or receiving a distress transmission,

(k) The ground/air visual codes for use by survivors, and description and use of signal aids,

(l) Distress and urgency signals.

13 LEASING/CODE-SHARE

A description of the operational arrangements for leasing and code-share, associated procedures and management responsibilities.

1.4.2 Aircraft Operating Matters – Type related. (Part B)

Taking account of the differences between types/classes, and variants of types, under the following headings:

0 GENERAL INFORMATION AND UNITS OF MEASUREMENT

0.1 General information (e.g. aircraft dimensions), including a description of the units of measurement used for the operation of the aircraft type concerned and conversion tables.

1 LIMITATIONS

1.1 A description of the certified limitations and the applicable operational limitations should include the following:

(a) certification status (e.g. type certificate, environmental certification, etc.);
(b) passenger seating configuration for each aircraft type, including a pictorial presentation;
(c) types of operation that are approved (e.g. VFR/IFR, CAT II/III, RNP, flights 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) for aeroplanes, limitations on wet or contaminated runways;
(l) airframe contamination;
(m) system limitations.

2 NORMAL PROCEDURES

The normal procedures and duties assigned to the crew, the appropriate checklists, the system for their use and a statement covering the necessary coordination procedures between flight and cabin/other crew members. The normal procedures and duties should include the following:

(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) IFR approach,
(j) visual approach and circling,
(k) missed approach,
(l) normal landing,
(m) post-landing,
(n) for aeroplanes, operations on wet and contaminated runways.

3 ABNORMAL AND/OR EMERGENCY PROCEDURES

The abnormal and/or emergency procedures and duties assigned to the crew, the appropriate checklists, the system for their use and a statement covering the necessary coordination procedures between flight and cabin/other crew members. The following abnormal and/or emergency procedures and duties should include the following:

(a) crew incapacitation,
(b) fire and smoke drills,
(c) for aeroplanes, un-pressurised and partially pressurised flight,
(d) for aeroplanes, exceeding structural limits such as overweight landing,
(e) lightning strikes,
(f) distress communications and alerting ATC to emergencies,
(g) engine/burner failure,
(h) system failures,
(i) guidance for diversion in case of serious technical failure,
(j) ground proximity warning, including for helicopters audio voice alerting device (AVAD) warning,
(k) ACAS/TCAS warning for aeroplanes/audio voice alerting device (AVAD) warning for helicopters,
(l) windshear,
(m) emergency landing/ditching,
(n) for aeroplanes, departure contingency procedures.

4 PERFORMANCE

4.0 Performance data should be provided in a form that can be used without difficulty.

4.1 Performance data. Performance material that provides the necessary data for compliance with the performance requirements. For aeroplanes, this performance data should be included to allow the determination of the following:

(a) take-off climb limits — mass, altitude, temperature;
(b) take-off field length (for dry, wet and contaminated runway conditions);
(c) net flight path data for obstacle clearance calculation or, where applicable, take-off flight path;
(d) the gradient losses for banked climb-outs;
(e) en-route climb limits;
(f) approach climb limits;
(g) landing climb limits;
(h) landing field length (for dry, wet and contaminated runway conditions) including the effects of an in-flight failure of a system or device, if it affects the landing distance;
(i) brake energy limits;
(j) speeds applicable for the various flight stages (also considering dry, wet and contaminated runway conditions).

4.1.1 Supplementary data covering flights in icing conditions. Any certified performance related to an allowable configuration, or configuration deviation, such as anti-skid inoperative.

4.1.2 If performance data, as required for the appropriate performance class, is not available

in the AFM, then other data should be included. The OM may contain cross-reference to the data contained in the AFM where such data is not likely to be used often or in an emergency.

4.2 Additional performance data for aeroplanes. Additional performance data, where applicable, including the following:

(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 aircraft with 3 or more engines, one-engine-inoperative ferry flights,
(f) flights conducted under the provisions of the configuration deviation list (CDL).

5 FLIGHT PLANNING

5.1 Data and instructions necessary for pre-flight and in-flight planning including, for aeroplanes, 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 and flights to isolated aerodromes should be included.

5.2 The method for calculating fuel needed for the various stages of flight.

5.3 When applicable, for aeroplanes, performance data for ETOPS critical fuel reserve and area of operation, including sufficient data to support the critical fuel reserve and area of operation calculation based on approved aircraft performance data. The following data should be included:

(a) detailed engine(s)-inoperative performance data, including fuel flow for standard and non-standard atmospheric conditions and as a function of airspeed and power setting, where appropriate, covering:
   i. drift down (includes net performance), where applicable;
   ii. cruise altitude coverage including 10 000 ft;
   iii. holding;
   iv. altitude capability (includes net performance); and
   v. missed approach;

(b) detailed all-engine-operating performance data, including nominal fuel flow data, for
standard and non-standard atmospheric conditions and as a function of airspeed and power setting, where appropriate, covering:
   a) cruise (altitude coverage including 10 000 ft); and
   b) (holding;

(c) details of any other conditions relevant to ETOPS operations which can cause significant deterioration of performance, such as ice accumulation on the unprotected surfaces of the aircraft, ram air turbine (RAT) deployment, thrust-reverser deployment, etc.; and

(d) the altitudes, airspeeds, thrust settings, and fuel flow used in establishing the ETOPS area of operations for each airframe-engine combination should be used in showing the corresponding terrain and obstruction clearances.

6 MASS AND BALANCE

Instructions and data for the calculation of the mass and balance, including the following:

(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 aircraft used by the operator;
(d) dry operating mass and corresponding centre of gravity or index.

7 LOADING

Procedures and provisions for loading and unloading and securing the load in the aircraft.

8 CONFIGURATION DEVIATION LIST

The CDL(s), if provided by the manufacturer, taking account of the aircraft types and variants operated, including procedures to be followed when an aircraft is being dispatched under the terms of its CDL.

9 MINIMUM EQUIPMENT LIST (MEL)

The MEL for each aircraft type or variant operated and the type(s)/area(s) of operation. The MEL should also include the dispatch conditions associated with operations required for a specific approval (e.g. RNAV, RNP, RVSM, ETOPS). Consideration should be given to using the ATA number system when allocating chapters and numbers.

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 checklist(s) should 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 should be considered.

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 aircraft and the handling of the passengers in the event of a forced landing, ditching or other emergency.

12 AIRCRAFT SYSTEMS

A description of the aircraft systems, related controls and indications and operating instructions.

Consideration should be given to use the ATA number system when allocating chapters and numbers.

1.4.3 Route guide (Part C)

1 Instructions and information relating to communications, navigation and aerodromes/operating sites,

Including minimum flight levels and altitudes for each route to be flown and operating minima for each aerodrome/operating site planned to be used, including the following:

(a) minimum flight level/altitude;
(b) operating minima for departure, destination and alternate aerodromes;
(c) communication facilities and navigation aids;
(d) (d)runway/final approach and take-off area (FATO) data and aerodrome/operating site facilities;
(e) approach, missed approach and departure procedures including noise abatement procedures;
(f) communication-failure procedures;
(g) search and rescue facilities in the area over which the aircraft is to be flown;
(h) a description of the aeronautical charts that should 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 communication/navigation procedures;
(k) aerodrome/operating site categorization for flight crew competence qualification;
(l) special aerodrome/operating site limitations (performance limitations and operating procedures, etc.).

1.4.4 Training (Part D).

1 Description of scope

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 Content:

Training syllabi and checking programmes for:

2.1 flight crew

2.2 cabin crew

2.3 technical crew,

2.4 operations personnel concerned, including crew members:

2.5 operations personnel other than crew members (e.g. dispatcher, handling personnel,

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 the abnormal or emergency procedures, and simulation of instrument meteorological conditions (IMC) by artificial means are not simulated during commercial air transport operations.

4 Description of documentation to be stored and storage periods.