

Safety Regulation Group



CAP 612

Police Air Operations Manual

Part One

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Police Air Operations Manual

Part One

April 2004

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Foreword

1 Status

- 1.1 CAP 612 (Police Air Operations' Manual (PAOM) Part 1)) sets out joint CAA/Home Office policy for the conduct of police air operations. It is intended to ensure a safe and effective national standard of operation in accordance with the concept of the Police Air Operator's Certificate (PAOC). It is a CAA-approved publication and can only be amended by CAA action. These rules represent the minimum acceptable standard, but individual circumstances may require PAOC holders to apply higher minima.
- 1.2 Applicants for a PAOC are required to produce a PAOM Part 2 that embraces information peculiar to that operator, to a standard that is acceptable to the CAA. CAP 613, the companion publication to CAP 612, gives guidance on the compilation of the PAOM Part 2.
- 1.3 The practices, procedures and limitations set out in the two parts of the PAOM, taken together, lay down minimum standards that shall be considered mandatory on all operating staff, except where the text is clearly advisory, permissive or purely informative. The editorial practice followed in the PAOM uses 'shall' as the form of the operative verb when mandatory action is required and either 'should', 'may', or 'is' where the context is advisory, permissive, or descriptive.
- 1.4 The PAOM contains the information that will be necessary to enable the PAOC holder's operating staff to perform their duties safely.

2 Amendment Policy

- 2.1 A PAOC holder may forward proposals for change to the PAOM Part 1 via his assigned Flight Operations Inspector (FOI). The CAA will consult the Home Office prior to issuing any amendment.
- 2.2 A PAOC holder may initiate amendments to the PAOM Part 2. A copy of each such amendment shall be forwarded to the assigned FOI, either before or immediately after it comes into effect, for consideration, acceptance and incorporation into the CAA copy of the manual.

Section 1 Administration

Chapter 1 Basic Concepts

1 PAOM – Additional Documents

The following shall be considered part of the PAOM:

- a) Aircraft Flight Manual (AFM);
- b) Aircraft check lists;
- c) Administrative Notices to Flight Crew, Operational Notices to Flight Crew, Technical Notices to Flight Crew;
- d) Jeppesen, Bottlang, Aerad, Pooley's Flight Guide or any other flight guide specified by the operator in the PAOM Part 2.

2 Control, Issue and Update of the Manual

The PAOC holder shall establish a procedure for the control, issue and update of the PAOM.

The operator shall ensure that:

- a) all nominated PAOM holders receive amendments when issued, in accordance with the distribution list contained in the PAOM Part 2;
- b) each change shall be recorded by reference to a numbered amendment list, on a page set aside for that purpose in the PAOM Part 1 or Part 2, as appropriate;
- c) the amendments shall:
 - i) carry an amendment number and date;
 - ii) be printed in context, with new information being sidelined. Manuscript amendment shall not be acceptable;
 - iii) accompany an amendment instruction which shall be retained behind the page on which amendments are listed as incorporated;
- d) obsolete pages are destroyed;
- e) each member of the operator's operating staff has access to those parts of the PAOM applicable to his duties;
- f) the list of other documents and publications shown at Section 1 Appendix A are kept up-to-date.

A statement on PAOM amendment policy may be found in the Foreword.

3 Area of Operations

The area of operations shall be defined within the PAOM Part 2. For helicopters it will normally be AOC Region AA, which comprises the following areas:

Mainland UK, including the Isle of Man, the Isle of Wight, the Hebrides, the Shetlands, the Orkneys, Isles of Scilly and any point not more than 12 NM from the high water Spring Tide line at the aforementioned land masses.

For aeroplanes the area of operations shall normally be Region BB, an area enclosed by rhumb lines joining successively the following points:

6100N 1230W
6100N 0400E
5300N 0700E
4800N 0700E
4800N 1230W
6100N 1230W

AOC areas other than AOC Regions AA or BB may be proposed to the CAA. If accepted an alternative area shall be shown in the PAOM Part 2, under the heading 'PAOC Area of Operations'.

A map of the area of operations shall appear in the PAOM Part 2.

4 PAOC Limitations

Any limitations imposed on a PAOC holder by the CAA shall be included in the PAOM Part 2, under the heading 'PAOC Limitations'. CAA permission in writing shall be required for any changes made by the PAOC holder.

5 Types of Operation

5.1 PAOC

A flight on which any person other than flight crew is carried, or a flight for the purpose of carrying cargo, or aerial work, shall be carried out in accordance with the conditions of the PAOM.

5.2 Helicopter Emergency Medical Service

See Section 5 Chapter 2.

5.3 Aerial Work

Pilot-only crew training, or aircraft testing in which engines are retarded from the normal flight position are considered to be flights for the purpose of aerial work.

5.4 Air Tests, Trials and Proving Flights

Operators may depart from compliance with this manual for certain flights such as air tests, flights involving trials of equipment or proving flights for new techniques and procedures. The nature and purpose of any such flight shall be discussed with the CAA Flight Operations Inspectorate and the necessary clearances and authorisations shall be obtained.

Only the flight crew and engineering staff immediately involved with the purpose of the flight shall be carried on such flights, except that CAA-agreed passengers (defined

in paragraph 9) may be carried on a flight where the engines are retarded no further than is necessary to demonstrate the required power assurance/trend.

5.5 **One-Engine-Inoperative Ferry Flights – Helicopters**

A one-engine-inoperative ferry flight in a multi-engined helicopter should only be considered under the most exceptional circumstances.

A one-engine-inoperative ferry flight is not permitted unless the limitations, performance and operational procedures are specified in the helicopter's Flight Manual (AFM) and the instructions pertaining to such a flight are included in the Operations Manual.

6 Participation in Exhibitions of Flying

No aircraft shall participate in an exhibition of flying unless the commander is able to comply with the requirements of the ANO 2000 Article 70 and has obtained the appropriate display authorisation from the CAA. A flypast at an exhibition of flying is considered to be participation. Attendance in a static display on the ground or carrying out a flight for the purpose of carrying passengers to or from the display is not considered to be participation.

7 Flight Crew - Definition

The ANO 2000, Article 129 (1) defines flight crew as follows:

'Flight Crew' in relation to an aircraft means those members of the crew of the aircraft who respectively undertake to act as pilot, flight navigator, flight engineer and flight radio operator of the aircraft. All other persons on board the aircraft, including the police observer, are regarded as passengers.

8 Operating Staff - Definition

Operating staff are those individuals employed by the operator in connection with the conduct of a flight, whether or not as members of the flight crew. The definition includes an operator who himself performs these functions.

9 CAA-Agreed Passenger - Definition

Operations to the full extent of PAOC flexibility are restricted to those occasions wherein any passenger has been drawn from one of the following categories:

- a) Police Officer;
- b) Employee of a police authority when used in a task associated with their specialisation;
- c) Medical attendant;
- d) Holder of a current pilot's licence who intends to act as a member of the flight crew of an aircraft flying under and in accordance with the terms of a PAOC and who is being carried for the purpose of training and familiarisation;
- e) CAA Flight Operations Inspector (FOI);
- f) Home Office Police Aviation Adviser;

- g) Fire officer;
- h) Customs officer on a joint Police/Customs operation;
- i) MOD analysts (a Sqn OGD); or
- j) Such other person as may be permitted in writing by the CAA.

Such passengers shall be known as 'CAA-agreed passengers'.

10 Carriage of CAA Flight Operations Inspectors

The aircraft commander shall make appropriate arrangements to carry, upon request, a person known to be a CAA FOI except when, in his opinion, such carriage would adversely affect the safety or operational effectiveness of the flight.

11 Authority of Aircraft Commander

Every person in an aircraft registered in the United Kingdom shall obey all lawful commands which the aircraft commander may give for the purpose of securing the safety of the aircraft and of persons or property carried therein, or the safety, efficiency or regularity of air navigation.

12 Endangering the Safety of an Aircraft

A person shall not recklessly or negligently act in a manner likely to endanger an aircraft, or any person therein.

13 Endangering the Safety of any Person or Property

A person shall not recklessly or negligently cause or permit an aircraft to endanger any person or property.

14 Accommodation

Office space at each operating base shall be sufficient to provide a suitable working environment for the operating staff. Adequate provision shall be made for operational planning, for the storage and display of essential records and for flight planning by flight crews. If flight planning facilities for flight crews are provided by the airport authority, the space provided by the operator may be reduced but it is essential that reasonable accommodation shall be made available for flight crews to use before and between flights. The siting of the office accommodation for the unit staff and the hangarage for the aircraft shall ensure safe operation of the aircraft, particularly when moving the aircraft between the hangar and the parking position. The aircraft parking position shall be free of flight safety hazards.

15 Flight Planning and Operations Library

A Flight Planning and Operations Library shall be established at the main operating base, considered to be the place from which PAOC operations are normally mounted, which may not necessarily be co-located with the main administrative base of a commercial company which holds a PAOC. An aircraft commander operating from a

site detached from the unit's main operating base shall satisfy himself before flight that he has access to all the relevant information that would be available in the Flight Planning and Operations Library.

15.1 The library shall comprise the following:

- a) PAOM;
- b) AFM;
- c) UK map coverage with aviation overprint:
 - i) 1:500,000 scale;
 - ii) 1:250,000 scale;
- d) UK ordnance survey 1:50.000 coverage of the local force operating area as set out in the PAOM Part 2, preferably with a powerline overprint;
- e) Bottlang, Pooley's Flight Guide or RAF En-Route;
- f) for IFR operations, Jeppesen or Aerad coverage of the unit's PAOC operating area;
- g) UK Aeronautical Information Publication;
- h) CAP 360, CAP 371, CAP 382, CAP 393;
- j) NOTAMS Class 1 and 2;
- k) Aeronautical Information Circulars;
- l) Notices to AOC Holders and Flight Operations Department Communications;
- m) spare copies of all documents required to be carried in aircraft;
- n) details of forthcoming Royal Flights;
- p) Helicopter Landing Site directory (RAF);
- q) unit directory of police and hospital landing sites;
- r) Proformae:
 - i) Mandatory Occurrence Report;
 - ii) Bird-strike Report;
 - iii) Airmiss Report;
 - iv) General and Crew Customs Declaration;
 - v) Aircraft Commander's Voyage Report;
 - vi) Commander's FTL Discretion Report;
 - vii) ATC flight plan form.

15.2 The following shall be displayed in the Flight Planning area:

- a) UK Danger Area Chart;
- b) topographical air chart of the local area displaying permanent local flying restrictions;
- c) current notifications of Royal Flights;
- d) current NOTAMS relevant to the unit's operations;
- e) local area weather as METARs and TAFs;
- f) performance calculations as specified in the PAOM Part 2;

- g) the aircraft prepared for service (APS) weight of any aircraft placed on standby;
 - h) fuel state of the standby aircraft;
 - i) the inventory of dangerous goods/weapons/munitions as loaded on any standby aircraft.
- 15.3 Prior to take-off from the main operating base, provision shall be made for observing and recording local weather conditions including cloud base and visibility (e.g. cloud base recorder or automatic met station).

Chapter 2 PAOC Holder's Organisation

1 Chain of Responsibility

A PAOC holder shall organise resources into a Police Air Support Unit (PASU). Where a PAOC holder operates on behalf of more than one police authority, each PASU shall be organised autonomously. The following posts within a unit organisation have been identified as appropriate for control and discipline.

Case A – Police Force as Operator

Function	Level of Management
a) Unit management, discipline, operations and PAOC management	Police officer or civilian in charge of the unit. For the purposes of the PAOM, he shall normally be known as the Unit Executive Officer.
b) Aviation management	Chief Pilot.
c) Engineering Maintenance	Maintenance Manager or Airworthiness Co-ordinator.

Case B – Commercial Company as Operator

a) Unit management, discipline of police staff and operations	As for Case A.
b) Aviation management	Company management – a Chief Pilot shall be appointed at each Air Support Unit.
c) Pilot/Engineer discipline	Company management Chief Pilot.
d) Engineering management	Maintenance Manager or Airworthiness Co-ordinator.

2 Management Organisation

Two simplified management organisations are illustrated at Appendix B. Operators shall set out their specific organisation in the PAOM Part 2, with an individual nominated to each declared post. No one individual shall hold more than one of the declared posts of Unit Executive Officer, Chief Pilot and Maintenance Manager.

Although the CAA may accept an organisation that differs from the examples given in Appendix B, the operator shall ensure that the responsibilities described in Chapter 3 paragraphs 3 to 7 are wholly embraced within the responsibilities of managers in the organisation.

3 Nominated Individuals

Appointments that constitute the PAOC holder's management organisation shall be shown in the PAOM Part 2 under the heading 'Nominated Individuals'. Where the

terms of reference are identical to those listed in Chapter 3 it will be acceptable to cross-refer to them as such. For example:

'Unit Executive Officer (UEO)' – as given in the PAOM Part 1, Section 1 Chapter 3 paragraph 3.

Where the terms of reference differ, they shall be stated in full in the PAOM Part 2.

Chapter 3 Appointments and Responsibilities

1 Operator

The operator of an aircraft is generally deemed to be the person who at the relevant time has the management of that aircraft.

2 Chief Constable

Where a police force is the aircraft operator, the Chief Constable, who is ultimately responsible for the management of that force, shall be the most senior appointment within the Air Support Unit management organisation.

Where more than one force combine to hold a PAOC, one Chief Constable shall be nominated to hold the most senior appointment within the management organisation. It is acceptable for each of a number of Chief Constables to hold this appointment in turn, provided changes are notified in writing to the CAA at least 14 days prior to the intended change.

The Chief Constable shall determine the policy to be adopted by the unit to ensure the maintenance of PAOC standards. However, the responsibility for day to day operations and administration of the unit may be delegated to others, as flying is a specialised field of activity where responsibilities are best balanced between police control and the operating expertise of professional aviation specialists.

3 The Unit Executive Officer

A Unit Executive Officer (UEO) shall be appointed by the Chief Constable to exercise full-time day to day control of the Air Support Unit (ASU). It is vital that the individual holds supervisory rank in the police force, typically inspector or sergeant, or has equivalent civilian management experience. A qualified deputy of supervisory rank shall be established to cover the UEO's absences.

In order to fulfil this task, the UEO should be able to rely on the support of the Chief Constable to place safety first and foremost in the Unit's operational concept.

Before taking up their appointments the UEO, and his deputy, shall have successfully completed a recognised Home Office/ACPO/CAA training course. Any individual who completes a UEO course and is not appointed to the position of UEO or deputy within 3 years shall undertake another course.

The duties and responsibilities of the UEO shall be as follows:

- a) to ensure that all unit flying operations are conducted in accordance with PAOM Part 1 and Part 2 requirements, procedures and instructions;
- b) to supervise unit discipline and conduct;
- c) to ensure that all unit documentation is amended up-to-date. Such documentation shall include the PAOM, aircraft and equipment licences and certificates, crew licences and any special permissions or exemptions;
- d) to provide any information that would enable the Chief Pilot to issue Administrative Notices to Flight Crew;

- e) to preserve all records and documentation, as required by the PAOM and ANO, such as duty hours, navigation logs and load sheets;
- f) to roster police observers and medical attendants, where carried;
- g) to liaise with potential users to ensure correct planning of unit operational tasks;
- h) to ensure that flight crews have access to all the information that may be required for the safe and correct conduct of a flight and are briefed as such. The information shall include:
 - i) date of flight;
 - ii) pick up point and time;
 - iii) details of task to be carried out, including number of passengers and routing;
 - iv) potential hazards;
 - v) carriage of dangerous goods and munitions of war;
 - vi) equipment required;
 - vii) contact RT frequency and callsign;
 - viii) drop point;
 - ix) action on completion of task;
 - x) any special instructions.
- j) to ensure that the unit operations library is kept up-to-date; (This responsibility shall include all maps, charts and flight guides, operations manuals and other documents that are needed either for planning purposes or carriage in flight.)
- k) to make available a flight crew briefing service that gives access to NOTAMS, AICs, AIP, the Air Navigation Order and the Regulations, and information on the weather and royal flights;
- l) to provide a flight planning area where crews may prepare maps and charts, and file flight plans if required;
- m) to provide passenger and cargo handling facilities, located separately from the flight planning area;
- n) to keep up-to-date the unit diary of future tasking;
- p) to allocate tasking;
- q) to ensure that all passenger and cargo manifests are properly prepared;
- r) to ascertain that police observers are trained and tested in accordance with national guidelines;
- s) to sign the operator's certificate on the training forms as required in Part D, unless this duty has been allocated to another of the individuals nominated in the management organisation;
- t) to liaise with the JAR-145 organisation responsible for the maintenance of the unit aircraft.

- NOTES:**
- 1 When an aircraft is operating from a location other than its main operating base, it is the responsibility of the aircraft commander to ensure that the responsibilities otherwise applicable to the UEO are discharged.
 - 2 The UEO may, with the exception of items a) and b), delegate such of these duties as he sees fit to persons capable of undertaking them, provided that written instructions on how to undertake those duties have been given to the persons concerned.
 - 3 Where a commercial operator holds the PAOC the following responsibilities shall be transferred to the Chief Pilot:
a), b), e), g), h), j), k), l), m), q), r), s), t).
This list of responsibilities may be altered with the agreement in writing, of the commercial operator and the CAA.

4 The Chief Pilot

The Chief Pilot shall be responsible to the UEO or senior company manager for the following:

- a) the safe, efficient and effective utilisation of the unit's aircraft, consistent with the procedures, regulations and limitations laid down in the PAOM;
- b) keeping the PAOM up-to-date;
NOTE: Guidance on the Chief Pilot's powers in respect of PAOM amendment action is given in the Foreword.
- c) * producing a Minimum Equipment List (MEL) for each aircraft type operated which, when agreed by the CAA, shall form part of the PAOM Part 2;
- d) * issuing procedures in the PAOM Part 2, for an aircraft commander to check the serviceability of radio and navigation equipment and flight instruments, as appropriate for the type of flight to be undertaken;
- e) * ensuring that all unit flight crew licences, medical certificates and the training requirements in Part D of this document are kept up-to-date;
- f) * ensuring that the contents of all training checks reflect the training requirements set out in Part D of this document;
- g) * issuing notices to flight crew on operational, administrative and engineering matters;
- h) ensuring that the tasks allotted to a pilot are commensurate with his training, experience level and ability;
- j) rostering pilots in accordance with their abilities and in compliance with the operators' approved Flight Times Limitations (FTL) Scheme;
- k) vetting commanders' FTL discretion reports;
- l) periodic vetting of post-flight documentation.

NOTE: Where the PAOC holder's organisation comprises a group headquarters and other, detached units, the responsibilities marked with an asterisk may be undertaken by the Group Chief Pilot.

5 Training Staff

The minimum qualifications and responsibilities of the training staff, including the Chief Training Captain, Training Captains and Line Training Captains are set out in Part D.

6 Flight Safety Officer

The Flight Safety Officer (FSO) appointment is a secondary duty, filled by a line pilot who shall be responsible to the Chief Pilot for:

- a) the timely identification of practices or trends which threaten flight safety;
- b) the timely processing of airmiss, occurrence and bird-strike reports;
- c) providing and distributing suitable literature to enhance awareness of flight safety within the unit;
- d) ensuring that any accident is reported in accordance with the requirements of CAP 393 (Air Navigation: The Order and the Regulations) Section 8, and Section 1 Chapter 5 of this manual;
- e) circulating within the operator's organisation, the reports of incident and accident investigations;
- f) periodically checking aircraft emergency equipment for serviceability and correct scale.

7 Maintenance Manager

The operator shall employ or contract a person whose responsibility it is to ensure that all maintenance is carried out on time to a standard that satisfies the operator's airworthiness responsibilities. This person may be the Chief Engineer (Maintenance Manager) of the approved maintenance organisation or the Chief Engineer of the police force's own maintenance unit or an engineer employed to manage the operator's maintenance.

The Maintenance Manager is regarded as one of the key personnel and shall be nominated in the operator's organisation listed in the PAOM Part 2.

Terms of Reference

The Maintenance Manager shall be responsible to the UEO or company management, as appropriate, for:

- a) ensuring that unit aircraft are maintained and inspected in accordance with the applicable approved maintenance schedule, good engineering practices and any special requirements of the CAA, as they arise;
- b) providing a timely and effective response to any notified unserviceability or role change requirement;
- c) ensuring that adequate maintenance facilities are provided for all unit aircraft, in the form of hangarage, tooling, test equipment, ground support equipment and technical manuals;
- d) maintaining aircraft records;
- e) controlling and promulgating aircraft prepared for service (APS) weights and centre of gravity indices;

- f) ensuring that adequate spares are available;
- g) providing a stores system and environment conducive to parts serviceability, airworthiness requirements and to the timely location and issue of required parts;
- h) obtaining and retaining necessary CAA engineering organisation approval;
- j) ensuring that all licensed engineering staff keep their licences current and valid;
- k) obtaining CAA approval for aircraft modifications requested by the unit;
- l) reviewing all Manufacturer's Service Bulletins/Information, Airworthiness Directives and other maintenance requirements that are published by appropriate authorities: advising the operator upon the applicability of such information for aircraft modification;
- m) arranging for unit pilots to be trained and tested in the performance of daily and other relevant aircraft checks, including the removal and replacement of role equipment as required;
- n) ensuring that fuel purchase, storage and dispensing procedures provide fuel at the correct specification and quality.

8 Pilot Qualifications

- a) The minimum qualification for a pilot shall be a Commercial Pilot's Licence (Helicopter) or Commercial Pilot's Licence (Aeroplane), as appropriate, which includes a rating on the type to be flown;
- b) the age limitations for acting as aircraft commander, or copilot, shall be as set out in Schedule 8 of the ANO 2000;
- c) the operator shall stipulate, in the PAOM Part 2, the minimum levels of experience acceptable for the employment of a line pilot;
- d) multi-type operations:
when engaged by a PAOC holder, a pilot shall not be permitted to fly aircraft types in excess of the following:
 - i) turbo-jets and other categories having a maximum total weight authorised (MTWA) exceeding 5700 kg: one type only;
 - ii) aircraft other than turbo-jets having a MWTA of 5700 kg or less:

- **Helicopters**

One complicated type (e.g. SA 365, S 76) and up to two simple types (e.g. Bo 105, AS 355),

or

Not more than two complicated types,

or

Not more than three simple types.

- **Aeroplanes**

Not more than three piston-engined or turbo-prop types. The combination may include both piston-engined and turbo-prop types.

- NOTES:**
- 1 Piston-engined aeroplanes and simple helicopters are considered to be interchangeable.
 - 2 The limitations above may be varied with the permission of the CAA. Such variations shall be set out in the PAOM Part 2.

9 Pilots' Licences and Qualifications - All Pilots

Although it is the responsibility of the Chief Pilot to ensure that a pilot is qualified, current and has completed all unit requirements before undertaking a flight, each pilot is responsible for ascertaining that his licences, ratings and qualifications are in date. A pilot shall keep the Chief Pilot advised as to his training requirements, allowing sufficient time for these to be carried out in order that qualifications shall not lapse.

Chapter 4 Use of Independent Pilots

Before an independent pilot is employed on PAOC operations the Chief Pilot shall ensure that his qualifications and documentation are in order. Prior to commencing operations at a unit, an independent pilot (or 'floater') shall receive a familiarisation on the aircraft to be flown with specific attention being paid to items such as the instrument/nav/radio layouts, including their power systems and controls; the autopilot and its use and the operating area. If a pilot is operating by night at a police air support unit new to him, he should first undertake a flight by day at the unit. UEOs should ensure that appropriate instructions for this are contained in the PAOM Part 2.

The following items shall be examined:

- a) Pilot's licence signed, in date, specifying in Part 1 the type to be flown and containing a current instrument rating where appropriate.
- b) Medical certificate signed, in date and with no unacceptable limitations.
- c) Duty hours record made up for the previous 28 days and showing the pilot to be within the limits of the Operator's Flight Time Limitations (FTL) Scheme.
- d) Pilot's log book completed up-to-date.
- e) Unit checks completed, signed up and in date as follows:
 - i) base check;
 - ii) line check;
 - iii) area competency check;
 - iv) emergency and survival procedures check;
 - v) IMC base check where applicable.

NOTE: These unit checks may have been conducted by another operator provided that the other operator is identified in the PAOM Part 2, in accordance with arrangements agreed with the CAA.

Chapter 5 Accident and Incident Reports

1 Accident Report

Where a reportable accident occurs the aircraft commander or the operator shall inform the Chief Inspector, Air Accidents Investigation Branch (AAIB) by the quickest means possible. Where a reportable accident occurs in the United Kingdom he shall notify the local police authorities.

1.1 Definition of a Reportable Accident

'Reportable accident' means an occurrence associated with the operation of an aircraft which takes place between the time when any person boards the aircraft with the intention of flight and such time as all persons have disembarked therefrom, in which:

- a) any person suffers death or serious injury while in or upon the aircraft or by direct contact with any part of the aircraft (including any part which has become detached from the aircraft) or by direct exposure to jet blast, except when the death or serious injury is from natural causes, is self-inflicted or is inflicted by other persons or when the death or serious injury is suffered by a stowaway hiding outside the areas normally available in flight to the passengers and members of the crew of the aircraft: or
- b) the aircraft is missing or is completely inaccessible, or
- c) the aircraft incurs damage or structural failure which adversely affects its structural strength, performance or flight characteristics and which would normally require major repair or replacement of the affected component.

NOTE: No report would be required if the incident involves only:

- i) engine failure or damage, where the damage is limited to the engine, its cowling or accessories,
- ii) damage limited to propellers, wing tips, antennae, tyres, brakes, fairings, small dents or punctured holes in the aircraft skin.

1.2 Details to be Reported

The following information shall be passed in the format listed below to the Chief Inspector, AAIB, using the identifying abbreviation ACCID;

- a) the type, model and the nationality and registration marks of the aircraft;
- b) the name of the owner, operator and hirer (if any) of the aircraft;
- c) the name of the commander of the aircraft;
- d) the date and Co-ordinated Universal Time (UTC) of the accident;
- e) the last point of departure and the next point of intended landing of the aircraft;
- f) the position of the aircraft by reference to some easily defined geographical point and latitude and longitude;
- g)
 - i) the number of crew on board the aircraft at the time of the accident and the number of them killed or seriously injured as a result of the accident;
 - ii) the number of passengers on board the aircraft at the time of the accident and the number of them killed or seriously injured as a result of the accident;
 - iii) the number of other persons killed or seriously injured as a result of the accident;

- h) the nature of the accident and the extent of the damage to the aircraft as far as is known.

NOTE: The AAIB telex number is 858119 (answer-back ACCINV G), the fax number is 01252 376999 and the 24 hour accident/incident reporting line is 01252 512299.

2 Occurrence Report

2.1 A reportable occurrence is defined as:

- a) Any incident relating to an aircraft or any defect in or malfunctioning of such an aircraft or any part, or equipment of such an aircraft, being an incident, malfunctioning or defect endangering, or which if not corrected would endanger, the aircraft, its occupants or any other person.

NOTE: For the purposes of the PAOM this definition includes any incident arising from the carriage of a person other than a member of the flight crew, or from the loading or carriage of dangerous goods or weapons or munitions of war.

- b) Any defect or malfunction in any ground facility that is used or intended to be used in connection with the operation of such an aircraft, being a defect or malfunction that endangers, or which if not corrected would endanger, such an aircraft or its occupants.

2.2 When the flight is for the purpose of public transport, or in accordance with a PAOC, reporting the occurrence shall be mandatory.

2.3 The CAA Form CA 1673, Occurrence Report, shall be completed and forwarded to the address shown thereon within 96 hours of the occurrence.

NOTE: A list of reportable occurrences is to be found in CAP 382 – Mandatory Occurrence Reporting Scheme – Information and Guidance.

3 Airprox Report (see AIC)

3.1 The pilot of an aircraft shall file an Airprox Report when he considers a risk of collision existed between his and another aircraft.

3.2 An initial report shall be made on the air traffic frequency in use giving the information listed below prefixing the call 'Airprox Report':

- a) radio callsign and SSR code;
- b) position and heading;
- c) flight level/altitude, altimeter setting and aircraft altitude;
- d) weather conditions;
- e) date and time of airmis;
- f) description of the other aircraft e.g. type, registration and call sign;
- g) first sighting distance and vertical and horizontal separation at the time of the airmis.

3.3 If no RT frequency is available, the initial report shall be made by telephone on landing.

3.4 Within seven days CAA Form CA 1094 shall be completed and forwarded to the Joint Airprox Section at the address shown on the form.

4 Bird-Strike Report

A yellow CAA Form CA 1282 should be completed and handed to ATC at the nearest aerodrome when a bird-strike has been observed, or when evidence to suggest a bird-strike has taken place is discovered on the ground. If it is impracticable to hand the completed report to ATC, the pilot shall follow the alternative postal instructions printed on the form.

5 Availability of Report Forms

The PAOM Part 2 shall include a sample copy of the report forms referred to in this Chapter. A pilot may use such forms as required but shall ensure that they are replaced as soon as possible.

Chapter 6 Consumption of Alcohol, Medicines and Drugs, and Smoking in Aircraft

1 Alcohol

No flight crew member shall consume alcohol during flight or during the eight hour period immediately prior to flight. This time-scale is based on the consumption of a moderate quantity of alcohol. A commensurately longer period of abstinence shall be observed where the intake of alcohol has been large. The commander shall not allow any person to enter the aircraft when drunk or to become drunk on the aircraft.

2 Medicines and Drugs

No flight crew member shall take medicines or drugs not prescribed by a doctor who has been made aware of the individual's flight crew duties. If any doubt exists as to the effects of a particular medicine or drug, the crew member concerned shall consult a specialist in aviation medicine. A crew member shall report to the Chief Pilot and the UEO any limitations imposed by medical treatment that he may currently be undergoing.

3 Smoking in Aircraft

Notices indicating when smoking is prohibited shall be exhibited in every aircraft so as to be visible from each passenger seat therein. A person shall not smoke in any compartment of an aircraft at a time when smoking is prohibited in that compartment by a notice to that effect exhibited by or on behalf of the aircraft commander. See also Section 5 Chapter 4 paragraph 2 d).

NOTE: The operator may issue instructions in the PAOM Part 2 to further curb smoking.

Appendix A Documents to be kept up-to-date

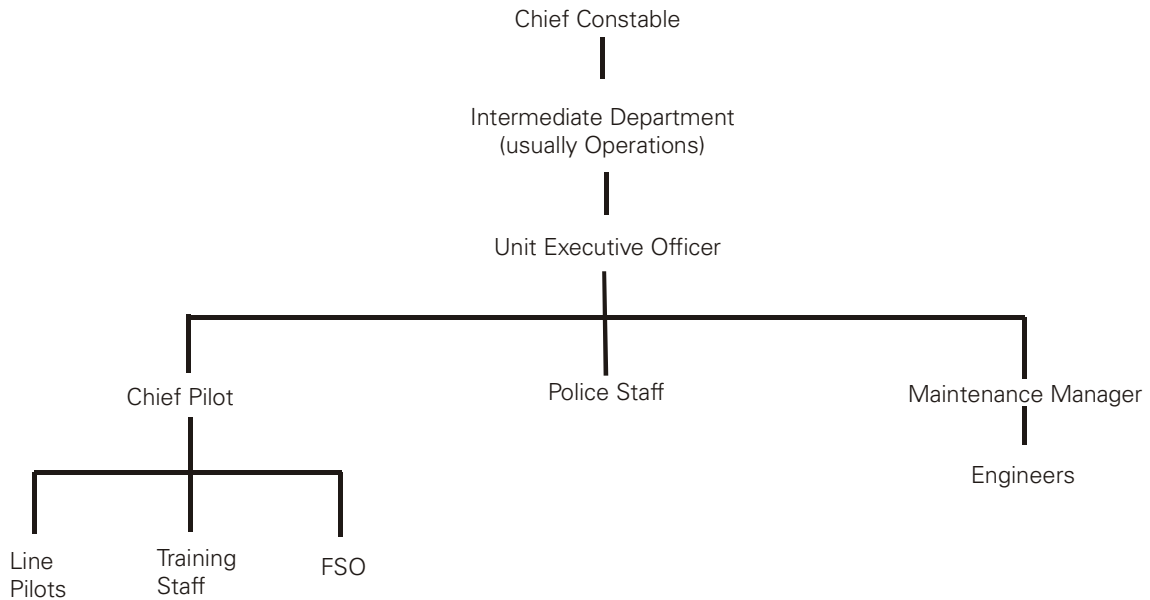
The following personnel shall be responsible for ensuring that copies of the following documents remain in good condition and are kept up-to-date:

- | | | |
|----|---|--|
| 1 | PAOM (Parts 1 & 2) | Chief Pilot |
| 2 | AFM | |
| 3 | All engineering publications | Maintenance Manager/
Airworthiness Co-ordinator |
| 4 | CAP 393 ANO Regulations | Chief Pilot |
| 5 | CAP 360 (a) Part 1
(b) Part 2 | Maintenance Manager/
Airworthiness Co-ordinator |
| 6 | CAP 371 The Avoidance of Fatigue in Aircrews | |
| 7 | JAR-FCL | |
| 8 | CAP 32 UK AIP | |
| 9 | Aeronautical Information Circulars | Chief Pilot |
| 10 | Notices to AOC Holders and Flight Operations
Department Communications | |
| 11 | NOTAM | |
| 12 | CAP 382 MOR Reporting Scheme | |

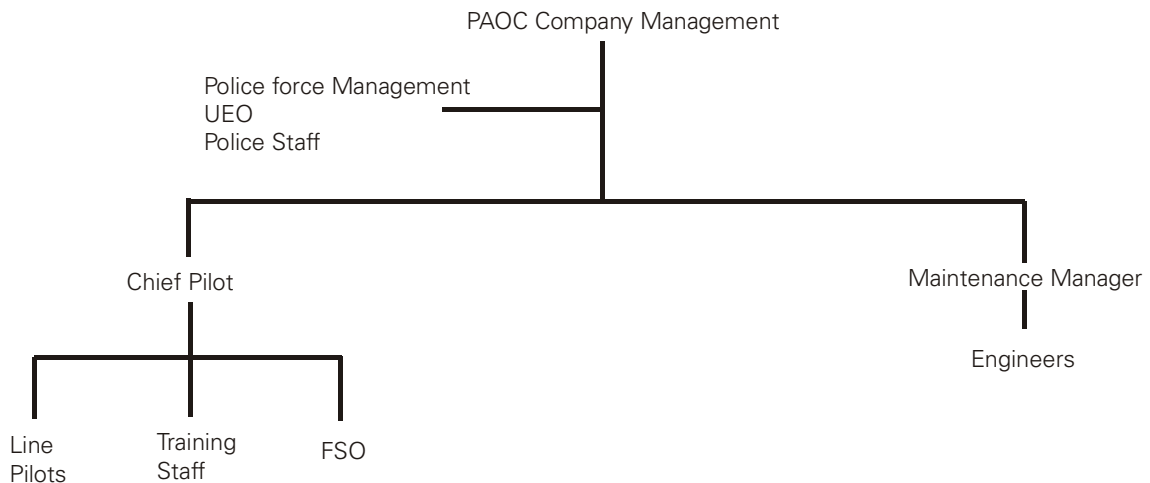
The UEO shall make all the above publications available.

Appendix B Simplified Management Schemes

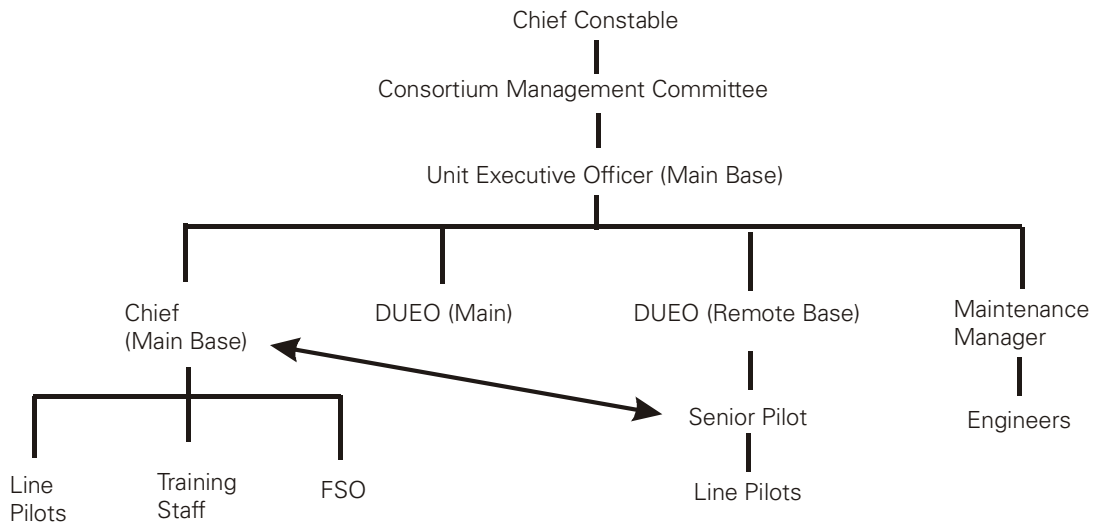
A) POLICE FORCE AS OPERATOR



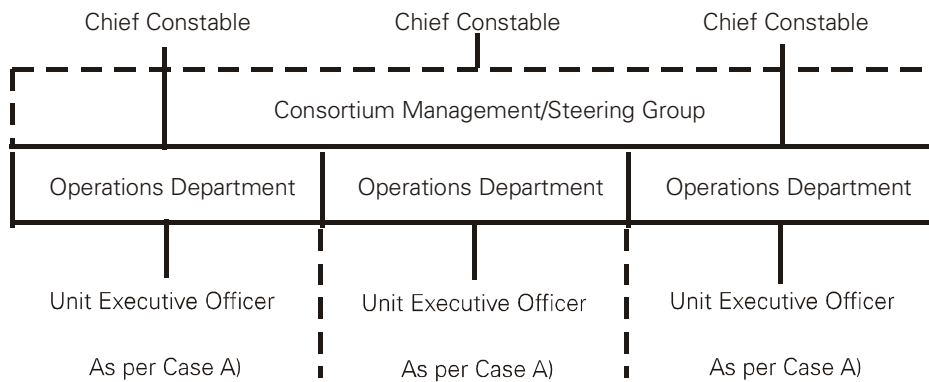
B) COMMERCIAL COMPANY AS OPERATOR



C) OPERATIONALLY INTEGRATED POLICE CONSORTIUM



D) CONTRACTUAL CONSORTIUM (OPERATIONALLY NON-INTEGRATED)



Section 2 Flight Planning

Introduction

Police air operations are usually flown at short notice. However, planning for such tasks is normally done well in advance. Aircraft may be prepared in a predetermined role and fuel loads should be adjusted to a standard that achieves a balance between range and endurance and payload. Even when tasked at short notice, or in the air, a pilot is required to calculate his requirements and capabilities within the restrictions or limitations applicable to a particular flight. A thorough daily briefing on the weather and other factors affecting flight within the operational area will be essential.

The information in this section is designed to give the pilot all the planning information that he may require to conduct a flight safely and efficiently.

Chapter 1 Air Traffic Services

1 Classification of Airspace

Table 1 Airspace Classes and Associated Air Traffic Services

Class	Air Traffic Separation	Relevant UK Airspace
A	Between all IFR aircraft; VFR not permitted	Airways, Channel Islands CTR/CTA, Cotswold CTA, Daventry CTA, London CTR, London TMA, Manchester TMA, Shanwick OCA, and Worthing CTA.
B	Between all aircraft, IFR and VFR	All airspace above FL 245
C	Between IFR aircraft; VFR separated from IFR	None currently allocated
D	Between IFR aircraft; no separation for VFR traffic; traffic information between IFR and VFR with traffic avoidance on request	As listed in Section 3
E	As for Class D Traffic information on VFR flights as far as is practicable	As listed in Section 3
F	Between IFR aircraft as far as is practical; flight information service only for VFR traffic;	Air Traffic Service Advisory Routes (ATS ADRs) (See the UK AIP)
G	No separation provided	The residual airspace within the UK Flight Information Regions (FIRs) and Shanwick FIR which lies outside airspaces A to F

2 Airspace Reservations

2.1 Aerodrome Traffic Zones

An aerodrome traffic zone (ATZ) is defined as airspace of defined dimensions established around an aerodrome for the protection of aerodrome traffic.

The shape and size of an ATZ are shown on maps and charts that have aviation overprints.

Prior to take-off, or landing at, or crossing an ATZ, an aircraft commander shall establish two-way communications with the controlling authority and obtain clearance for his intentions.

2.2 Areas of Intense Aerial Activity and Aerial Tactics Areas

These areas, listed in the UK AIP, are usually associated with military activity and involve aircraft manoeuvring with large and often unpredictable changes in height and direction. If it is not possible to avoid these areas a good lookout shall be maintained at all times with radar monitored transits being advisable where available.

2.3 **Military Low Flying Areas**

Military low flying areas, shown in the UK AIP, are established throughout the United Kingdom. Military low flying aircraft pose one of the greatest hazards to police aircraft when operating in the lower airspace. Pilots shall become familiar with such areas within their intended area of operations and maintain a good lookout when operating in these areas.

Low Level Civil Aircraft Notification Procedure

The Ministry of Defence operates a Low Level Civil Aircraft Notification Procedure (CANP) which exists to collect information on civil aircraft engaged on aerial work below 1000 ft AGL and to distribute it to military operators to assist in planned avoidance. Before take-off on any low flying sortie, a military pilot receives a comprehensive brief on all factors likely to affect his flight, including details of relevant CANP reports. Hence, maximum participation in CANP by civil pilots operating at or below 1000 ft AGL is essential if full benefit is to be obtained from the procedure.

The Tactical Bookings Cell (TBC) of the London Air Traffic Control Centre (Military) co-ordinates information relating to military low flying, including CANP. A 24 hour, free of charge telephone facility to TBC is available (Tel No: 0800 515544 or Fax No: 0500 300120). Pilots intending to carry out low level work, or their representatives, are encouraged to use this facility whenever possible.

A CANP telephone message should be prefixed 'CIVIL LOW FLYING' followed by details of the intended flight in the following format:

- a) type of activity;
- b) location(s): Preferably as a 6 figure grid reference taken from an OS 1:50 000 map, although latitude and longitude will be accepted. The name of a nearby village is also required;
- c) area(s) of operation: Either as a circle with a specified radius centred on the location(s) defined at b) above or as a corridor of specified dimensions between locations as defined at b) above;
- d) date and time of intended operation(s): Start and finish in local time;
- e) operating height(s): Lower and upper limits AGL;
- f) type(s) of aircraft;
- g) contact telephone number;
- h) operating unit and telephone number.

TBC should be notified of intended operations not less than 4 hours and not more than 24 hours before commencement. It is accepted that a PAOC holder would not often be able to meet the minimum pre-notification time. Nevertheless, TBC would be ready to accept late notifications and would make every effort to distribute the information as widely as possible. However, reports received less than 4 hours before an operation is due to start are progressively less likely to reach all military pilots before they depart on their low level sorties.

HENCE, WHILE THE CANP WOULD NOT BE PRACTICABLE FOR POLICE RAPID REACTION TASKS, IT SHOULD BE FOLLOWED IN RESPECT OF PRE-PLANNED LOW LEVEL OPERATIONS.

Normally, the airspace notified under CANP should not exceed an area bounded by a 2 NM radius circle or a corridor extending either side of intended track to a maximum width of 4 NM in total, from ground level to 1000 ft AGL. Military pilots will aim to

provide adequate avoidance of either the area or the activity reported under CANP, depending on the circumstances. Therefore, the lateral and vertical boundaries which define the area of activity should equate only to the parameters within which the activity is planned to take place and should not build in an allowance as a safety factor.

Every reasonable attempt should be made to inform TBC as soon as it becomes obvious that an activity previously notified will no longer take place, irrespective of the time remaining.

2.4 **Danger Areas**

The UK AIP contains details only of those Danger Areas within the UK FIRs which have an upper limit in excess of 500 ft AGL. However, there are many ranges (rifle, small arms etc.) with upper limits of 500 ft or less AGL and pilots, on the basis of their local area knowledge, shall therefore satisfy themselves that they are clear of such activity when flying at or below 500 ft.

Listed Danger Areas are designated as being either permanently active or active only during published times. Temporary Danger Areas (TDA) may be designated by the National Air Traffic Services (NATS) at short notice.

A Danger Area Crossing Service is available for certain Danger Areas. Details of unit contact frequencies and availability are given for the applicable areas in the UK AIP. The contact frequencies are also printed on the 1:500 000 UK ICAO aeronautical charts legends.

A Danger Area Activity Information Service (DAAIS) is available in respect of certain Danger Areas. This service complements the present methods of promulgation of information about those Danger Areas which participate in the service. The purpose of the DAAIS is to enable pilots to obtain via a Nominated Service Unit (NSU) an airborne update of the activity status of a Danger Area which is participating in the DAAIS and whose position is relevant to the flight of the aircraft. Further details of this service are published in the UK AIP.

Emergencies in the United Kingdom FIR – Restriction of Flying

Where appropriate, NATS may designate an Emergency Controlling Authority (ECA) which may find it necessary, for the safety of life and particularly for the protection of the emergency services engaged in air or surface activities, to inhibit flights by aircraft over the area of a major emergency incident. The first action normally taken is to establish a TDA around the scene of the incident. TDAs may only be established by the LATCC (Mil) AIS Officer (Tel: 01895 426153 – 24 hours).

A VHF UNICOM channel, 130.425 MHz, with a designated coverage of 10 NM to FL 30 is available for use at major emergency incidents occurring on land, clear of existing regulated airspace. Police Air Support Units may use UNICOM to announce the establishment of Emergency Restriction of Flying Regulations.

2.5 **Prohibited and Restricted Areas**

A list of prohibited and restricted areas is given in the UK AIP. Pilots shall ensure that these are shown on their maps and charts.

3 Requirement to File a Flight Plan

- a) An aircraft commander may file a flight plan for any flight on Form CA 48 which, when completed, shall be submitted to the nearest Air Traffic Service Unit (ATSU).

- b) Unless otherwise agreed with ATC under local arrangements as set out in the PAOM Part 2, a flight plan shall be filed as follows:
- i) for all flights within Class A Airspace;
 - ii) for all flights within any controlled airspace in IMC or at night, excluding Special VFR;
 - iii) for all flights within any controlled airspace in VMC, if the flight is to be conducted in accordance with IFR;
 - iv) for flights within Class D Control Zones/Control Areas, irrespective of weather conditions;
 - v) for any flight from an aerodrome in the UK, being a flight whose destination is more than 40 km from the aerodrome of departure and the aircraft's MTWA exceeds 5700 kg;
 - vi) for any flight to or from the UK which will cross the UK FIR boundary;
 - vii) if the pilot intends to make use of the Air Traffic Advisory Service.

It is advisable to file a flight plan if a flight involves flying over the sea, more than 10 NM from the UK coast, or flying over sparsely populated areas where SAR operations would be difficult.

On any occasion when a flight plan need not and has not been filed, the pilot is required by Rule 20 of the Rules of the Air Regulations 1991 to inform the ATS unit at the departure aerodrome of his intention to fly. This action is known as 'booking out' but unlike normal flight plan procedure, the information will not be transmitted to any other ATS unit.

3.1 **Filing of Flight Plans**

Normally, flight plans should be filed on the ground with the ATSU at the aerodrome of departure at least 30 minutes before clearance to start up or to taxi is requested. However, for those flights intending to operate in, or through Controlled Airspace or above Advisory Routes, for which the controlling authority is London, Manchester or Scottish Control, the time should be at least one hour. A flight plan may be filed in flight through the relevant ATSU. If this airborne flight plan contains an intention to enter controlled airspace or certain Control Zones/Control Areas, at least 10 minutes warning of entry is required. In all cases, the message should start with the words 'I wish to file an airborne flight plan'. The following information shall be included in the airborne flight plan;

- a) aircraft identification and type;
- b) position and heading;
- c) level and flight conditions;
- d) departure aerodrome;
- e) estimated time at entry point;
- f) route and point of first intended landing;
- g) true airspeed;
- h) desired level on airway or advisory route.

3.2 **Cancellation of IFR Flight Plans**

An aircraft commander may elect to cancel an IFR flight plan when any of the following conditions apply:

- a) the airspace within which he is operating allows IFR cancellation and flight is permissible under either VFR or SVFR conditions;
- b) the in-flight weather conditions are VMC and will remain so throughout the descent and subsequent landing;
- c) the landing airfield is in visual contact from the aircraft;
- d) the aircraft's position is visually established in relation to the landing airfield;
- e) ATC at the landing airfield accepts the IFR cancellation.

NOTE: A pilot cannot exercise this choice in Class A Airspace, where all flights in any weather conditions are subject to IFR procedures.

4 Air Traffic Control

A list of Air Traffic Control Services, with their normal operating hours, is provided in the RAC Section of the UK AIP and also in the RAF En-Route Supplement, Jeppesen, Bottlang, Aerad and Pooley's Flight Guide.

A brief description of the radar and non-radar services available is given below.

4.1 Radar Services

4.1.1 Radar Control Service

A radar control service may be provided in Class A, B, D, and E airspace to aircraft operating under IFR, SVFR or VFR as appropriate. However, the pilot of an aircraft operating under IFR is required to comply with ATC instructions at all times whereas the pilot of an aircraft operating under SVFR or VFR may disregard ATC instructions provided he advises the controller of his intention to do so.

4.1.2 Radar Advisory Service

The controller will advise the pilot as necessary to maintain standard separation between participating aircraft and also pass to the pilot the bearing, distance and, if known, level of conflicting non-participating traffic, together with advice on action necessary to resolve the conflict. Where time does not permit this procedure to be adopted, the controller will pass avoiding action to resolve the conflict, followed by information on the conflicting traffic. Under radar advisory service (RAS) the following conditions apply:

- a) the service may be requested under any flight rules or meteorological conditions;
- b) controllers will expect the pilot to accept vectors or level allocations which may require flight in IMC. Pilots not qualified to fly in IMC should accept a RAS only where compliance with ATC advice permits the flight to be continued in VMC;
- c) a pilot who chooses not to comply with advisory avoiding action shall inform the controller. The pilot will then become responsible for initiating any avoiding action that may subsequently prove necessary;
- d) the pilot shall advise the controller before changing heading or level;
- e) information on conflicting traffic will be passed until the confliction is resolved;
- f) there is no legal requirement for pilots flying outside ATZs or controlled airspace to comply with instructions, because of the advisory nature of the service. However, pilots will be assumed to be complying with ATC instructions unless they state otherwise.

4.1.3 Radar Information Service

The controller will only provide traffic information; he will inform the pilot of the bearing, distance and if known, the level of the conflicting traffic. No avoiding action will be offered. The pilot is wholly responsible for maintaining separation from other aircraft whether or not the controller has passed traffic information. Under a radar information service (RIS), the following conditions apply:

- a) the service may be requested under any flight rules or meteorological conditions;
- b) the controller will only update details of conflicting traffic, after the initial warning, at the pilot's request or if the controller considers that the conflicting traffic continues to constitute a definite hazard;
- c) the pilot shall advise the controller before changing level, level band or route;
- d) RIS may be offered by the controller when the provision of RAS is impracticable;
- e) a request for RIS to be upgraded to RAS will be actioned as soon as practicable. If RAS cannot be provided the controller will continue to offer RIS.

4.1.4 Limitations of Service

Outside controlled airspace any radar service may be limited. If a radar controller considers that he cannot maintain a full radar service he will warn the pilot that cover is limited by radar range, weather, traffic density etc.

4.1.5 Pilot/Controller Agreement

A pilot shall specify the service he requires and shall establish verbal agreement as to the type of service with the controller, before any radar service is provided.

NOTE: The act of identifying an aircraft does not mean that a radar service is being provided.

4.1.6 RT Procedures

a) Initial Contact

Commanders shall endeavour to make contact with an ATSU, in accordance with Table 2 below:

Table 2 RT Contact Procedures

Flight Phase	In Controlled Airspace	Outside Controlled Airspace
Before take-off	Obtain clearances and special instructions from controlling authority.	Contact an ATSU that can provide at least a flight information service and alerting service, where practicable.
After take-off	Contact controlling authority whilst complying with instructions and clearances previously received. A controlling authority may give a priority air traffic clearance and service to a police aircraft on request.	

b) When airborne, on establishing two-way communication with a controller an aircraft commander shall pass the following information:

- i) callsign and aircraft type;

- ii) estimated position;
- iii) heading;
- iv) altitude/level;
- v) intention (next reporting/turning point, destination, etc.);
- vi) type of service required.

4.2 **Non-Radar Services**

4.2.1 **Procedural Service**

Procedural service is a non-radar air traffic service in which the prescribed standard minima based upon reported levels and position are applied between participating aircraft. The service may be provided in the following circumstances:

- a) for the separation of aircraft in holding patterns;
- b) for participating aircraft operating on Advisory Routes;
- c) when it is impracticable to provide a radar service owing to radar non-availability, radar overhead dark areas, permanent echoes, clutter etc;
- d) when an ATSU is providing an approach service to participating IFR traffic without the use of radar.

4.2.2 **Flight Information Service and Alerting Service**

A flight information service (FIS) and alerting service is provided by all ATSUs within the limits of available information. A specific FIS is provided day and night in each of the FIRs by LATCC and the Scottish Air Traffic Control Centre (ScATCC). The controllers providing FIS have no access to radar derived information. At the discretion of the controller, warning of proximity hazards may be issued to commanders when there is evidence that aircraft are, or might be, in dangerous proximity to each other. However, the controller cannot assume responsibility for the accuracy or completeness of such warnings because:

- a) position reports passed by commanders may be inaccurate;
- b) many civilian and military aircraft fly on a multiplicity of tracks and levels without communicating with ATSUs.

4.3 **Police Aircraft – Special Flight Numbers**

NATS may issue a special flight number (SFN) to a police aircraft upon request. The SFN will serve as a code that ensures priority over other traffic. All other police aircraft would be treated on a normal priority basis. Allocated SFN and associated ATC procedures shall be set out in the PAOM Part 2.

4.4 **En-Route Change from VMC/VFR to IMC/IFR**

An aircraft commander flying under VFR may only enter IMC after satisfying himself that he would be able to comply with all the IFR requirements in terms of fuel planning, pilot qualification, aircraft equipment and the acceptability of the forecast weather at the destination and alternate airfields. He shall also make allowance for terrain clearance during the IMC climb to the intended cruising altitude or flight level. (See also the requirement for a navigation log in Section 2 Chapter 13, paragraph 4).

4.5 **Airfields/Helipads without Approach Aids**

An aircraft commander shall approach an airfield/helipad that lacks an approach aid in VMC only. However, he may utilise an en-route airfield with a suitable approach aid in order to gain VMC, provided that the transit from the descent airfield to the destination meets the VMC weather minima.

Chapter 2 Aircraft Equipment

1 Minimum Equipment List

The ANO requires an aircraft to carry certain items of equipment that are regarded as essential for flight safety, according to the circumstances of the intended flight as set out in Schedules 4 and 5 of the said Order. A flight shall not commence if any of that equipment is not carried or is unserviceable, subject to any permission in the form of a Minimum Equipment List (MEL) that the CAA may have agreed with the operator. The MEL, including the operating limitations that would apply whenever stated items of equipment are not available for use, shall be incorporated into the PAOM Part 2.

2 Minimum Radio and Navigation Equipment

2.1 Without prejudice to any MEL, every aircraft shall be provided, when flying in the circumstances specified in the first column of Table 3, as set forth below, with the scales of equipment respectively indicated in that table:

Provided that, if the aircraft is flying in a combination of such circumstances the scales of equipment shall not on that account be required to be duplicated.

Table 3 Scales of Radio and Navigation Equipment Required

Aircraft and Circumstances of Flight	Scale of Equipment Required							
	A	B	C	D	E	F	G	H
1) All aircraft within the United Kingdom:								
a) when flying under Instrument Flight Rules within controlled airspace;	A ¹				E ¹	F ¹		
b) when flying within controlled airspace;	A ¹							
c) when making an approach to landing at an aerodrome notified for the purpose in the AIP.							G ¹	
2) All aircraft (other than gliders) within the United Kingdom:								
a) when flying at or above FL 245;	A ¹				E ¹	F ¹		
b) when flying within airspace notified for the purpose in the UK AIP;	A ¹				E ¹			
c) when flying at or above FL 100.					E ¹			

Table 3 Scales of Radio and Navigation Equipment Required

Aircraft and Circumstances of Flight	Scale of Equipment Required							
	A	B	C	D	E	F	G	H
3) All aircraft registered in the United Kingdom, wherever they may be:								
a) when flying for the purposes of public transport under Instrument Flight Rules:								
i) while making an approach to land;	A		C	D				H
ii) on all other occasions.	A		C					H
b) multi-engined aircraft when flying for the purpose of public transport under Visual Flight Rules.	A							H
c) single-engined aircraft when flying for the purpose of public transport under Visual Flight Rules:								
i) over a route on which navigation is effected solely by visual reference to landmarks;	A							
ii) on all other occasions.	A	B						
d) when flying under Instrument Flight Rules within controlled airspace and not required to comply with paragraph 3 a) above.	A ¹							

1. Unless the appropriate air traffic control unit otherwise permits in relation to the particular flight and provided that the aircraft complies with any instructions which the air traffic control unit may give in the particular case.

2.2 Scales of Radio and Navigation Equipment

The scales of radio and navigation equipment indicated in the foregoing table shall be as follows:

Scale A

Radio equipment capable of maintaining direct two-way communication with the appropriate aeronautical radio stations.

Scale B

Radio navigation equipment capable of enabling the aircraft to be navigated on the intended route including such equipment as may be prescribed.

Scale C

Radio equipment capable of receiving from the appropriate aeronautical radio stations meteorological broadcasts relevant to the intended flight.

Scale D

Radio navigation equipment capable of receiving signals from one or more aeronautical radio stations on the surface to enable the aircraft to be guided to a point from which a visual landing can be made at the aerodrome at which the aircraft is to land.

Scale E

Secondary surveillance radar equipment.

Scale F

Radio and radio navigation equipment capable of enabling the aircraft to be navigated along the intended route including either:

- a) i) automatic direction finding equipment;
ii) distance measuring equipment; and
iii) VHF omni-range equipment; or
- b) Equipment, including the Decca Flight Log, which will enable the aircraft to be navigated by means of signals received from radio navigation land stations forming part of the Decca radio navigation system and which provides the pilot with a visual indication of the aircraft's position relative to the intended route.

Scale G

Radio navigation equipment capable of enabling the aircraft to make an approach to landing using the Instrument Landing System.

Scale H

Radio navigation equipment capable of enabling the aircraft to be navigated on the intended route including:

- a) automatic direction finding equipment;
- b) distance measuring equipment;
- c) duplicated VHF omni-range equipment; and
- d) a 75 MHz marker beacon receiver.

Except that:

an aircraft may fly notwithstanding that it does not carry the equipment specified in this Scale if it carries alternative radio navigation equipment approved by the CAA in writing in accordance with the provisions of Article 14(7) of the ANO 2000.

Where not more than one item of equipment specified in this Scale is unserviceable when the aircraft is about to begin a flight, the aircraft may nevertheless take-off on that flight if:

- i) it is not reasonably practicable for the repair or replacement of that item to be carried out before the beginning of the flight;
- ii) the aircraft has not made more than one flight since the item was last serviceable; and
- iii) the commander of the aircraft has satisfied himself that, taking into account the latest information available as to the route and aerodrome to be used (including any planned diversion) and the weather conditions likely to be encountered, the flight can be made safely and in accordance with any relevant requirements of the appropriate air traffic control unit.

The following meanings are ascribed to the equipment when meeting these requirements:

- i) 'automatic direction finding equipment' means radio navigation equipment which automatically indicates the bearing of any radio station transmitting the signals received by such equipment;

- ii) 'VHF omni-range equipment' means radio navigation equipment capable of giving visual indications of bearings of the aircraft by means of signals received from very high frequency omni-directional radio ranges;
- iii) 'distance measuring equipment' means radio equipment capable of providing a continuous indication of the aircraft's distance from the appropriate aeronautical radio station; and
- iv) 'secondary surveillance radar equipment' means such type of radio equipment as may be notified as being capable of:
 - replying to an interrogation from secondary surveillance radar units on the surface; and
 - being operated in accordance with such instructions as may be given to the aircraft by the appropriate air traffic control unit.

Chapter 3 Reserved

Chapter 4 Flight Crew and Police Observer Responsibilities

1 Use of Check Lists

A set of normal and emergency check lists shall be kept on board the aircraft in a location easily accessible to the pilot during flight. The contents of the check lists shall also be set out in the PAOM Part 2, or may constitute a separate volume.

1.1 Normal Check Lists

Pilots shall be able to carry out from memory in the correct order, all the items in the normal check list that are required to be carried out in the air. In addition, the operator shall ensure, in aircraft flown by a single pilot, that the approach and pre-landing checks are placarded on the flight deck.

1.2 Emergency Check Lists

Pilots shall be able to carry out from memory those items listed under a given emergency as 'immediate actions', which should then be confirmed as soon as possible against the check list. The required additional actions shall be carried out according to the check list.

2 Aircraft Commander

An aircraft commander is authorised to exercise discretion and apply minima higher than those prescribed in this manual, if in his opinion it would be necessary to do so in order to secure the safety of his aircraft.

The aircraft commander shall invariably ensure that the procedures set out in paragraphs 2.1, 2.2, and 2.3 are correctly carried out.

2.1 Before Flight

- a) he has fully briefed himself on the meteorological situation relevant to his flight and, if required in accordance with Chapter 13 paragraph 4, has prepared a navigation log based on this information;
- b) the flight can be made safely, taking account of the routeing, terrain and navigation facilities;
- c) when planning an IFR flight, the aircraft commander shall calculate minimum safe altitude and minimum safe flight level in accordance with Section 4 Chapter 4 paragraph 5;
- d) all relevant performance criteria can be met;
- e) the destination and alternate airfields/landing sites are suitable;
- f) the aircraft payload, fuel, and oil requirements have been met in accordance with instructions in this manual;
- g) NOTAMS and Royal Flights affecting the proposed flight have been checked;
- h) his area competency and airfield category authorisations are applicable to the task;
- j) when required, an ATC flight plan has been filed with the appropriate ATSU;
- k) where the task cannot be achieved without easements from normal regulations, an appropriate exemption or permission exists and a copy is carried on board;

- l) a valid CAA permission exists in regard to any dangerous cargo that may be carried;
- m) the aircraft is serviceable, subject to any defects that would be acceptable in accordance with the MEL. Adequate flight time shall be available before the next maintenance check is due, and the technical log has been completed in accordance with instructions at Section 6 of this manual;
- n) copies of the technical log and load sheet are left with a responsible person prior to departure from a licensed aerodrome. Where there is no person available to whom the documents may be entrusted, the technical log and load sheet shall be carried in a flame-proof holder;
- p) the aircraft library is in the aircraft, in good condition and up-to-date;
- q) a satisfactory pre-flight inspection has been completed;
- r) the safety equipment is properly stowed and appears to be serviceable;
- s) all aircraft occupants are wearing survival suits when required, in accordance with Chapter 11 paragraph 2.2.5;
- t) all occupants of the aircraft are properly secured in a seat by safety belts or safety harness, before take-off, subject to those exemptions permitted in Section 5;
- u) all passengers have been briefed in accordance with the requirements of paragraph 8 and Section 5, when appropriate, and have been given the opportunity to read the passenger briefing card;
- v) Flight Reference Cards (FRCs) or Check Lists are to hand to cover all normal and emergency checks from Pre Start to Engine Shut Down and are used in accordance with the requirement set out in paragraph 1;
- w) in the event of a flight delay or cancellation, appropriate action is taken in regard to the welfare of passengers and rearranging the flight.

2.2 **During Flight**

- a) where required, the Pilot Navigation Log and a copy of the ATC flight plan are carried;
- b) the aircraft is operated in accordance with the FRC, limitations and handling data in the AFM;
- c) all relevant permissions and exemptions are observed;
- d) all occupants of the aircraft are properly secured in a seat by a safety belt or safety harness during flight in turbulent air or in any in-flight emergency during which the commander considers the precaution to be necessary, and before landing;
- e) in an emergency, where practicable, passengers are instructed in the action which they should take;
- f) the Force Control Room, or other designated co-ordination agency, is aware of the aircraft's whereabouts at all times.

2.3 **After Flight**

- a) the aircraft is safely parked and properly refuelled;
- b) the technical log has been completed;
- c) on completion of task, the pilot's personal log book and appropriate reports are completed: any unusual occurrences are reported to the Chief Pilot at the earliest opportunity;

- d) on completion of crew duty period, the Flight Time and Duty Record Sheets for each crew member are completed;
- e) night stops are avoided at airfields/landing sites where security is doubtful. Where such stops are unavoidable, the commander shall make adequate arrangements to protect the aircraft;
- f) the use of any CAA-issued permission or exemption has been recorded. The police task log may be used for this purpose, when available.

3 Departure and Approach Briefings

In regard to departure and approach, the handling pilot shall brief the non-handling pilot on the following:

- a) take-off decision point/speed;
- b) action to be taken in an emergency during/after take-off;
- c) navigation aids to be used during the departure;
- d) type of approach to be undertaken;
- e) navigation aids to be used during the approach;
- f) Decision Height (DH), or Minimum Descent Height (MDH) and Runway Visual Range (RVR) to be observed;
- g) overshoot procedure to be followed;
- h) RT calls to be made by the non-handling pilot;
- j) action in the event of an emergency during the approach;
- k) monitoring of airspeeds.

4 Aircraft Commander's Voyage Report

Whenever the aircraft commander feels that an incident that occurred during any phase of the flight should be brought to the attention of the Chief Pilot, a voyage report shall be completed. The specimen voyage report form at Appendix A may be used for the purpose. The form shall be completed as part of the immediate after flight documentation.

5 Duties of the Co-Pilot

When a co-pilot is carried he shall assume the duties allocated to him by the aircraft commander. The PAOM Part 2 shall list what these duties may comprise.

6 Duties of the Police Observer

When a police observer is carried he may, when satisfactorily trained in accordance with Part D (which may be amplified in the PAOM Part 2) be authorised by the aircraft commander to operate such aircraft systems and equipment as are necessary for the successful completion of the police task. The systems and equipment that the police observer may operate shall be specified in the PAOM Part 2.

7 Pilot at the Controls

A pilot wearing a fully secured and correctly adjusted harness shall occupy a pilot's station, which is equipped with a full set of flying controls, whenever the rotors of a helicopter are turning under power or the engine(s) of an aeroplane is(are) running.

8 Passenger Safety Briefing

Prior to take-off the pilot shall normally ensure that all passengers receive a safety briefing, although the task may be delegated to a person properly trained and authorised to do so. Such a person, who may be a police observer, shall report to the aircraft commander that the briefing has been carried out. Safety briefing cards, as illustrated in CAP 613, shall be available for passengers to study and the requirement for them to do so shall be brought to their attention. The briefing shall cover the following:

a) Overland Operations

- i) safe areas from which to approach the aircraft and danger areas to be avoided;
- ii) signals by which the pilot will indicate whether it is safe or not safe to approach;
- iii) normal and emergency exits, the use of door handles, both in normal and emergency modes;
- iv) how to secure and release seat belts;
- v) actions in the event of an emergency, including the brace position to be adjusted for an emergency landing;
- vi) rules on smoking.

b) Overwater Flights

For overwater flights, the following shall be added to the list of items for briefing prior to overland operations:

- i) The location and method of donning life jackets, with instruction on how and when to inflate them;
- ii) The location and removal of the dinghy or dinghies, and how and when to inflate them;
- iii) The location and operation of survival equipment;
- iv) Action to be taken in the event of a ditching and the avoidance of damage to flotation equipment.

NOTE: Briefing procedures for special operations may be found at Section 5.

8.1 Passengers Embarking/Disembarking – Helicopter Rotors Running

Unless a passenger is familiar with the procedures for boarding and leaving a helicopter with rotors running, he shall normally be escorted to and from the aircraft by the police observer.

8.2 Passenger in a Pilot's Seat – Dual Controls

A passenger shall not normally be carried in a pilot's seat when dual controls are fitted. If, for exceptional reasons, a passenger is carried in these circumstances he shall be fully briefed not to interfere with the controls and to safely stow articles such as cameras, bags and map boards which may restrict control movement.

Where it is necessary for this passenger to leave the aircraft with rotors running, the pilot shall brief him to avoid touching the controls and shall apply all available locks, whilst firmly holding the controls steady. The seat belt on the vacated seat shall be fastened prior to a subsequent take-off and controls shall be checked unlocked and free of fouling.

9 Start-Up Procedure

Where possible, all start ups should be monitored by a person standing well clear of the aircraft and in full view of the pilot. This person should have a suitable fire extinguisher available and be familiar with the airframe access points for the extinguisher, in order to deal with the possibility of a fire on start up. When starting up at an aerodrome with ATC facilities, the pilot shall call the tower for start-up clearance, unless local operating instructions state otherwise.

a) Start-up and Marshalling Signals

Start-up and marshalling signals shall be in accordance with Rules 47 and 48 of the Rules of the Air Regulations 1996.

Suitable illustrations, as depicted in CAP 393, shall be set out in the PAOM Part 2.

b) Manoeuvring at an Aerodrome

A pilot shall exercise extreme caution when manoeuvring close to other aircraft. Where possible, particularly if hover taxiing, a helicopter pilot should remain well clear of other aircraft, vehicles and structures, and manoeuvre downwind.

Chapter 5 Pre-Flight Briefing

Before an aircraft commander undertakes a task he shall satisfy himself that he has obtained all the available information on the operational requirement, the area of operation, route, payload, the location and availability of fuel, weather, and the capabilities of both aircraft and crew.

1 Meteorological Forecast and Actual Weather Information

Weather minima for departure, en-route transit and arrival are set out in Sections 3 and 4 of this manual, for VFR and IFR operations respectively.

The operator shall obtain local weather information and subsequently display it in the flight planning room at the beginning of each working day and prior to any expected night flying and whenever significant weather changes occur or are anticipated.

Contacts for obtaining forecast and actual weather reports shall be listed in the PAOM Part 2.

2 Fuel Planning

The appropriate formula from those set out in paragraph 3 below shall be applied for calculating the fuel required for a given flight. In certain circumstances the formulae may be varied, with the agreement of the CAA, when they shall be set out in the PAOM Part 2.

Fuel consumption rates shall be stipulated in the appropriate aircraft type supplement of the PAOM Part 2.

Fuel planning shall take account of the nature of the terrain to be overflown. Hospitable terrain is defined as that where a forced landing may be carried out with a high degree of confidence that consequential problems will not arise. Hostile terrain is defined as that where a forced landing is not possible, or which presents a consequential survival problem.

Notwithstanding that UK Airspace is IFR at night, flights undertaken solely as visual contact flights may be conducted in accordance with the VFR fuel policy.

3 Fuel Formulae

3.1 VFR Aeroplanes

- a) fuel to the destination,
PLUS
- b) fuel from destination to the planned alternate,
PLUS
- c) i) a contingency reserve 5% of a) and b) above and fuel for 20 minutes, at endurance speed, for a flight over hospitable terrain by day;
OR

- ii) a contingency reserve of 10% of a) and b) above and fuel for 30 minutes at endurance speed for a flight over hostile terrain or water at any time, or over hospitable terrain at night;

PLUS

- d) start, run-up and taxi allowance.

3.2 **VFR Helicopters/Night Visual Contact Flight**

- a) fuel for the estimated time of flight to the destination shall be based on the ground speed calculated from the least favourable of prevailing and forecast winds,

PLUS

- b) i) over hospitable terrain by day and where the groundspeed can be verified en-route: a contingency reserve of 10% of a) above or 20 minutes at the average cruise consumption for the flight, whichever is the greater,

OR

- ii) over hostile terrain or water, at night, or where the groundspeed cannot be verified en-route: a contingency reserve of 20% of a) above or 30 minutes at average cruise consumption, whichever is the greater,

PLUS

- c) start, run-up and taxi allowance.

3.3 **VFR Radius of Action Operations Aeroplanes and Helicopters**

- a) fuel for the duration of the task,

PLUS

- b) fuel to refuelling point,

PLUS

- c) i) fuel for 20 minutes, at endurance speed, for a flight over hospitable terrain by day;

OR

- ii) fuel for 30 minutes at endurance speed for a flight over hostile terrain or water at any time, or over hospitable terrain at night;

PLUS

- d) start, run-up and taxi allowance.

3.4 **IFR Aeroplanes and Helicopters**

- a) fuel to destination,

PLUS

- b) fuel for approach and overshoot at the destination,

PLUS

- c) fuel from destination to alternate,

PLUS

- d) a contingency reserve of 5% of a), b) and c),

PLUS

- e) holding fuel for 45 minutes at endurance speed,

PLUS

f) start, run-up and taxi allowance.

4 Conservation of Contingency Reserve

Contingency reserve fuel shall not be used for extending the period of time available for holding overhead the destination prior to departing for the alternate.

5 Fuel Monitoring

Fuel monitoring shall be carried out at regular intervals.

On reaching the operating area, the aircraft commander shall establish, from the appropriate fuel formula, the minimum fuel state at which he should leave the area in order to arrive at his refuelling point with the proper reserves of fuel.

The PAOM Part 2 shall include advice to the commander on the options that would require his consideration if at any stage it appeared that the fuel remaining was less than the fuel required.

6 Single Engine Diversions

Under certain wind conditions the route fuel consumption will be higher on one engine than on two. In this event, the aircraft commander shall calculate fuel consumption according to the single-engine consumption rate and reduced groundspeed. Guidance on the calculations for the necessary additional fuel shall be set out in the aircraft supplement in the PAOM Part 2.

Chapter 6 Aeroplane Performance

Multi-engined aeroplanes operated under and in accordance with a PAOC will normally be twin-engined, and classified as being of Performance Group C. Single-engined aeroplanes will normally be classified as being of Performance Group E. When aeroplanes classified as being of any other performance group are operated under the terms of a PAOC, the performance requirements for that aeroplane shall be specified in the PAOM Part 2.

1 Weight and Performance Requirements - Performance Group C Aeroplanes

1.1 Take-Off

- a) the weight does not exceed the maximum take-off weight specified for the altitude and the air temperature at the aerodrome at which the take-off is to be made;
- b) the take-off run required (TORR) and the take-off distance required (TODR) do not exceed the take-off run available (TORA) and the emergency distance available (EDA), having regard to the following:
 - i) the weight of the aeroplane at the start of the take-off run;
 - ii) the altitude at the aerodrome;
 - iii) the air temperature at the aerodrome;
 - iv) the average slope of the surface of the aerodrome in the direction of take-off over the EDA; and
 - v) not more than 50% of the reported headwind component or not less than 150% of the reported tailwind component.

1.1.1 Net Take-Off Flight Path (All Engines Operating)

The aeroplane shall clear any obstacle in its path by at least 35 ft vertically, or by at least 50 ft in the turn if it is intended to change the direction of flight by more than 15°, having regard to the following:

- a) the weight of the aircraft at the start of the take-off run;
- b) the altitude of the aerodrome;
- c) the air temperature at the aerodrome;
- d) not more than 50% of the reported headwind component or not less than 150% of the reported tailwind component.

- NOTES:**
- 1 An obstacle shall be deemed to be in the path of the aeroplane if the distance from the obstacle to the nearest point on the ground below the intended flight path does not exceed 75 m.
 - 2 When turning after take-off, the aeroplane shall not be assumed to make a change of direction of a radius less than that specified for a steady turn.

1.1.2 Net Take-Off Flight Path (One Engine Inoperative)

Where it is intended to fly the aeroplane for any period before reaching a height of 1500 ft above the aerodrome from which the take-off is to be made in conditions which will not ensure that any obstacles can be located by means of visual

observation, the net take-off flight path with one engine inoperative shall be calculated from the point at which visual reference would be lost. Up to that point the calculation of the net take-off flight path with all engines operating is appropriate. For flight beyond that point the net take-off flight path with one engine inoperative shall be calculated as being appropriate to the factors contained in paragraph 1.1.1 a) to d). The aeroplane shall clear any obstacle in its path by at least 35 ft vertically, or by at least 50 ft in the turn if it is intended to change the direction of flight by more than 15°.

- NOTES:**
- 1 An obstacle shall be deemed to be in the path of the aeroplane if the distance from the obstacle to the nearest point on the ground below the intended flight path does not exceed 75 m plus $\frac{1}{8}$ of the distance from such point to the end of the EDA measured along the intended line of flight of the aeroplane, or 900 m, whichever is the less.
 - 2 When turning after take-off, the aeroplane shall not be assumed to make a change of direction of a radius less than that specified for a steady turn.

1.2 En-Route

An aeroplane, at any time after it has reached 1500 ft above the aerodrome of departure, shall be capable of continuing the flight at altitudes not less than the relevant minimum altitude for safe flight, in the event of any one engine becoming inoperative at any point on its route or on any planned diversion therefrom. The other engine or engines shall operate within the specified maximum continuous power conditions. The aeroplane shall be capable of reaching a point 1500 ft above an aerodrome at which a safe landing can be made and, after arrival at that point, be capable of maintaining that height.

Provided that in assessing the ability of the aeroplane to satisfy this condition, it shall not be assumed to be capable of flying at any point on its route at an altitude exceeding the performance ceiling, with all engines operating specified as being appropriate to its estimated weight at that point.

1.3 Landing

- 1.3.1 The landing weight of the aeroplane shall not exceed the maximum landing weight specified for the altitude and the expected air temperature for the estimated time of landing at the aerodrome of intended landing and at any alternate aerodrome.
- 1.3.2 The distance required by the aeroplane to land from a height of 50 ft otherwise than in accordance with specified data for short field landing does not, at the aerodrome of intended landing or at any alternative aerodrome, exceed 70% of the landing distance available (LDA) on the most suitable runway for a landing in still air conditions, and on the runway that may be required for landing because of the forecast wind conditions. For the purposes of this condition, the distance required to land from a height of 50 ft, shall have regard to the following:
 - a) the landing weight;
 - b) the altitude at the aerodrome;
 - c) the ISA temperature appropriate to the altitude at the aerodrome (this assumes that a forecast temperature is not available);
 - d) Runway slope:
 - i) a level surface in the case of runways useable in both directions. The assumption is that the pilot would choose to land uphill unless the tailwind effect more than cancelled out the benefit of doing so;
 - ii) the average slope of the runway in the case of runways useable in only one direction;

- e) Surface wind.

Not more than 50% of the reported headwind component or not less than 150% of the reported tailwind component.

1.3.3 Short Field Landing

As an alternative to the conditions set out in paragraph 1.3.1 and 1.3.2, the distance required by the aeroplane to land in accordance with specified data for short field landing shall not exceed the LDA on the most suitable runway for a landing in still air conditions and also on the runway that may be required for landing because of the forecast wind conditions. These conditions shall apply to any landing, whether at the intended destination aerodrome or an alternative aerodrome, whether all engines are operating or one is inoperative.

The distance required to land from the appropriate height shall be taken to be that specified as being appropriate to the factors set forth in paragraph 1.3.2 above. The appropriate height shall be:

- a) for a landing with all engines operating any height between 30 ft and 50 ft in the UK, and 50 ft elsewhere; and
- b) for a landing with one engine inoperative 50 ft in the UK and elsewhere:

Provided that:

- i) if the specified distance required to land from a height of 50 ft with one engine inoperative at the intended destination aerodrome exceeds the LDA it shall be sufficient to designate on the flight plan an alternate aerodrome where the LDA accommodates the specified distance required to land from a height of 50 ft with one engine inoperative;
- ii) where it is intended to land at night, or when the cloud ceiling or ground visibility forecast are less than 500 ft and 1 NM respectively for the estimated time of landing at the aerodrome of intended destination and at any alternate aerodrome in accordance with the specified data for short field landing with all engines operating, the landing distance requirements shall be determined in accordance with paragraph 1.3.1 and 1.3.2.

2 Weight and Performance Requirements - Performance Group E Aeroplanes

2.1 Take-Off

- 2.1.1 The weight for the altitude and the air temperature at the aerodrome at which the take-off is to be made does not exceed the maximum take-off weight specified as being appropriate to:

- a) the weight at which the aeroplane is capable of a rate of climb of 700 fpm if it has retractable landing gear and of 500 fpm if it has fixed landing gear, in the en-route configuration and with all engines operating within the specified maximum continuous power conditions; and
- b) the weight at which the aeroplane is capable of a rate of climb of 150 fpm with one engine inoperative, in the en-route configuration, if it is necessary to be flown solely by reference to instruments for any period before reaching the minimum altitude for safe flight on the first stage of the route to be flown. The weight calculation shall be based on the information contained in the AFM.

- 2.1.2 The TODR to attain a height of 50 ft, with all engines operating within the maximum take-off power conditions specified, when multiplied by a factor of 1.33, does not exceed the EDA at the aerodrome at which the take-off is to be made. The distance required by the aeroplane to attain a height of 50 ft shall have regard to the following:
- a) the weight of the aeroplane at the start of the take-off run;
 - b) the altitude at the aerodrome;
 - c) the air temperature at the aerodrome;
 - d) not more than 50% of the reported headwind component or not less than 150% of the reported tailwind component.

2.2 **En Route**

The aeroplane shall be capable of continuing the flight at altitudes not less than the relevant minimum altitude for safe flight stated in, or calculated from the information contained in the AFM, to a point 1000 ft above a place at which a safe landing can be made 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. The other engine or engines shall operate within the specified maximum continuous power conditions. Provided that in assessing the ability of the aeroplane to satisfy this condition, it shall not be assumed to be capable of flying at any point on its route or any planned diversion therefrom at an altitude exceeding that at which it is capable of a rate of climb of 150 fpm, with all engines operating within the maximum continuous power conditions specified. If it is necessary to be flown solely by reference to instruments, the aeroplane shall be capable of a rate of climb of 100 fpm, with one engine inoperative.

2.3 **Landing**

The landing weight of the aeroplane for the altitude and the expected air temperature for the estimated time of landing at the aerodrome of intended landing and at any alternate aerodrome shall not exceed the maximum landing weight specified:

- a) at which the aeroplane is capable of a rate of climb of 700 fpm if it has retractable landing gear and of 500 fpm if it has fixed landing gear, in the en-route configuration and with all engines operating within the specified maximum continuous power conditions; and
- b) the weight at which the aeroplane is capable of a rate of climb of 150 fpm with one engine inoperative, in the en-route configuration, if it is necessary to be flown solely by reference to instruments for any period after leaving the minimum altitude for safe flight on the last stage of the route to be flown – the weight calculation shall be based on the information contained in the AFM;
- c) the landing distance required by the aeroplane to land from a height of 50 ft does not, at the aerodrome of intended landing or at any alternative aerodrome, exceed 70% of the LDA on the most suitable runway for a landing in still air conditions. For the purposes of this condition, the distance required to land from a height of 50 ft shall have regard to the following:
 - i) the landing weight;
 - ii) the altitude at the aerodrome;
 - iii) the ISA temperature appropriate to the altitude at the aerodrome. This assumes that a forecast temperature is not available.

3 Limitations - Night Flying and Bad Weather

An aeroplane shall not fly at night or when the cloud ceiling or visibility are less than 1000 ft and 1 NM respectively, as prevailing at the aerodrome of departure and as forecast for the estimated time of landing, at the aerodrome at which it is intended to land and at any alternate aerodrome.

The foregoing prohibition shall not apply if the aeroplane is capable of a rate of climb of 150 fpm, with one engine inoperative.

Chapter 7 Helicopter Performance

1 Helicopter Performance Group Categories

1.1 Performance Group A

A multi-engined helicopter with performance such that, following critical power unit failure:

- a) After take-off, is able to land safely on the rejected take-off area, before passing the critical decision point (CDP), or, thereafter continue the flight to an alternative landing area. The minimum size of the planned landing area, rejected take-off area and alternative landing area shall be as designated in the AFM;
- b) On the approach, after passing the landing decision point (LDP) is able to land safely in the planned landing area.

1.2 Performance Group A (Restricted)

A multi-engined helicopter with performance such that in the case of a critical power unit failure, it is able, albeit at probably a lower rate of climb than the Group A equivalent, to continue the flight except when the failure occurs prior to CDP after take-off or after LDP before landing, when a forced landing may be required.

1.3 Performance Group B

A multi-engined or single-engined helicopter with performance such that, in the event of the failure of one power unit at any stage in the flight a forced landing has to be made.

2 Helicopter Performance Groups - Operations by Aircraft in Groups A and A (Restricted) to Lower Performance Group Criteria

A helicopter in respect of which there is in force under the ANO a Certificate of Airworthiness designating the helicopter as being of Performance Group A or Group A (Restricted) may fly when operating under a PAOC in accordance with the weight and related performance requirements prescribed for helicopters designated as being of:

- a) Performance Group A (Restricted) in the case of a helicopter designated as being of Performance Group A if :
 - i) the MTWA of the helicopter is less than 5700 kg; and
 - ii) the total number of passengers carried on the helicopter does not exceed 15; or
- b) Performance Group B if:
 - i) the MTWA of the helicopter is less than 2730 kg; and
 - ii) the total number of passengers carried does not exceed nine.

- NOTES:**
- 1 Where this manual stipulates a minimum performance group standard for a particular operation, an aircraft commander shall not have the option to select any lower performance group criteria in order to accommodate a task.
 - 2 Helicopters certificated to the requirements of JAR-27 or 29 will not be eligible for classification in either Performance Groups A, A (Restricted) or B. There is however a degree of equivalence which allows the following consideration to be applied:

- i) A helicopter certificated to JAR-27 will be eligible for operational approval in Performance Class 3 and may be considered as being in Performance Group B in respect of the PAOM.
- ii) A helicopter certificated to JAR-27 Category A, will be eligible for operational approval in Performance Classes 1, 2 and 3 and may be considered as being in Performance Groups A, A (Restricted) or B, as appropriate, in respect of the PAOM.
- iii) A helicopter certificated to JAR-29 Category B will be eligible for operational approval in Performance Class 3 and may be considered as being in Performance Group B in respect of the PAOM.
- iv) A helicopter certificated to JAR-29 Category A will be eligible for operational approval in Performance Class 1, 2 or 3 and may be considered as being in Performance Groups A, A (Restricted) or B, as appropriate, in respect of the PAOM.

The 15 passenger limitation on Performance Group A (Restricted) and the nine passenger limitation on Performance Group B are still applicable.

3 Helicopter Performance Groups – Compliance with Standards

3.1 Performance Group A

As operations to Performance Group A standards would ensure no risk to persons or property on the ground or to the helicopter and its occupants, such standards should be used whenever possible but shall invariably be met when any of the following conditions apply:

- a) IMC;
- b) where, in the event of a power unit failure, the surroundings would preclude a forced landing that did not endanger the safety of persons or property on the ground, or of the aircraft occupants. These requirements may be waived for HEMS flights where it is necessary to save life, subject to the compliance with the HEMS procedures set out in Section 5 Appendix A;
- c) operating VFR above a cloud cover of more than 4 oktas;
- d) operating at an elevated site.

3.2 Performance Group A (Restricted)

Performance Group A (Restricted) standards may be utilised in the following circumstances:

- a) during overwater operation subject to the requirements of Chapter 11 and Section 3 Chapter 3 paragraph 3.5;
- b) during the overflight of congested areas or inhospitable terrain by day or night whilst in VMC;
- c) when operating VFR above a cloud cover of less than 4 oktas;
- d) for operations at sites that meet the criteria set out in Chapter 8 paragraph 3.2, for Performance Group A (Restricted) helicopters.

3.3 Performance Group B

Performance Group B standards may be utilised when conditions accord with Table 4 below:

Table 4 Performance Group B Helicopters – Operating Circumstances

Circumstances of Flight	CAA – Agreed Passengers	Other Passengers
Day over Land	a) The flight is conducted over terrain suitable for an emergency landing outside a congested area;	
	b) All relevant obstacles can be readily located by visual observation.	
	c) An emergency landing can be made at any time without danger to persons or property on the surface or the risk of serious injury to the occupants of the helicopter.	c) An emergency landing can be made at any time without danger to persons or property on the surface or the risk of injury to the occupants of the helicopter.
Night over Land	CAA – Agreed Passengers Only	
	a) Operations shall be restricted to pre-positioning or re-positioning flights;	
	b) The helicopter shall not be flown over a congested area;	
	c) The helicopter shall be operated so that an emergency landing can be made at any time without danger to persons or property on the surface or the risk of serious injury to the occupants of the helicopter;	
	d) Landings shall be made only at sites that conform with the criteria set out in Chapter 8 paragraph 3.2.	
Day over Water	Flights are permitted in accordance with Section 3, Chapter 3 paragraphs 3.6 and 3.7.	
Night over Water	Flights shall not be carried out.	

4 Performance Group A Requirements

4.1 Take-Off Weight

The take-off weight shall not exceed:

- a) the MTWA specified for the altitude and the air temperature at the site;
- b) the weight at which the rejected take-off distance required does not exceed the rejected take-off distance available, having regard to altitude and temperature;
- c) the weight at which the continued take-off distance required does not exceed the continued take-off distance available, subject to altitude and temperature.

4.2 Wind Component Calculations

The following wind component factors shall be used when calculating maximum take-off weights with regard to rejected take-off and continued take-off distances required.

- a) not more than 50% of the reported headwind component;

b) not less than 150% of the reported tailwind component.

4.3 **Take-Off Net Flight Path**

The weight at take-off of the helicopter shall be such that with one engine inoperative and the other engine operating at maximum permitted single engine power as specified in the AFM having taken into account altitude, temperature and wind component calculations, the following requirement shall be met: The helicopter net flight path shall clear any obstacle in its flight path by a vertical distance of at least 35 ft between a point plotted above the end of the TODR and a height of 1000 ft above the aerodrome of departure.

NOTE: An obstacle need not be considered to be within the flight path if its lateral margin from the nearest point on the surface below the intended flight path exceeds the following:

- a) where navigational accuracy can be confirmed by suitable visual cues:
 - DAY – 7 x Rotor Diameter
 - NIGHT – 10 x Rotor Diameter
- b) where navigational accuracy cannot be confirmed by suitable visual cues but can be achieved by use of navigational aids:
 - 300 Metres
- c) where navigational accuracy cannot be confirmed by suitable visual cues or by use of navigational aids:
 - 900 Metres

4.4 **En-Route**

The performance requirements with one engine inoperative and the other engine operating at maximum continuous single engine power shall be that, at 1000 ft above the aerodrome, the minimum rate of climb is 150 ft per minute gross (50 ft per minute net), at the best rate of climb speed (V_y).

4.5 **Approach and Landing**

The landing weight for the aerodrome of destination or alternate shall not exceed:

- a) the maximum landing weight specified for the altitude and expected air temperature at the estimated time of landing;
- b) the weight at which the one engine inoperative landing distance required does not exceed the landing distance available taking into account altitude and temperature.

4.6 **Go-Around Flight Path**

The performance requirements for a go-around or balked landing flight path are the same as those for the take-off net flight path, except that the flight path is deemed to commence at the LDP, taking into account the altitude and temperature.

5 **Performance Group A (Restricted) Operations by Group A Helicopters**

The conditions under which a Performance Group A helicopter may be operated to Performance Group A (Restricted) standards are set out at paragraph 2 a).

The difference between Performance Group A and Performance Group A (Restricted) is that, whereas Performance Group A requires a 35 ft vertical clearance from an obstacle under the flight path, Performance Group A (Restricted) does not specify a clearance.

The take-off weight shall not exceed the Performance Group A (Restricted) WAT limit, where specified; otherwise the Performance Group A WAT limit shall apply.

Performance Group A (Restricted) en-route requirements above 500 ft AGL are identical to those that apply to Performance Group A en-route.

The minimum site criteria shall be as set out in Chapter 8 paragraph 3.2.

The PAOM Part 2 shall list the range of Performance Group categories that lies within the capability of each helicopter type operated. The operator shall indicate which of these Performance Groups he intends to utilise.

6 Performance Group B Operations by Group A Helicopters

The conditions under which a Performance Group A helicopter may be operated to Performance Group B standards are set out at paragraph 2 b).

The take-off weight shall not exceed the Group B WAT limit. If the AFM does not include Group B information, the Group A WAT limit shall not be exceeded.

7 Performance Group B Helicopters – Take-Off

The take-off weight shall not exceed the WAT limit.

8 Helicopter Operations in the Height/Velocity Avoid Area

In order to operate effectively in the search role, a helicopter may occasionally have reason to fly within the range of heights and airspeeds known as the height/velocity avoid area. This area of operation shall normally be avoided, as an engine failure therein is likely to result in a crash or a heavy landing. When flying in the height/velocity avoid area, the commander shall observe the following procedure:

- a) the operation shall not endanger persons or property on the ground;
- b) aircraft weight shall be as light as practicable;
- c) the number of occasions on which flight takes place in the height/velocity avoid area shall be kept to the minimum but several short periods are preferable to one sustained period;
- d) operations should, if possible, be restricted to the edge of the avoid area, at a height/velocity combination that provides a high probability of achieving a safe forced landing in the event of an engine failure;
- e) engine condition instruments shall be checked prior to the operation and frequently monitored during the operation;
- f) reconnaissance of the surface of the search area and its surroundings should be undertaken beforehand, if practicable, to detect the presence of litter and other material that might be ingested by an engine;
- g) all seat harnesses shall be tight and locked;
- h) any passengers shall be CAA-agreed passengers;
- j) the number of occupants shall be kept to the minimum.

Chapter 8 Aerodromes and Helipads

1 General Aerodrome Categorisation

The operator shall classify all aerodromes, including helipads, in his operating area as either Category A or B and list them as such in the PAOM Part 2. Details of such sites shall be incorporated into the landing site directory which shall form a volume of the PAOM Part 2 and be carried in the aircraft.

An aircraft commander may fly at a Category A location without a special briefing or familiarisation visit.

Prior to using a Category B location, an aircraft commander shall acquaint himself with its characteristics, by one or more of the following means:

- a) study of a brief prepared by the operator;
- b) a verbal brief given either by the Chief Pilot, or a training captain, or a line training captain, who shall be familiar with the location;
- c) a familiarisation flight to the location, under the command of any of the personnel in b) above.

The operator shall specify, in the PAOM Part 2, which method of familiarisation shall be applicable to any Category B location.

2 Aerodrome Categorisation Requirements

2.1 Category A

Licensed aerodromes that are out of hours (when available) are to be regarded as Category B.

2.1.1 Aeroplanes

VFR All licensed aerodromes.

IFR All licensed aerodromes provided:

- a) at least one approach aid is available, with an approved approach procedure;
- b) at least one runway is available that meets the operator's performance requirements;
- c) circling height is not greater than 800 ft Above Airfield Level (AAL) (assumes dominant obstacle is not greater than 500 ft AAL);
- d) adequate lighting is available.

2.1.2 Helicopters

VFR All licensed aerodromes, surface level helipads and ad hoc sites that meet the criteria set out in paragraph 3.2.5.

IFR All licensed aerodromes, surface level helipads and ad hoc sites that meet the criteria set out in paragraph 3.2.5, provided:

- a) at least one approach aid is available, with an approved approach procedure;
- b) adequate lighting is available.

2.2 **Category B**

2.2.1 **Aeroplanes**

All aerodromes that fail to meet the conditions for Category A.

2.2.2 **Helicopters**

All airfields and helipads that fail to meet the conditions for Category A and elevated helipads, ships and drilling rigs.

3 **Aerodrome and Helipad Criteria**

3.1 **Airfield Requirements – Aeroplanes**

An aeroplane shall normally be permitted to take-off and land only at an aerodrome licensed under the ANO, a Government aerodrome or an aerodrome owned or managed by the CAA. However, an unlicensed aerodrome may be used, provided that the following requirements are met:

a) **Day or Night**

- i) any passengers shall be CAA-agreed passengers;
- ii) the aircraft shall comply with the public transport performance requirements for operating in its Performance Group;
- iii) a system to monitor the aircraft's departure and arrival for safety shall be set out in the PAOM Part 2;
- iv) at an unlicensed aerodrome used as a main operating base or where the frequency of passenger carrying movements (take-offs or landings) is expected to exceed 10 per day on a regular basis, the operator shall ensure that Rescue and Fire-Fighting Services (RFFS) are provided to the scale recommended in Appendix E of CAP 428 (Safety Standards at Unlicensed Aerodromes).

b) **Night**

Aerodrome lighting that illuminates the runway threshold, edges and end, and approach slope guidance lighting shall be available during take-off and landing. However, if only runway edge lighting is available, operations shall be permitted where the length of runway so lit is at least twice as long as the TODR or LDR, as dictated by the ambient atmospheric conditions and weight of the aircraft.

3.2 **Helicopter Landing Sites**

3.2.1 **Rescue and Fire Fighting Services**

Although a helicopter may operate from an unlicensed aerodrome or site, the operator shall ensure that the RFFS equipment listed below is provided at any such location used as a main operating base, or where the frequency of passenger-carrying movements (take-offs or landings) is expected to exceed 10 per day on a regular basis:

- 90 litres pre-mixed AFFF unit complete with hose and a discharge rate of 72 litres per minute;
- 25 kg mobile dry powder unit;
- 10 kg CO₂ twin pack system with an extension nozzle.

NOTE: A system to monitor the aircraft's departure and arrival for safety shall be set out in the PAOM Part 2.

3.2.2 Any landing site shall be readily identifiable from the air.

3.2.3 **Pre-Surveyed (Performance Group A Helicopters)**

A pre-surveyed site is one where the size and other physical characteristics have been determined by means of a ground inspection carried out by a competent representative of the operator. The features of the site shall be assessed as follows and recorded in a landing site directory:

a) **Size and Shape**

The site shall be large enough to accommodate the aircraft's performance requirements in terms of rejected and continued take-off distances and single-engined climb out angle, up to 1000 ft above surface level. The area available for touch down and take-off, shall comprise an area the equivalent of a circle of at least the following dimensions:

DAY Twice the length of the helicopter, including the rotors;

NIGHT Three times the length of the helicopter, including the rotors.

b) **Surface**

The landing and take-off area shall be strong enough to support the weight of the helicopter and associated vehicles, such as refuellers. The surface of the remainder of the site shall meet any stipulated AFM requirements but, if none are stipulated, shall be such that in the event of a rejected take-off the helicopter and its occupants are unlikely to sustain damage or injury. The site shall be free of loose debris that is capable of causing damage to the helicopter or loss of visual references owing to the recirculation of particles such as sand or snow.

c) **Slope**

Any slope in the area on which the aircraft may alight shall be within the sloping ground limits set out by the operator in the PAOM Part 2, which shall not exceed any such limits that may be published in the AFM.

d) **Surrounds**

The location of obstacles may make it necessary to restrict the direction of approach and take-off to specified useable arcs. At night, a site shall be either of Type X or Type Y. All base operating sites shall be Type X.

Type X (Lit) shall be equipped with a ground lighting system that clearly indicates an obstruction-free area that will accommodate appropriate reject, landing and take-off areas. In addition, any significant obstructions that may be overflown during approach and departure shall be lit.

Type Y (Unlit) shall accommodate at least the equivalent length of the 'clear airfield profile' requirement for the ambient atmospheric conditions and aircraft weight, in order to ensure adequate obstacle clearance and generous reject areas where the peripheral obstructions are unlit. A ground inspection shall have ascertained the height of obstructions under the approach and departure paths. Where such heights are significant, the landing site directory shall stipulate the use of the variable landing decision point/critical decision point technique applicable to a helipad operation, in order to provide at least twice the standard Group A vertical clearance of obstacles overflown, namely 2 x 35 ft.

NOTE: Guidance on the compilation of a landing site directory may be found in the CAP 613.

3.2.4 **Pre-Surveyed (Performance Groups A (Restricted) and B)**

The landing site guidance for Performance Groups A (Restricted) and Performance Group B helicopter operations shall be the same as that for Performance Group A with the following exceptions:

a) **Terrain**

Outside the touch down and take-off areas, which shall be identical to the Performance Group A requirements, the terrain shall at all times allow a forced landing to be made without risk to persons or property on the surface, or injury to the aircraft occupants, in the event of an engine failure.

b) **Sites in a Congested Area**

Operations into a site within a congested area of a city, town or settlement shall be restricted, as follows:

DAY There shall be an approach lane and a departure lane, suitable for the wind conditions at the time of the operation, which meet the previously specified requirements for a safe forced landing.

NIGHT Not permitted.

3.2.5 **Ad Hoc**

An ad hoc site, by its nature, has not been pre-surveyed. It may be a location whose characteristics have been described to a pilot prior to flight, or in the vicinity of map co-ordinates passed to a pilot, with a request that he lands as close as is practicable to the map reference. In either case, the pilot shall before landing confirm, to the best of his ability by aerial inspection, that the following criteria are met:

a) **Size**

The area available for touchdown and take-off shall comprise an area that encompasses the equivalent of a circle of at least the following diameter:

DAY Twice the length of the helicopter, including rotors.

NIGHT Three times the length of the helicopter, including rotors.

b) **Shape and Surrounds**

The shape of the site, and the nature of its immediate surroundings shall accommodate the approach, overshoot, touchdown area and take-off area, in a manner that will allow the helicopter safely to clear or side-step obstacles, in the event of an engine failure, without risk to persons or property on the surface, or injury to the aircraft occupants. The approach and take-off/climb-out paths shall be deemed to lie between the surface and a height of 500 ft.

An obstacle may encroach into the flight path, provided that it can easily be seen and avoided by side stepping without the use of bank in excess of 15°.

c) **Obstructions**

DAY The touchdown and take-off areas may contain a small frangible object, such as a bush or thin wooden post, provided that it is visible to the pilot and is no nearer than three metres to any part of the helicopter, including the rotors.

NIGHT The touchdown and take-off areas shall be clear of any obstructions.

NOTE: An aircraft commander should exercise caution before choosing, for convenience, a school field or any other form of children's playground as an ad hoc landing site, unless a police ground party has secured the area (see Section 5, Chapter 10, paragraph 2 f) vi)). Even when such a location looks unpopulated there is a danger that children may suddenly appear on the scene, attracted by the sight or sound of the helicopter.

3.2.6 **Limitations on Helicopter Pre-Surveyed Landing Sites at Night**

Only helicopters complying with the Performance Group A standard shall operate at night into any Type X or Type Y site within a congested area, or into a Type Y site elsewhere (see paragraph 3.2.3 d) for definitions of Types X and Y sites).

3.2.7 **Limitations on Helicopter Ad Hoc Landing Sites**

- a) CAA-agreed passengers at night.
- b) An ad hoc site within a congested area shall not be used at night.
- c) Only helicopters complying with the Performance Group A and A (Restricted) standard shall operate into ad hoc sites in open country at night.
- d) An ad hoc site within a congested area shall not normally be used by day, except under arrangements agreed with the CAA and set out in the PAOM Part 2.

3.2.8 **Night Operations into a Type Y Site**

Except where a type Y site is in an open country area and the site is included in the unit's approved landing site directory, a ground party shall attend at the site to ensure the absence of non-police personnel, uncontrolled animals and vehicles other than those vehicles that may provide useful illumination of the landing site.

The pilot shall inspect the entire site by sweeps of a powerful lamp before commencing an approach. If thermal imaging equipment is fitted, the pilot may consider taking interpretative advice from the police observer, to confirm site clearance.

The operator shall ensure that the touchdown point is illuminated throughout the approach by a landing lamp and, wherever possible, by the sensibly directed lights of the ground party's vehicles.

During approaches the landing decision point technique applicable to a helipad operation shall be targeted on a touchdown point in the middle of the landing site. During departures the helipad technique will be utilised in order to provide at least twice the standard Group A clearance (35 ft) from obstacles overflow.

Exceptionally, clear airfield approach and departure profiles may be adopted at locations such as disused airfields, in accordance with arrangements agreed between the operator and the CAA and set out in the PAOM Part 2.

3.2.9 **Night Operations into Ad Hoc Sites (Open Country Only)**

Exceptionally, unlit ad hoc landing sites outside congested areas may be used at night, provided that the pilot is familiar with the local terrain, which shall be open, flat and free of obstacles that would significantly reduce safety margins in the event of an approach and go-around. These criteria are deemed to have been met where the area concerned satisfies the following requirements for the weight of the aircraft in the ambient atmospheric conditions:

- a) Performance Group A Helipad Profile Technique - at least the length required for a clear area profile.
- b) Performance Group A or A (Restricted) Clear Airfield Profile - at least twice the length of the normal clear area, provided that the surroundings are suitable.

Where practicable, the Performance Group A helipad profile technique is the preferred option.

The pilot shall first reconnoitre the proposed landing site from a height of at least 500 ft above ground level, initially with the aid of a powerful lamp that is capable of illuminating the area, to the extent that any obstructions may be seen on the approach, landing area, or take-off path. This inspection shall serve to confirm the absence of non-police personnel, uncontrolled animals and vehicles other than those vehicles that may provide useful illumination of the landing site.

The operator shall complete a record of operations into ad hoc sites at night, which shall be preserved for at least two years and made available for CAA inspection.

3.2.10 **Determination of Wind Direction for Landing at Night**

The pilot shall seek and utilise the best available indication of the local surface wind before landing at any site. The information may be obtained from any of the following sources:

- a) an illuminated portable wind direction indicator at the site;
- b) a nearby airfield RT report, provided that the local terrain does not invalidate such information;
- c) visible evidence in the form of, say, smoke trails or flags fluttering from poles. Such sources may be picked out in ambient ground lighting or illuminated by airborne equipment;
- d) any other reliable source.

4 Helipad Requirements – Carriage of Medical Passengers

NOTE: See also the Carriage of Medical Passengers (Section 5, Chapter 2, paragraph 1).

Where there is a genuinely perceived threat to a person's life, the aircraft commander may operate at a landing site which does not meet the criteria mentioned above, providing all the following requirements are met:

- a) the helicopter MTWA shall be less than 5700 kg;
- b) take-off and landing weights shall not exceed those specified in the AFM as being appropriate to Performance Group A (Restricted) for the altitude and the air temperature at the landing site;
- c) the site shall be large enough to accommodate the aircraft's performance requirements in terms of single-engined climb out angle, up to 1000 ft above

surface level. The area shall encompass the space required for touchdown and take-off, as follows:

- DAY At least the equivalent of a circle with a diameter of twice the length of the helicopter, including rotors;
- NIGHT At least the equivalent of a circle with a diameter of three times the length of the helicopter, including rotors;

- d) before landing at any site within a congested area, or wherever there is evidence of people and/or loose animals, the aircraft commander shall take such steps as would be reasonable to satisfy himself that the site is under the control of a police or ambulance ground party which is supervising access and maintaining an obstruction-free operating area of the required size;
- e) the aircraft commander shall make every reasonable effort to minimise the period during which there would be danger to the aircraft and its occupants and to persons and property on the surface, in the event of failure of a power unit;
- f) the aircraft commander shall utilise a departure route that would present the least likelihood of striking an obstacle in the event of a power-unit failure; (Where obstacle avoidance by lateral margins appears to be impracticable, the aircraft commander shall make every effort to ensure obstacle clearance by an adequate vertical margin.)
- g) the operator shall record all occasions of landings and take-offs in accordance with this paragraph. The information shall include date, time, location and purpose. The record shall be retained for not less than 12 months after the event and shall be available for CAA inspection.
- h) CAA-agreed passengers may only be carried (in addition to the patient).

Chapter 9 Documents to be Carried in an Aircraft

1 Requirements of the ANO

The following documents shall be carried according to the category of flight shown.

The Commander shall ensure that the documents are correct for the particular aircraft, are in date and, where applicable, are the originals.

1.1 **On a Flight involving the Public Transport of Passengers, including a Police Observer**

- a) Certificate of Airworthiness;
- b) flight crew licences;
- c) copy of the load sheet, if required in accordance with Chapter 10 paragraph 2;
- d) copy of the certificate of maintenance review;
- e) technical log.

1.2 **On a Flight for the Purpose of Aerial Work**

- a) Certificate of Airworthiness;
- b) flight crew licences;
- c) copy of the certificate of maintenance review;
- d) technical log.

1.3 **On an International Flight**

In addition to the documents required on public transport flights or aerial work flights, as appropriate:

- a) radio installation licence;
- b) certificate of registration;
- c) procedures and visual signals for use by the commanders of intercepting and intercepted aircraft.

1.4 **On a Flight Made in Accordance with a Permission Issued by the CAA**

In addition to all the other documents normally required for the category of flight, a copy of the relevant permission.

1.5 **On a Flight Made in Accordance with any Exemption Pursuant to the Air Navigation Order 2000 Article 127**

In addition to all the other documents normally required, a copy of the relevant exemption.

2 **Police Air Operations Manual and Aircraft Flight Manual**

The PAOM Parts 1 and 2 and the AFM shall be carried on all flights which are being flown under the terms of a PAOC.

3 Aircraft Library and Proformae

3.1 The aircraft library shall comprise

- a) the documents required to be carried in accordance with the ANO;
- b) aircraft weight and balance schedule;
- c) load sheet (where applicable);
- d) credit cards and/or fuel carnets;
- e) maps and charts for the intended area of operation;
- f) route guide (Jeppesen, Aerad, Bottlang, Pooley's or RAF En-Route);
- g) passenger safety briefing cards;
- h) AFM;
- j) aircraft normal and emergency check lists.

NOTE: Items e), f), g), h) and j) shall be accessible in flight.

Chapter 10 Aircraft Loading

1 Aircraft Loading Instructions

- 1.1 The aircraft commander shall ensure that the loading of passengers, baggage, equipment and/or freight is carried out in accordance with the weight, C of G and performance limitations laid down in the AFM. Where other persons have loaded or secured items, the aircraft commander shall satisfy himself that such items have been loaded or secured correctly.
- 1.2 Before placing any load on the cabin floor or in the cargo bay the aircraft commander shall ensure that the maximum floor loading, as specified in the PAOM Part 2, would not be exceeded.
- 1.3 Items of freight shall be properly secured using lashing points or tie-down rings provided for the purpose, the loading limits of which shall be specified in the PAOM Part 2.
- 1.4 A cargo net or approved lashing strops of known strength shall be used to restrain the cargo. The restraint shall be capable of withstanding maximum g forces as follows:

Direction of Deceleration	Fixed Wing	Rotary Wing
Forward	+9	+4
Aft	+1½	+3
Lateral	+2¼	+3
Up	+4½	+3

The aircraft floor is designed to absorb downward decelerations.

- 1.5 Should the nature of the load cause the floor loading limit to be exceeded, a load spreader, such as a sturdy and suitably sized piece of wood, shall be placed beneath it.
- The load and load spreader shall be secured to obviate any possible relative motion.
 - The combined weight of the load and its spreader shall be taken into account when the requisite strength of the cargo net or lashing straps is calculated.

2 Load Sheets

2.1 Completion and Carriage

The requirements for the completion and carriage of load sheets, as set out in the ANO 2000 Article 35, are summarised below:

A load sheet shall be prepared for all flights, except where:

- the aircraft's MTWA does not exceed 1150 kg,
or
- the aircraft's MTWA does not exceed 2730 kg and the flight is intended not to exceed 60 minutes in duration and is either:

- i) a flight solely for training persons to perform duties in an aircraft; or
- ii) a flight intended to begin and end at the same aerodrome,
or
- c) the aircraft is a helicopter, the MTWA of which does not exceed 3000 kg, and the total seating capacity of which does not exceed five persons.

The person supervising the loading of the aircraft, who may be the aircraft commander or a person trained and approved to do so by the operator, shall, prior to take-off, prepare and sign a load sheet in duplicate. Where the load sheet has been prepared by another person, it shall be checked and countersigned by the aircraft commander. One copy of the load sheet shall be carried in the aircraft and one copy shall remain on the ground, to be preserved by the operator for at least six months.

Provided that in the case of an aeroplane of which the MTWA does not exceed 2730 kg, or a helicopter, if it is not reasonably practical for the copy of the load sheet to be kept on the ground, it may be carried in the aeroplane or helicopter, as appropriate, in a container approved by the CAA for that purpose.

2.2 Required Calculations

The commander of an aircraft shall, prior to take-off, ensure that the weight and C of G of the aircraft as loaded are within the limitations set out in the AFM and shall subsequently ensure that they remain so for the duration of the flight.

The aircraft weight and balance schedule gives the basic weight and moment arm for a specific aircraft. The Maintenance Manager/Airworthiness Co-ordinator shall ensure that a current copy is included in the technical log.

Should the aircraft configuration be changed from that in the weight and balance schedule, the aircraft commander shall ensure before flight that the weight and moment are recalculated according to the instructions contained in the AFM, or in the PAOM Part 2, as appropriate.

3 Notional Weights/Standard Masses

The person who prepares the load sheet shall use the actual weights of goods, luggage and freight. Whenever possible the actual weights of passengers shall be used but when this is not practical, the following notional weights/standard masses shall be used.

Passenger Seats	10 to 19		
	Male	Female	Child (2 to 12 yrs)
	86 kg	68 kg	35 kg

Passenger Seats	1 to 5			6 to 9		
	Male	Female	Child	Male	Female	Child
	98 kg	80 kg	35 kg	90 kg	72 kg	35 kg

Where immersion suits and life saving jackets are worn, 3 kg per person shall be added to the above weights.

However, where the person preparing the load sheet has reason to believe that an individual exceeds the standard weight, he shall establish and use the individual's actual weight.

4 Standard Load Plans

A standard load plan may be devised and used for a specific aircraft.

A plan may be prepared for any weight up to the aircraft's MTWA but the calculated fore/aft C of G range shall not exceed 90% of that permitted in the AFM. A copy of each standard load plan shall be included in the PAOM Part 2 together with the working method.

Chapter 11 Safety and Survival Equipment

Even though police operations are predominately conducted over land, coastal tasks and the need to overfly lakes, reservoirs and other water features may invoke the ANO requirement to carry water survival equipment.

1 Oxygen Equipment

Unless oxygen is carried in accordance with the requirements of the ANO, Schedule 4 Scales L1 and L2, as appropriate, the aircraft shall not fly above FL 100.

2 Lifejackets, Liferafts and Survival Beacons

2.1 Aeroplanes

A lifejacket for each occupant, liferaft/s capable of accommodating all persons on board and two survival beacons (provided that not more than eight liferafts are carried), shall be carried according to the aeroplane performance group, as follows:

- a) Performance Group A, C, and X – when more than 400 NM or 90 minutes flying time from the nearest aerodrome at which an emergency landing can be made;
- b) unclassified performance – (when capable of achieving a gradient of climb greater than 1:200 at an altitude of 5000 ft in ISA conditions, with one engine inoperative) – when more than 400 NM or 90 minutes flying time from the nearest aerodrome at which an emergency landing can be made;
- c) other aeroplanes – when more than 30 minutes flying time from an aerodrome at which an emergency landing can be made.

2.2 Helicopters

2.2.1 Lifejackets

Lifejackets shall be carried on all flights that at some stage involve flying beyond auto-rotational distance from land and shall be worn in the following circumstances:

- a) Performance Group A/A (Restricted) – at any time when an engine failure may precipitate a water landing;
- b) Performance Group B – when outside auto-rotational distance from land.

- NOTES:**
- 1 Each lifejacket shall be equipped with a whistle and a waterproof light, and at least one lifejacket shall be equipped with a survival ELT.
 - 2 When not required to be worn, lifejackets shall be stowed in a place accessible in flight to passengers and crew.

2.2.2 Liferafts

- a) Performance Group A/A (Restricted) – when operating at more than 10 minutes flying time from land;
- b) Performance Group B – when operating more than three minutes flying time from land.

- NOTES:**
- 1 A liferaft shall contain the following:
 - a) a means of maintaining buoyancy;
 - b) a sea anchor;
 - c) lifelines and means of attaching one liferaft to another;
 - d) paddles or other means of propulsion;
 - e) means of protecting the occupants from the elements;
 - f) a waterproof torch;
 - g) marine type pyrotechnical distress signals;
 - h) means of making sea water drinkable, unless the full quantity of fresh water is carried as specified in sub-paragraph j) ii);
 - j) for each four or proportion of four persons the liferaft is designed to carry:
 - i) 100 grammes of glucose toffee tablets;
 - ii) ½ litre of fresh water in durable containers. This quantity may be made up partly from fresh water, partly from sea water that has been made potable;
 - k) first aid equipment.
 - 2 Items f) to j) inclusive shall be contained in a pack.

2.2.3 **Survival Beacons – ELT (Survival)**

ELT (Survival) beacons shall be carried on flights which extend beyond 10 minutes flying from land.

2.2.4 **Helicopter Flotation Equipment**

a) **Float Equipped**

- i) Performance Groups A/A Restricted

When fitted with CAA-approved equipment that provides a safe water landing capability, the helicopter shall not be limited in regard to time for overwater operations.

- ii) Performance Group B

- CAA-agreed passengers only

The helicopter shall not operate over water for more than 10 minutes per flight beyond 5 minutes flying time from a point on land which is suitable for an emergency landing following an autorotative descent.

- Other passengers

The helicopter shall not operate over water for more than 20 minutes per flight.

b) **Not Float Equipped**

- i) Performance Groups A/A Restricted

- CAA-agreed passengers only

The helicopter shall not operate over water beyond 5 minutes flying time from land for more than 50 minutes per flight.

- Other passengers

The helicopter shall not operate over water for more than 15 minutes per flight.

ii) Performance Group B

The helicopter shall not operate over water at a range greater than that encompassed by 20 seconds flying time from a point on land which is suitable for an emergency landing following an autorotative descent.

NOTE: Appendix H to Section 3 provides a graphic summary of the time limits for overwater operations in helicopters.

2.2.5 Survival Suits

Survival suits shall be worn by each person on board the helicopter when a flight is intended to fly or actually flies beyond 5 minutes flying time from land when:

- a) the weather report or forecasts available to the aircraft commander indicate that the sea temperature will be less than + 10°C during the flight,
or
- b) any part of the flight is at night,
or
- c) the surface wind over the route or area to be flown is forecast or is known to be 30 kt or more.

NOTE: The requirement to wear a survival suit may be waived by the aircraft commander in exceptional operating circumstances when insufficient time is available to don the equipment, provided that any passengers are CAA-agreed passengers and no more than one of the conditions specified above will be experienced during the flight. The operator shall report any use of this waiver to the CAA (assigned Flight Operations Inspector) giving reasons in writing, within seven days of the event.

2.2.6 Survival Packs

An aircraft may be forced to land in a sparsely populated area or an area of inhospitable terrain in which the passengers and crew may be faced with a survival situation. Operators shall therefore consider the circumstances in which survival packs are required to be carried, and the contents of such packs. The type and scale of equipment to be carried shall be stipulated in the PAOM Part 2, in accordance with the principles of survival, namely, to provide protection, to aid location and to supply water and food.

3 Additional Items and Scales of Safety and Survival Equipment

Operators may specify additional items and scales of safety and survival equipment for carriage in aircraft, as required, in the PAOM Part 2.

4 Equipment Stowage Information

The operator shall list the items of safety and survival equipment carried in each type of aircraft operated and produce a diagram to illustrate their onboard locations. This information shall be included in the PAOM Part 2 in order to assist the aircraft commander when he checks that such equipment is present and correctly positioned.

Chapter 12 Altimeter Testing and Setting Procedures

The recommended altimeter testing and setting procedure is set out in the following paragraphs. An operator may choose to adopt an alternative method, provided that it covers the same ground and is set out in the PAOM Part 2.

Aircraft shall be fitted with one or two barometric altimeters, as required by Schedule 4 of the ANO 2000.

The altimeter(s) shall be tested for serviceability and accuracy prior to the first flight of the day and prior to flight in IMC.

1 Elevation Nomenclature

A barometric altimeter indicates:

- a) height when set to QFE;
- b) altitude when set to QNH;
- c) flight level when set to 1013 mbs.

2 Barometric Altimeter Testing Procedure

- a) Set each altimeter to aerodrome QFE and check that it reads within ± 50 ft of zero.
- b) Increase and decrease the pressure datum by winding each altimeter up and down five millibars, checking that the operation of the needle is smooth and the change in indication is approximately 150 ft up and down.
- c) Reset the aerodrome QFE and check that each altimeter again reads within ± 50 ft of zero. Check also that the altimeters read within 100 ft of each other.
- d) Should aerodrome QFE not be available or regional QNH not be known, set the altimeter(s) to zero. Increase the datum up and down five millibars and carry out the checks at b) and c) above.
- e) Reset the altimeter(s) to zero and check that the reading on the pressure setting datum is approximately the same as when the altimeter(s) was first set to zero.

3 Barometric Altimeter Setting Procedure

Procedures for altimeter setting are set out in Table 5 below:

Table 5 Altimeter Setting Procedures

Phase of flight	Single Altimeter	Two Altimeters	
		Pilot's Instrument	Second Instrument
Before take-off	QFE	QFE	Aerodrome QNH
		Confirm difference is aerodrome elevation	
Leaving circuit/ Cruise below Transition Altitude	Regional QNH	Regional QNH	Regional QNH
Climb through/Cruise above Transition Level	1013mb	1013mb	Regional QNH
Descent at Transition Level	Aerodrome QNH	Aerodrome QNH	Aerodrome QNH
Initial Approach	Aerodrome QNH	Aerodrome QNH	Aerodrome QNH
Final Approach	QFE/Aerodrome QNH	QFE/Aerodrome QNH	Aerodrome QNH
	Confirm QNH/QFE difference equals aerodrome elevation		
Go-around	Aerodrome QNH	Aerodrome QNH	Aerodrome QNH
	Confirm QNH/QFE difference equals aerodrome elevation		

- NOTES:**
- 1 When in the cruise below a Terminal Area, the altimeter(s) shall be set either to the Zone QNH or to the aerodrome QNH of an associated airfield.
 - 2 Aerodrome QFE may be used on the final approach as an alternative to aerodrome QNH, in which case it should be set on the pilot's instrument where two altimeters are fitted.

4 Radio Altimeter

A radio altimeter, fitted with visual and audio warnings is recommended for all flights but shall be installed in helicopters for night flying and any flight involving three or more minutes flight time over water.

Both the audio and visual warnings shall be serviceable for a flight on which the instrument is mandatory, subject to any provision in the operator's MEL, that would allow a flight to take place with an unserviceable radio altimeter in the following circumstances:

- a) In daylight:
 - i) where good nearby visual references would enable the pilot to make an accurate assessment of safe height above water. Such references may be provided by river banks, or the surroundings of small lakes and reservoirs.
- b) At night:
 - i) not below 500 ft above the highest obstacle within 5 km of the helicopter;
 - ii) minimum cloud base – 1500 ft; minimum visibility – 5 km.

The PAOM Part 2 shall specify the settings of the radio altimeter warning system that the pilot should select for all stages of a flight.

Chapter 13 Communications and Navigation Procedures

Police aircraft are generally fitted with two sets of communications, ATC and police force radios. In the event of an ATC communications failure, or loss of communications due to screening, an aircraft commander should use the police force radio to request the police controller to advise ATC of the situation by landline.

1 Emergency Communications

a) Emergency Transponder Codes

Distress	7700
Communications failure	7600
Unlawful interference	7500

b) Distress Procedure

A distress message shall be transmitted when the aircraft is threatened by serious or imminent danger and is in need of immediate assistance. It should first be transmitted on the frequency in use. If there is no response, the aircraft commander should change frequency to 121.5 MHz and repeat the call. The content of the call shall be as follows:

- i) MAYDAY, MAYDAY, MAYDAY;
- ii) name of station addressed (when appropriate);
- iii) callsign;
- iv) type of aircraft;
- v) nature of the emergency;
- vi) intention of the aircraft commander;
- vii) present or last known position, flight level/altitude and heading;
- viii) pilot qualification (unrated, IMC or full instrument rating);
- ix) other useful information, e.g. endurance, number of people on board (POB).

The message shall end with the word 'over'.

c) Urgency Procedure

An urgency call should be made when the aircraft commander has a very urgent message to transmit concerning the safety of the aircraft, or of some person on board or within sight. The message shall be prefixed with the words PAN/PAN, PAN/PAN, PAN/PAN and follow the format of the distress message.

d) Cancellation of Distress or Urgency Messages

If the emergency or urgency situation is resolved, or for any other reason ceases to exist, a cancellation message shall be transmitted to the agencies that were initially informed. If no immediate communication is possible, the cancellation shall be passed as soon as practicable by the quickest available means.

e) **Action in the Event of Perceiving Another Aircraft or Vessel in an Emergency Situation**

The commander of an aircraft shall, on becoming aware of another aircraft or vessel in an emergency situation, transmit a distress or urgency message, as appropriate. He shall provide such assistance as can reasonably be rendered to the aircraft or vessel in difficulties.

1.1 **Reporting of Hazardous Weather Conditions**

Where a pilot encounters hazardous weather conditions, particularly when they were not forecast, he should report them immediately to the ATSU in use, requesting that the information be passed to the local meteorological office. The message shall include the following:

- a) aircraft callsign;
- b) position, heading and altitude, height or flight level;
- c) nature and extent of conditions;
- d) action taken.

The following conditions are considered hazardous:

- i) severe turbulence;
- ii) severe windshear;
- iii) thunderstorms;
- iv) moderate or severe icing;
- v) standing waves;
- vi) fog.

2 Navigation Procedures

2.1 **Map Reading**

Onshore, map reading techniques should normally provide adequate navigational capability. However, when outside his local area, or when operating in poor weather, the aircraft commander shall make sensible use of the navigational equipment available.

2.2 **Use of VOR, DME and ADF**

The aircraft commander shall positively identify the coding of the beacon before using any information derived from radio navigation equipment. He shall also carry out periodic checks of the ADF operation by deflecting the direction needle through 90° by means of the test switch.

2.3 **Use of Area Navigation (R-Nav) Equipment**

Unless specifically approved, R-Nav equipment may only be used to back up information provided either by raw data navigation equipment or by approach aids.

2.4 **Dead Reckoning**

Offshore, at low level, where reception from radio navigation aids may be poor, competent dead reckoning may become essential. Accurate planning, followed by careful observance of calculated headings, airspeeds and timing is required.

3 Identification of Landing Site

A pilot shall positively identify the landing site before he lands there.

4 Keeping the Navigation Log

A navigation log shall be completed for all planned IFR flights and for all VFR flights in respect of which there is a reasonable probability of a transfer to IFR during the flight.

The format of the navigation log shall be set out in the PAOM Part 2.

The navigation log shall be kept as neatly as possible and completed accurately. The completed document shall be filed and retained for at least three months.

Chapter 14 Alternate Aerodromes and Heliports

1 For Take-Off

When the weather conditions at the aerodrome or heliport of departure are below those required for landing, a suitable diversion aerodrome or heliport at which favourable landing conditions are reported, or forecast, should be available within one engine-out flying time of the point of departure, as follows:

- a) 2 turbine engines: 60 mins
- b) 2 piston engines: 30 mins

The terrain and weather conditions en route shall permit one engine-out operation. If no suitable diversion aerodrome or heliport is available the flight shall be postponed until minimum weather conditions required for landing are available at the aerodrome or heliport of departure.

2 For Landing

For any flight on which, according to the information available, approach to the destination aerodrome or heliport will be under IFR, the aircraft commander shall nominate a suitable alternate aerodrome or heliport to which the flight may be diverted. This shall not be closer than 30 NM to the original destination, unless special factors prevail which make it likely that weather or aerodrome operating minima at the alternate will be significantly better than at the destination.

Prior to departure the aircraft commander shall ensure that according to reliable information all requirements for normal landing will be met at the relevant times at both destination and alternate aerodromes or heliports. In suitable circumstances the aerodrome or heliport of departure may be nominated as the alternate.

The aircraft commander may at his discretion decide to take-off when the weather conditions at his declared destination are below the required minima for landing providing that:

- a) there exists reasonable ground for believing that at the declared destination the required minima for landing will have become available at the ETA;
- b) two alternate aerodromes or heliports are available either en route to the destination aerodrome or heliport or in the general vicinity, at both of which the required landing minima are reliably forecast to be available during the relevant period.

Chapter 15 Night Flying

1 Aircraft Equipment Requirements

An aircraft certificated for public transport by day may not necessarily be equipped for such flights by night. An aircraft shall be equipped for night flying in accordance with the appropriate scales of equipment set out in the ANO 2000 Article 14 (2) Schedule 4 and Article 15 (2) Schedule 5. An operator shall include relevant extracts from the schedules in the PAOM Part 2.

2 Aircraft Performance Requirements

Night flying in aircraft of certain performance groups shall be restricted in accordance with the limitations set out in Chapters 6 or 7, as appropriate.

3 Pilot Qualifications

3.1 The commander of an aeroplane shall hold an instrument rating; the commander of a helicopter is not required to hold an instrument rating but the licence of a non-instrument rated commander shall not include a night restriction.

3.2 Training requirements are set out in Part D.

4 Pilot Recency

Recency requirements are set out in Part D.

5 Weather Limitations and Minimum Operating Heights

Weather limitations and minimum operating heights shall be as set out in Section 3, Chapter 3, paragraph 2 or 3, as appropriate.

6 Pre-Flight Checks

The pilot shall carry out the following pre-flight checks:

- a) ensure that he is carrying a serviceable electric torch;
- b) in the cockpit confirm the satisfactory operation of equipment as follows:
 - i) cockpit lighting;
 - ii) warning light dimmers;
 - iii) navigation lights;
 - iv) anti-collision lights (if fitted);
 - v) high intensity strobe lights (if fitted);
 - vi) landing lights;
 - vii) emergency lights.

Chapter 16 Refuelling Procedures

Turbine engined helicopters may be refuelled either engine and rotors stopped or engine running and rotors turning – sometimes known as 'hot' refuelling: preferably, the operation should be conducted with engines and rotors stopped.

Piston engined helicopters should normally be refuelled with engine and rotors stopped but, in exceptional circumstances such as in high winds, or in extreme operational urgency, 'hot' refuelling may be permitted.

Aeroplanes are not permitted to refuel with engines running.

1 Helicopter Refuelling – Engines Running/Rotors Turning

For all refuelling with engines running/rotors turning the commander shall ensure that the following procedures are followed:

- a) he remains at the controls and in visual contact with either the person conducting the refuelling or a third person who is able to relay instructions between himself and the person conducting the refuelling;
- b) in normal circumstances, the only persons permitted to be aboard the helicopter are those crew members whose presence is necessary for refuelling purposes. Patients may only remain on board during refuelling, if to move them could endanger their condition. If patients do remain on board, adequate precautions shall be made to remove them in the event of fire: persons shall be positioned to remove belts and other restraints and to facilitate evacuation.

When passengers remain on board during refuelling operations, they shall normally remain strapped in. Doors on the side on which fuel is being delivered shall where possible remain closed. Doors on the opposite side should normally remain open to facilitate rapid exit in the event of an emergency but, if they are closed to maintain cabin comfort, a person shall be available in a position from which he could quickly open them.

- c) the aircraft is parked into wind. Adequate fire fighting facilities shall be positioned adjacent to, and upwind of, the aircraft;
- d) a marshaller or a member of the crew ensures that vehicles manoeuvring near the aircraft remain at a safe distance;
- e) no person smokes on the aircraft or within 50 ft of it;
- f) all items of equipment that radiate electronic emissions are switched off or set to standby;
- g) the fuel is of the correct type and, when required, a fuel contamination check has been carried out;
- h) grounding wires have been connected to both airframe and nozzle before the filler cap is removed;
- i) when the refuelling is complete, the refuelling hose and earthing wires are removed and the filler cap is replaced.

- NOTES:**
- 1 Particular care should be taken when hot refuelling to avoid a spillage.
 - 2 In the event of a major fuel spillage the pilot shall immediately shut down the aircraft. He shall then check that the refuelling hose has been removed, the filler cap replaced and the bowser withdrawn. The fuel spillage should be hosed down as soon as possible.

2 Fuel Check for Water Contamination

- 2.1 Fuel provided at licensed or government aerodromes is subject to a daily check and requires no further testing before uplift. However, fuel supplied by small private or little used aerodromes or heliports should be treated with caution and, if in doubt, a fuel contamination check shall be carried out.
- 2.2 Checks for water contamination shall normally be carried out before the first flight of the day, in accordance with the instructions below:
 - a) Only approved water testing capsules or compounds shall be used to establish the absence or presence of water contamination in fuel. Water test capsules or paste shall be carried with a compatible syringe and clear glass jar of at least half pint capacity. To test for water, fuel shall be drained into the glass jar, allowed to settle and monitored visually for the presence of water or other signs of contamination.
 - b) A water test capsule shall be placed on the syringe. The fuel shall be drawn into the syringe from the bottom of the jar. The capsule shall then be checked for discoloration. If discoloration occurs, the fuel is unusable. The serviceability of the capsule shall be confirmed by wetting its surface with water (saliva will suffice). Discoloration at this stage indicates that the capsule has functioned correctly.
 - c) Any variation to the above procedure should be agreed with the CAA and set out in the PAOM Part 2.

Chapter 17 Aircraft Operations in Extreme Meteorological Conditions

1 Flight in Turbulence Associated with Thunderstorms

A pilot should avoid severe thunderstorms, even at the cost of a diversion or an intermediate landing but if that proves impossible, the following procedures shall be followed, where applicable to the class and type of aircraft being flown:

1.1 Approaching the Thunderstorm Area

- a) ensure that crew members' safety belts or harnesses are firmly fastened and secure any loose articles;
- b) one pilot should control the aircraft and the other (where applicable) should monitor the flight instruments continuously;
- c) select an altitude for penetration bearing in mind the importance of ensuring adequate terrain clearance;
- d) set the power to give the recommended speed for flight in turbulence, adjust the trim and note its position so that any excessive changes due to autopilot can be quickly assessed;
- e) check all flight instruments and electrical supplies;
- f) ensure that the pitot heaters are switched on;
- g) check the operation of all anti-icing and de-icing equipment;
- h) disregard any radio navigation indications subject to interference from static;
- j) turn the cockpit lighting fully on and lower crew seats and sun visors to minimise the blinding effect of lightning flashes;
- k) follow the manufacturer's recommendations on the use of the flight director and autopilot;
- l) continue monitoring the weather radar in order to select the safest track for penetration;
- m) be prepared for turbulence, rain, hail, snow, icing, lightning, static discharge and windshear;
- n) avoid flying over the top of a thunderstorm or directly underneath a cumulo-nimbus cloud, if possible.

1.2 Within the Storm Area

- a) control the aircraft regardless of all else;
- b) concentrate on maintaining a constant pitch attitude appropriate to climb, cruise or descent, by reference to the attitude indicators, carefully avoiding harsh or excessive control movements;
- c) maintain the original heading;
- d) do not correct for altitude gained or lost through up and downdraughts unless absolutely necessary;
- e) maintain the trim settings and avoid changing the power setting except when necessary to restore margins from stall warning or high speed buffet;

- f) if trim variation due to the autopilot is large, disengage the auto-pilot but check that the yaw damper remains engaged;
- g) if negative 'G' is experienced, ignore temporary warnings such as low oil pressure;
- h) on no account climb in an attempt to get over the top of the storm.

1.3 Take-Off and Landing Problems

When there are thunderstorms over or near the aerodrome, a pilot should, where possible delay take-off or, when approaching to land, hold in an unaffected area or divert to a suitable alternate.

NOTE: Further information on turbulence is to be found in the UK AIC 72/2001.

2 Flight in Wake Turbulence

Wake Vortex Weight and Separation Criteria

To avoid the wake of another aircraft (especially if it is much larger), a pilot shall observe the minimum separation criteria set out in Tables 6 and 7 below. The weight parameters employed in the UK are:

Heavy	136000 kg or greater
Medium	40000 kg – 136000 kg
Small	17000 kg – 40000 kg
Light	17000 kg or less

Table 6 Wake Turbulence Spacing Minima – Final Approach

Leading Aircraft	Following Aircraft	Minimum Separation Distance and Time Equivalent	
		NM	MIN
Heavy	Small	6	3
Heavy	Light	8	4
Medium	Small	4	2
Medium	Light	6	3
Small	Small	3	2
Small	Light	4	2
Light	Small	*	*
Light	Light	*	*

- NOTES:**
- 1 These minima apply when an aircraft is operating directly behind another aircraft and when crossing behind at the same altitude, or less than 1000 ft below.
 - 2 * Separation for wake vortex reasons alone is not necessary.

Table 7 Wake Turbulence Spacing Minima – Departures

Leading Aircraft	Following Aircraft		Minimum Spacing at the Time Aircraft are Airborne
Heavy	Small or Light	Departing from the same position	2 Minutes
Medium or Small	Light		2 Minutes
Heavy (Full length take-off)	Small or Light	Departing from an intermediate point on the same runway	3 Minutes
Medium or Small	Light		3 Minutes

- NOTES:**
- 1 On intermediate approach a minimum of 5NM shall be applied between a Heavy and a Medium, Small or Light aircraft following or crossing behind, if the following or crossing aircraft is at the same level or less than 1000 ft below.
 - 2 When the separation minima normally required for IFR purposes are greater than for wake turbulence, the IFR minima shall apply.

3 Frost, Ice and Snow on Aircraft

3.1 Pre-Flight Preparations

The aircraft commander shall satisfy himself that:

- a) the whole aircraft is free from deposits of frost, ice and snow, when necessary, by using a de-icing fluid. Only fluids approved for the purpose shall be used;
- b) both wings, or all rotor blades, have received similar de-icing treatment;
- c) engine blanks and pitot/static covers are fitted, as required, before de-icing;
- d) all orifices and guards (e.g. generator cooling inlets, fuel vents, APU inlets, pressurisation inlet and outlet valves, static plates, helicopter snow guards) and exposed operating mechanisms (e.g. nose-wheel steering, emergency door and window locks, helicopter rotor heads) are cleared of snow or slush and de-iced when so recommended;
- e) verify, by visual inspection if possible, that anti-icing and de-icing systems are operating satisfactorily;
- f) if practicable, check the operation of pitot heaters before flight.

3.2 Start-up, Taxi and Take-off Precautions

- a) If icing conditions are present or possible, a pilot shall select engine anti-icing, carburettor heat, and/or propeller de-icing, as appropriate;
- b) a pilot shall ensure, immediately before take-off, that the wings are not contaminated by ice or snow.

3.3 In-Flight Precautions

A pilot shall avoid icing conditions for which his aircraft is not approved. Crews should check regularly and thoroughly for the build-up of ice. The pilot shall follow all AFM instructions concerning the use of anti-icing and de-icing equipment.

NOTE: For further information about frost, ice and snow on aircraft see UK AIC 93/2000.

4 Operations from Runways Contaminated with Snow, Slush and/or Water

Operations from contaminated runways, by all classes of aeroplane, should be avoided whenever possible.

4.1 General Limitations for Take-off

When operations from contaminated runways are unavoidable, the pilot shall comply with the following procedures:

- a) take-off shall not be attempted in depths of dry snow greater than 60 mm or depths of water, slush or wet snow greater than 15 mm. If the snow is very dry, the depth limit may be increased to 80 mm;

NOTE: Where the dryness of the snow is in doubt, and the temperature exceeds -5°C , the pilot shall observe the 15 mm depth limit.

- b) all retardation and anti-skid devices shall be checked fully serviceable; tyres shall be in good condition;
- c) de-icing of the airframe and engine intakes, if appropriate, has been properly carried out and the aircraft is clear of contamination at the time of take-off;
- d) engine and airframe anti-ice drills are carried out;
- e) take-off and landing shall not be attempted in tail wind conditions exceeding 5 kt or when the crosswind component exceeds 10 kt;
- f) when calculating TODR, performance credit shall not be assumed for reported headwinds exceeding 10 kt, or for downhill runway slopes.

4.2 Aerodrome Requirements

- a) Aeroplanes in Performance Groups C and D:

A paved runway having an EDA not less than $1.5 \times \text{TODR}$ or 1500 ft whichever is the greater,

or

a grass runway having an EDA not less than $2.0 \times \text{TODR}$ or 2000 ft whichever is the greater.

- b) Unclassified Aeroplanes and those in Performance Groups E and F:

A paved runway having an EDA not less than $2.0 \times \text{TOD}$ to 50 ft Height Point, or 1500 ft whichever is the greater,

or

a grass runway having an EDA not less than $2.66 \times \text{TOD}$ to 50 ft Height Point, or 2000 ft whichever is the greater.

- NOTES:**
- 1 Marker boards or flags shall be sited on each side of the runway at a distance of 40% of the EDA from the start of take-off. If the necessary acceleration has not been achieved by this point, the pilot shall abandon the take-off.
 - 2 Visibility shall be adequate to see the distance markers from the start of take-off run.
 - 3 For further information on runway contamination see UK AIC 61/1999.

Chapter 18 Procedures and Signals for Intercepted Aircraft

The Chicago Convention allows for the interception of civil aircraft by State aircraft, which are expected to have due regard for the safety of navigation of civil aircraft. As such interceptions are, in all cases, potentially hazardous, ICAO has formulated special recommendations which all Contracting States have been urged to implement through appropriate regulatory and administrative action. Intercepted aircraft should act as follows:

- a) immediately follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with the specifications in Appendix B (Tables B1A and B1B);
- b) notify, if possible, the appropriate ATSU;
- c) attempt to establish radio communication with the intercepting aircraft or with the appropriate intercept control unit, by making a general call on the emergency frequency 121.5 MHz, giving the identity of the intercepted aircraft and the nature of the flight. If no contact has been established, and if practicable, repeat this call on the emergency frequency 243 MHz;
- d) if equipped with SSR transponder, select Mode A, Code 7700, unless otherwise instructed by the appropriate ATSU;
- e) if any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signals, the intercepted aircraft shall request immediate clarification while continuing to comply with the visual instructions given by the intercepting aircraft;
- f) if any instructions received by radio from any sources conflict with those given by the intercepting aircraft by radio, the intercepted aircraft shall request immediate clarification while continuing to comply with the radio instructions given by the intercepting aircraft;
- g) Radio Communication During Interception

If radio contact is established during interception but communication in a common language is not possible, attempts shall be made to convey instructions, acknowledgement of instructions and essential information by using the phrases and pronunciations set out in Appendix B (Table B2).

Chapter 19 Flight Time and Duty Hours Limitations Scheme

An operator is required to ensure that any crew member is adequately rested at the start of each flying duty period and whilst flying, is sufficiently free from fatigue to be able to function to a satisfactory level of efficiency and safety in all normal and abnormal situations. Aircraft operators are expected to appreciate the relationship between the frequency and pattern of scheduled flying duty periods and rest periods, giving due consideration to the cumulative effects of working long hours interspersed with minimum rest. The Air Navigation Order 2000 (the ANO), Part VI, requires that the operator shall have a scheme for the regulation of flight times of crews, which shall be approved by the Flight Operations Department of the CAA. The standard scheme for police air operations is based on CAP 371 – The Avoidance of Fatigue in Aircrews (4th Edition) – and is presented in the paragraphs below.

Paragraph 24 consists of a variation which an operator may follow, if he so wishes, in place of the corresponding requirements of the standard scheme. The CAA's prior approval is required for the proposed roster patterns, which shall then be set out in the PAOM Part 2.

1 Applicability

The Flight Time Limitations (FTL) scheme shall apply in respect of any duty carried out by a crew member at the behest of an operator.

2 Responsibilities and Requirements

- 2.1 The ANO requires that a crew member shall not fly, and an operator shall not require him to fly, if either has reason to believe that he is suffering, or is likely to suffer while flying, from such fatigue as may endanger the safety of the aircraft or of its occupants.
- 2.2 A pilot shall inform the operator of all flying undertaken by him, whether professionally or privately, except flying undertaken in aircraft not exceeding 1600 kg maximum weight and not flying for the purposes of public transport or aerial work.

NOTE: Flying instruction, whether remunerated or not, is likely to be aerial work and shall always be regarded as such for the purpose of these instructions.
- 2.3 A crew member shall be responsible for making optimum use of the opportunities and facilities for rest provided by the operator, and for planning to use his rest periods properly so as to minimise the risk of fatigue.
- 2.4 A person shall not be entitled to act as a member of a flight crew of an aircraft registered in the United Kingdom if he knows or suspects that his physical or mental condition renders him temporarily unfit so to act.
- 2.5 A crew member shall complete his 'record of flying and duty hours' form at the end of each duty. The record shall be maintained by the operator.

3 Definitions

Unless otherwise defined below, all words, phrases, definitions and abbreviations, have identical meanings to those described in the ANO Article 129.

a) **Crew/Flight Crew/Cabin Crew**

As defined in the ANO.

b) **Contactable**

A short period of time during the day, other than on a day off, during which the company requires a crew member to be contactable for the purpose of giving notification of a duty period which will commence not less than ten hours ahead. The operator shall designate, in the PAOM Part 2, the times (Local) at which the contactable period starts and finishes. The maximum duration of the period shall be 2½ hours but it may be split into two separate periods with the agreement of the CAA.

c) **Days Off**

Periods available for leisure and relaxation free from all duties.

A single day off shall include two local nights. Consecutive days off shall include a further local night for each additional consecutive day off. A rest period may be included as part of a day off.

d) **Duty**

Any continuous period during which a crew member is required to carry out any task associated with the business of an operator.

e) **Early Start Duty**

A duty is an Early Start Duty if it commences in the period 0500 to 0659 hours local time.

f) **Flying Duty Period (FDP)**

Any time during which a person operates in an aircraft as a member of its crew. It starts when the crew member is required by an operator to report for a flight, and finishes at on-chocks or engines off, or rotors stopped after the final sector.

g) **Home Base**

The single place nominated by the operator to the crew member from where the crew member normally starts and ends a duty period, or series of duty periods, and at which place, under normal conditions, the operator is not responsible for the accommodation of the crew member.

h) **Floater**

A pilot generally used for relief duties, and named as such in the employer's PAOM Part 2, who operates from one or a number of bases not nominated as his/her home base.

i) **Late Finish Duty**

A duty is a Late Finish when the duty finishes in the period 0100 to 0159 hours local time.

j) **Local Night**

A period of eight hours falling between 2200 and 0800 (Local).

k) Night Duty

A duty is a Night Duty if any part of that duty falls within the period 0200 to 0459 hours local time.

l) Positioning

The practice of transferring crews from place to place as passengers in surface or air transport at the behest of an operator.

m) Regular

Regular, when applied to duties that are Late Finishes, Night or Early Starts, means a run of 4 or 5 consecutive duties, not broken by a period of 34 hours free from such duties, contained in a single 7 consecutive day period.

n) Reporting Time

The time at which a crew member is required by an operator to report for any duty.

o) Rest Period

A period of time before starting a flying duty period which is designed to give crew members adequate opportunity to rest before a flight.

p) Rostered/Planned Duty

A duty period, or series of duty periods, with stipulated start and finish times, notified by the operator to crews in advance.

q) Rostering Period

A number of consecutive weeks, usually four but not less than two, defined by the operator.

r) Scheduled Duty

The allocation of a specific flight or flights or other duties prenotified to a crew member within the rostered/planned series of duty periods.

s) Sector

The time between an aircraft first moving under its own power until it next comes to rest after landing, on the designated parking position.

t) Split Duty

A flying duty period which consists of two or more sectors, separated by less than a minimum rest period.

u) Standby Duty

A period during which the operator places restraints on a crew member who would otherwise be off duty. However, it shall not include any time during which the crew member is contactable for the purpose of giving notification of a duty which is due to start 10 hours or more ahead.

v) Suitable Accommodation

A well furnished bedroom which is subject to minimum noise, is well ventilated, and has the facility to control the levels of light and temperature.

w) Travelling

All time spent by a crew member in transit between the place of rest, and the place of reporting for duty.

x) Week

A period of 7 consecutive days starting at any set time and on any set day as specified and stated by the operator.

4 Roster Planning

- 4.1 The operator shall ensure that rostering staff are aware of the effects of disturbing Circadian Rhythms and sleep deprivation. The operator shall provide for crew members away from base, both the opportunity and facilities for adequate pre-flight rest, in suitable accommodation.
- 4.2 In order to promote stability, where rosters based on the standard scheme are produced, the CAA would wish operators to continue with the present system of cyclical rosters.
- 4.3 Rosters are to be issued not less than 14 days in advance of the roster period.
- 4.4 The minimum period of notice for a change of duty, once a roster has been issued, shall be 14 days for a day off and 7 days for a change of duty. Where, due to unforeseen circumstances these minimum periods of notice cannot be satisfied, days off and duties may be changed with the acceptance of the crew member concerned provided that the other requirements of the scheme are satisfied.

5 Flight Crews Employed on a Part-Time Basis

- 5.1 An operator shall ensure that any flight crew member engaged on an irregular basis shall satisfy the provisions of this FTL scheme. Furthermore, an operator shall satisfy himself that a crew member whom he permits to undertake other employment still has the opportunity to enjoy adequate pre-flight rest.
- 5.2 A crew member not regularly employed by the operator shall provide him with details of his previous 12 months flying hours, 28 day duty hours and days off in the last 84 day period, before undertaking a flying duty on behalf of the operator. The operator shall ensure that the pattern and totals of those previous duty/flying hours and days off are wholly compatible with this FTL scheme.

6 Calculation of Maximum FDP

6.1 General Considerations

A minimum of 30 minutes pre-flight and 15 minutes post-flight should be allowed for during an FDP. The time spent between reporting for a flight and the completion of post-flight duties determines the length of the subsequent rest period.

Once the reporting time has been established, an operator shall in no circumstances postpone it by employing a special despatch crew to undertake some pre-flight duties, nor shall it be altered in order to start at a local time that would lead to a longer FDP.

6.2 Aeroplanes

The following tables indicate the maximum length of FDP related to start times and the number of sectors to be flown.

Table 8 Single Flight Crew – Maximum FDP

Local Time of Start	Sectors				
	Up to 5 IFR, or up to 8 VFR	5 IFR	6 IFR	7 IFR	8 or more
0600–0759	10	9¼	8	8	8
0800–1259	11	10¼	8¼	8	8
1300–1759	10	9¾	8	8	8
1800–2159	9	8¼	8	8	8
2200–0559	9	8	8	8	8

Table 9 Two Flight Crew – Maximum FDP

Local Time of Start	Sectors							
	1	2	3	4	5	6	7	8 or more
0600–0759	13	12¼	11½	10¾	10	9½	9	9
0800–1259	14	13¼	12½	11¾	11	10½	10	9½
1300–1759	13	12¼	11½	10¾	10	9½	9	9
1800–2159	12	11¼	10½	9¾	9	9	9	9
2200–0559	11	11¼	9½	9	9	9	9	9

6.3 Helicopters

The following table indicates the maximum length of FDP and flying hours, related to start times:

Table 10 Maximum FDP

Local Time of Start	SINGLE PILOT		TWO PILOT	
	Maximum FDP	Maximum Flying	Maximum FDP	Maximum Flying
0600–0659	9	6	10	7
0700–0759	10	7	11	8
0800–1359	10	7	12	8
1400–2159	9	6	10	7
2200–0559	8	5	9	6

7 Additional Limits on Flying

7.1 Repetitive Short Sectors and Demanding Roles

Crews flying repetitive short sectors at an average rate of 10 or more landings per hour, or when carrying out demanding roles such as winching and external load carrying, shall have a break of at least 30 minutes away from the helicopter within any continuous period of 3 hours.

7.2 Early Starts/Late Finishes

Sleep deprivation, leading to the onset of fatigue, can arise if a crew member is required to report early for duty, or finishes a duty late, on a number of consecutive days. Therefore, not more than three consecutive duties that occur in any part of the period 0100 to 0659 (Local) shall be undertaken, nor shall there be more than four such duties in any seven consecutive days.

Should a crew member be scheduled for duty that occurs during any part of the period 0200 and 0459 (Local), for a minimum of two and a maximum of three consecutive nights, the operator shall ensure that he shall be free from all duties by 2100 (Local) on the day before the block of consecutive night duties start.

7.3 Preliminary Duties

When a crew member is required to report for duty in advance of the stipulated report time for a flight, to carry out a task at the behest of an operator, the time spent on that preliminary task shall be part of the subsequent FDP.

8 Mixed Duties

8.1 Fixed and Rotary Wing Flying

When a flight crew member carries out both fixed wing and rotary wing flying duties, the more restrictive flight and duty time limitations shall apply. The operator shall inform the CAA of his intentions, prior to the commencement of such mixed duties.

8.2 Simulator and Aircraft Flying

When a flight crew member flies in a simulator, either on a check or training flight, or as a Training Captain or Instructor, and then within the same duty period flies as a flight crew member on AOC or PAOC operations, all the time spent in the simulator or aircraft shall count in full towards the subsequent FDP and daily flying hour maximum. The FDP shall be calculated from the reporting time of the simulator or aircraft training detail, whichever is the earlier.

8.3 Single Pilot/Two Pilot Operations

In one duty period a pilot may fly as single flight crew up to the point where the total flying and duty hours reach the single flight crew FDP limit. During this time the pilot may fly either in command, or as a co-pilot on a two flight crew aircraft. The pilot may continue beyond the single flight crew FDP limit in a two flight crew operation until he reaches the two flight crew FDP and flying hour maximum, but only as a co-pilot.

8.4 PAOC/AOC Operations

Where an operator holds both a PAOC and an AOC, and his approved FTL schemes differ for each class of operation, he shall ensure that the duty period of any crew member who may be employed on PAOC activities complies with the PAOC FTL scheme in respect of duty hours, flying hours and days off for the previous 28 days and in respect of flying hours for the previous 12 months.

Pilots operating on both PAOC and AOC operations are to be regarded as floaters for the purpose of the PAOC FTL scheme.

9 Travelling Time

9.1 Travelling time, other than that time spent on positioning, does not count as duty.

9.2 Lengthy travelling time, between home and the home base, may induce fatigue. If the journey time from home to the home base usually exceeds 45 minutes, crew members are advised to make arrangements for temporary accommodation nearer to base.

9.3 When a crew member is required to travel from home to an aerodrome other than the home base, any travelling time over 45 minutes shall be regarded as positioning. Notional times for this positioning shall be agreed between the operator and the CAA.

10 Delayed Reporting Time

- 10.1 When a crew member is informed of a delay to the reporting time due to a changed schedule, before leaving the place of rest, the FDP shall be calculated as follows. When the delay is less than 4 hours, the maximum FDP allowed will be based on the original report time and the FDP will start at the actual report time. When the delay is 4 hours or more, the maximum FDP allowed will be based on the more limiting time band of the planned report time and the actual report time and the FDP will start 4 hours after the original report time.
- 10.2 When the company informs a crew member before leaving the place of rest of a delay in the reporting time of 10 hours or more ahead, and that crew member is not further disturbed by the company until a mutually agreed time, then that period is classed as rest. If, upon the resumption of duty, further delays occur then the appropriate criteria in this paragraph and paragraph 10.1 above will be applied to the re-arranged reporting time.

11 Positioning

- 11.1 Time spent on positioning, at the behest of an operator, before carrying out an FDP, will count as duty. The FDP commences not later than the time at which the crew member reports for the positioning journey, or positions in accordance with subparagraph 9.3.
- 11.2 Positioning after completion of an FDP is counted as duty, and the subsequent rest period must account for the FDP plus the positioning journey.
- 11.3 If, after a positioning journey, the crew member spends less than a minimum rest period at suitable accommodation provided by the operator, and then carries out an FDP, the positioning will be counted as a sector if the allowable FDP is being extended by use of a split duty.

12 Standby Duty

- 12.1 The time of start, end, nature of the standby duty and minimum notification time will be defined and notified to crew members. The time a standby duty starts determines the allowable FDP, except that when the actual FDP starts in a more limiting time band, then that FDP limit will apply. However, when standby is undertaken at home, or in suitable accommodation provided by the operator, during the period 2200 to 0800 hours local time and a crew member is given 2 hours or less notice of a report time, the allowable FDP starts at the report time for the designated reporting place.
- 12.2 When a crew member is on standby duty, on immediate readiness at the airport or relevant operating site, then the allowable FDP is calculated using the start time of the standby duty.
- 12.3 If a crew member is called out from standby, the standby duty will cease at the notified start time of the FDP, that is to say when the crew member reports for duty at the designated reporting point.
- 12.4 The following limits apply:

Duty	Maximum Duration
Standby Duty (all cases)	12 hours
Standby followed by an FDP	As in Case A, or Case B below.

Case A

If a crew member is called out from standby to conduct an FDP before completing 6 hours standby duty then the total duty period allowed is the sum of the time spent on standby and the FDP from paragraph 6.

Case B

If a crew member is called out from standby to conduct an FDP after completing 6 hours or more standby duty, then the total duty period allowed is the sum of all the time spent on standby and the FDP, reduced by the amount of standby worked in excess of 6 hours.

NOTE: Hours spent on standby contribute towards cumulative duty hours as set in paragraph 20.

13 Extension of FDP by Split Duty

13.1 When an FDP consists of two or more sectors separated by less than a minimum rest period (in this respect positioning may be counted as a sector), FDP may be extended as indicated below:

a) Aeroplanes

Consecutive Hours Rest	Maximum Extension of the FDP
------------------------	------------------------------

< 3	Nil
-----	-----

3–10	A period equal to half the consecutive hours rest taken.
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b) Helicopters

Consecutive Hours Rest	Maximum Extension of the FDP
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< 2	Nil
-----	-----

2–3	One hour
-----	----------

3–10	A period equal to half the consecutive hours rest taken.
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13.2 Only one period of 2–3 consecutive hours of rest shall be accountable in any single FDP.

13.3 The rest period between sectors shall be specified by the operator but it shall not include the time allowed for immediate post-flight and pre-flight duties, a minimum total of 30 minutes. When the rest period is 6 hours or less, it shall suffice for the operator to make available for the crew member a quiet and comfortable place, not open to the public. Where the rest period is longer than 6 hours, the operator shall provide suitable accommodation. Rest shall not be taken in the aircraft.

14 Rest Periods

14.1 Crew members shall be notified of an FDP in good time so that sufficient and uninterrupted pre-flight rest can be taken. For a crew that is away from home base, the operator shall provide adequate opportunities and facilities for pre-flight rest in suitable accommodation. When flights are carried out at such short notice that it is

impracticable for the operator to arrange suitable accommodation, this responsibility shall devolve upon the aircraft commander.

- 14.2 The minimum rest period prior to an FDP shall be at least as long as the preceding DP, or 12 hours, whichever is the greater.
- 14.3 If travelling time between the aerodrome and the suitable accommodation is more than 45 minutes each way, the rest period shall be increased by the amount that the total time spent travelling exceeds 1½ hours. The room allocated to the crew member shall be available for occupation for a minimum of 12 hours.
- 14.4 Where the preceding duty period, which includes any time spent on positioning, exceeds 18 hours, the ensuing rest period shall include a local night.
- 14.5 Where a crew member has been called out from a standby duty, the minimum rest period shall comprise the length of standby duty, subsequent FDP and any time spent on positioning.
- 14.6 A crew member who informs the operator that he is finding it difficult to achieve adequate pre-flight rest shall be given the opportunity to consult an aviation medicine specialist.

15 Aircraft Commander's Discretion to Extend an FDP

- 15.1 An aircraft commander may, at his discretion, and after taking note of the circumstances of other members of the crew, if carried, extend an FDP beyond that permitted in paragraph 6, (Tables 8, 9, or 10), as appropriate – or the rostered FDP if working to paragraph 24) to complete a task, provided he is satisfied that the flight can be made safely.
- 15.2 A commander may exercise his discretion as follows:
- Up to one hour after the duty period was scheduled to finish (or allowable FDP has been reached) – after which it would constitute an emergency call-out.
 - To a cumulative total of two hours in any seven consecutive days – after which it would constitute an emergency call-out.
- NOTE:** If the one hour limit and the two hour limit are exceeded within a consecutive seven day period it constitutes two emergency call-outs (except where a **single** call-out exceeded the two hour limit).
- 15.3 A commander may exercise discretion to extend an FDP following a rest period reduced by commander's discretion, only exceptionally, and then only to the extent necessary to allow for unforeseen circumstances that become apparent during the last task.
- 15.4 Discretion that results in the 7 day duty limit being exceeded may be used but in no circumstances may the 28 day duty limit be exceeded by discretion except in the case of the emergency call-out procedures contained in paragraph 22.
- 15.5 Whenever a commander extends an FDP, he shall notify the fact to the operator on a Discretion Report Form.

16 Aircraft Commander's Discretion to Reduce a Rest Period

- 16.1 An aircraft commander may, at his discretion, and after taking note of the circumstances of other members of the crew, if carried, reduce a rest period, but only insofar as the room allocated to the crew member shall be available for occupation for

a minimum of 10 hours. The exercise of such discretion shall be exceptional and shall not be used to reduce successive rest periods. If the preceding FDP was extended, the rest period may be reduced, provided that the subsequent FDP is reduced by the same amount. In no circumstances may a commander exercise discretion to reduce a rest period below 10 hours in suitable accommodation.

- 16.2 Whenever a commander reduces a rest period, he shall notify the fact to the operator on a Discretion Report Form. If the reduction is more than one hour, the operator shall submit the commander's written report, together with comments by the operator, to the CAA, within 14 days of the event.

17 Days Off

17.1 General

Whenever possible, and if required by the crew member, days off shall be taken in the home environment. A planned rest period may be included as part of a day off.

17.2 All Crews

A single day off shall include 2 local nights and shall be of at least 36 hours duration.

A crew member shall:

- a) not work more than 7 consecutive days; and
- b) have 2 consecutive days off following a period of 7 consecutive days duty; and
- c) have 2 consecutive days off in any consecutive 14 days, and have at least 3 days off in any consecutive 14 days; and
- d) have at least 8 days off in any consecutive 4 weeks; and
- e) have an average of at least 9 days off in each consecutive 4 week period, averaged over 3 such periods.

NOTE: A single day off is only adequate when it follows a maximum of 6 consecutive days duty.

18 Absolute Limits on Flying Hours

A person shall not act as a member of the flight crew of an aircraft if, at the beginning of the flight the aggregate of all previous flight times exceeds the following:

- | | | |
|----|--------------------------------------|----------|
| a) | any 3 consecutive days (helicopters) | 18 hours |
| b) | any 3 consecutive days (aeroplane) | 18 hours |

(which may be increased to 21 hours at the commander's discretion provided that no more than 9 hours are flown on any single day of the period in question)

- | | | |
|----|--|-----------|
| c) | Any 7 consecutive days | 30 hours |
| d) | Any 28 consecutive days | 75 hours |
| e) | Any 3 consecutive 28 day periods | 180 hours |
| f) | In any period of 12 consecutive months | 600 hours |

19 Cumulative Duty Hours

The maximum duty hours for crew members shall not exceed:

- a) 60 hours in any 7 consecutive days.
- b) 200 hours in any 28 consecutive days.

NOTE: The cumulative totals may be affected by the emergency call-out procedures set out at paragraph 22 but the 28 day limit cannot be exceeded with the use of discretion.

20 Calculation of Cumulative Duty Hours – Flight Crew

Duty hours shall be added together to make cumulative totals, as follows:

- a) To count in full:
 - i) duty periods and FDPs, with subsequent post-flight duties;
 - ii) all standby duty, except that specified in b) i) and ii) below;
 - iii) time spent on positioning.
- b) To count as half the time on duty:
 - i) Standby duty, when the notification time given to the crew member by the operator, is treble or more than the specified minimum time for reporting (see paragraphs 6.1 and 12.1).
 - ii) Standby duty, when undertaken at home or in suitable accommodation provided by the operator, takes place during the period 2200 to 0800 (Local), the crew member can take undisturbed rest and is not called out for duty.

21 Duty Hours Records to be Maintained

21.1 Records for the duty and rest periods of all flying staff shall include:

a) For each crew member:

The beginning, end, and duration of each duty and FDP, operating base and functions performed thereon: duration of each rest period prior to a flying duty or standby duty period: dates of days off: weekly totals of duty.

b) For each flight crew member:

Daily and weekly flying hours.

21.2 Records shall be preserved for at least 12 calendar months from the date of the last relevant entry.

21.3 A copy of each aircraft commander's discretion report of extended FDPs, reduced rest periods and emergency call-outs, shall be retained for a period of at least 12 months after the event.

22 Emergency Call-Out

22.1 The following conditions apply to crew members who are requested by an operator to respond to an emergency situation by remaining on duty beyond the allowable FDP (including discretion), or during either a day off or rest period. A pilot shall not be obliged either to make himself available or keep fit for such a duty. However, a crew

member who accepts such an emergency call-out shall be responsible for ensuring his fitness for the duty to be undertaken.

- 22.2 The emergency call-out duty shall not exceed a total of 5 hours. Remaining on duty during that 5 hours shall be at the sole discretion of the pilot concerned.

NOTE: Except that if a crew member is called out having achieved the minimum rest, which had included a local night, a full duty period may be worked.

- 22.3 Should an emergency call-out occur following completion of an FDP, but prior to a crew member achieving the minimum rest period, the subsequent minimum rest period on completion of the emergency call-out FDP shall be as follows:

Initial FDP + rest achieved + emergency call-out duty.

Neither the crew member nor the operator shall have the right to reduce this rest period.

- 22.4 The operator shall forward a report to the CAA of all such emergency call-outs.
- 22.5 No pilot may undertake more than 3 emergency call-out duties in any period of 28 consecutive days, nor more than 2 emergency call-out duties per 28 day period averaged over 3 such periods.
- 22.6 Taking emergency call-out duty time into account, maximum duty hours shall not exceed 210 hours in any 28 consecutive days, but no more than 200 hours per 28 day period averaged over 3 consecutive 28 day periods.

Maximum duty hours in any 7 day period shall not exceed 60 hours, which may be increased to 65 hours in the event of unforeseen circumstances, such as when an emergency situation develops near the end of the normal 7 day duty period.

23 Floaters

- 23.1 All pilots are allocated to a single home base. Where a pilot is nominated in the PAOM Part 2 as a floater, the home base may be either:

- a) one of the company's operating bases; or
- b) the home address of the floater

and this shall be entered in the PAOM Part 2.

- 23.2 When a floater is positioned to an operating base for relief duties, the first 45 minutes of the journey can be regarded as travelling and the remainder as positioning under the definitions contained in paragraph 3.

- 23.3 Where positioning is part of a regular pattern and the company has opted for alternative a) above, notional times shall be submitted for acceptance by the CAA.

- 23.4 Where a floater works on a base that has a Flight Time Limitations Scheme approved under paragraph 24, he shall work within the constraints of the standard scheme (contained in paragraphs 1 – 22) except that:

- a) If the roster of the relieved base does not have FDPs which conform to the tables contained in paragraph 6, the floater may work to the length of the rostered FDP but **not** exceed the cumulative totals contained in paragraph 19.
- b) If a floater replaces a pilot on an approved cycle of night duties that exceeds 3 but is not more than 5 then immediately after the night duty cycle he shall have a recovery period of 2 rest days – which shall include 3 local nights – plus a day off for each night worked in excess of 3.

- c) If a floater works on a base that has a 12 hour night shift pattern cycle, each 12 hour night duty shall attract a day off. After the 12 hours shift duty cycle, no duties other than positioning may be carried out until such days off earned have been taken.
 - d) The maximum duty hours that a floater may work is limited to 100 duty hours in any 14 consecutive days, except that when a floater works on a base for at least 20 consecutive days then that base's approved Flight Time Limitations Scheme shall apply.
- 23.5 If a floater takes advantage of the easement of 23.4 above, the days off entitlement of paragraphs 17 d) and 17 e) shall be increased to:
- a) at least 9 days off in any consecutive 4 weeks; and
 - b) an average of at least 10 days off in each consecutive 4 weeks averaged over 3 such periods.

24 Standard Variation – Approved Rosters

As a standard variation to the police air operations FTL scheme, an operator may roster a repetitive pattern of duties, for both aeroplane and helicopter crews. Such rosters must be submitted for approval by the CAA and not changed without the CAA's prior approval. Short term changes to cater for pre-planned activities must receive the prior agreement of the CAA but such changes shall be kept to a minimum.

24.1 Applicability of Standard Scheme

The following paragraphs of the standard scheme are applicable to this variation:

Paragraphs 1, 2, 3, 6, 7.1, 7.3, 8.4, 9, 11, 12, 14, 15, 16, 18, 20, 21.

The provisions of paragraph 22 shall apply except that on an approved roster pattern that exceeds 60 duty hours in 7 consecutive days, the cumulative duty limits applicable to that period shall not be exceeded unless an emergency call-out occurs on the final day.

24.2 Allowable DP

An allowable DP of 10 hours per day (and after specific approval 12 hours), regardless of the starting time, is acceptable.

24.3 Start and Finish Times

The rostered start and finish time shall be specified. For the purposes of operational flexibility these times may occasionally be adjusted \pm two hours, at the discretion of the crew member concerned after giving at least 12 hours notice.

24.4 Day Off

Where, as part of an approved roster pattern, a scheduled duty is due to end later than 00:01, but no later than 03:00, on what is intended to be a day off, that day off may still be counted as such, provided that duty ceases not later than at the approved roster finish time. If duty is extended beyond that time, it shall be regarded as an emergency call-out, thus nullifying the day off.

24.5 Sector Limitations – Aeroplanes Only

a) VMC

Flights conducted entirely in VMC shall not be subject to a maximum number of sectors within the FDP.

b) IMC

Within the 10 hours maximum FDP, a crew member may normally fly a maximum of 4 IMC sectors. Thereafter the maximum FDP shall be reduced by 45 minutes for each further IMC sector flown.

c) Crew Member's Discretion

At the discretion of the crew member concerned, he may fly additional VMC or IMC sectors, in excess of the IMC sector limit, without reducing FDP below 10 hours. In such circumstances, the total flight time incurred in carrying out the added sectors shall be regarded as an emergency call out, to be conducted in accordance with the requirements at paragraph 22 and reported as such to the CAA.

Appendix A Aircraft Commander's Voyage Report

CAPTAIN'S NAME DATE

AIRCRAFT TYPE A/C REGN

DETAILS OF TASK

PILOT'S NARRATIVE

CAPTAIN'S SIGNATURE

CHIEF PILOT'S COMMENTS

CHIEF PILOT'S SIGNATURE

Appendix B Signals for Intercepted Aircraft

Table B1A Signals Initiated by Intercepting Aircraft and Responses by Intercepted Aircraft

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

Table B1B Signals Initiated by Intercepting Aircraft and Responses by Intercepted Aircraft

Series	Intercepted Aircraft Signal	Meaning	Intercepting Aircraft Responds	Meaning
1	DAY or NIGHT Raising landing gear and flashing landing lights while passing over runway in use or helicopter landing area at a height exceeding 300m/1000 ft but not exceeding 600m/2000 ft (in the case of a helicopter, at a height exceeding 50m/170 ft, but not exceeding 100m/330 ft) above the aerodrome level, and continuing to circle the runway in use or the helicopter landing area. If unable to flash landing lights, flash any other lights available.	Aerodrome you have designated is inadequate.	DAY or NIGHT If it is desired that intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear and uses the Series 1 signals prescribed for intercepting aircraft. If it is decided to release the intercepted aircraft, the intercepting aircraft uses the Series 2 signals prescribed for intercepting aircraft.	Understood, follow me. Understood, you may proceed.
2	DAY or NIGHT Regular switching on and off of all available lights, but in such a manner as to be distinct from flashing lights.	Cannot comply.	DAY or NIGHT Use Series 2 signals prescribed for intercepting aircraft in Table B1A.	Understood.
3	DAY or NIGHT Irregular flashing of all available lights.	In distress.	DAY or NIGHT Use Series 2 signals prescribed for intercepting aircraft in Table B1A.	Understood.

Table B2 Phrases for Use During Interceptions

a) By Intercepting Aircraft

Phrase	Pronunciation	Meaning
CALL SIGN	<u>KOL</u> SA-IN	What is your call sign?
FOLLOW	<u>FOL</u> -LO	Follow me.
DESCEND	DEE- <u>SEND</u>	Descend for landing.
YOU LAND	<u>YOU LAAND</u>	Land at this aerodrome.
PROCEED	PRO- <u>SEED</u>	You may proceed.

b) By Intercepted Aircraft

Phrase	Pronunciation	Meaning
CALL SIGN	<u>KOL</u> SA-IN	My call sign is (callsign).
WILCO	<u>WILL</u> -KO	Understood. Will comply.
CAN NOT	<u>KANN</u> NOTT	Unable to comply.
REPEAT	REE- <u>PEET</u>	Repeat your instruction.
AM LOST	<u>AM LOSST</u>	Position unknown.
MAYDAY	<u>MAYDAY</u>	I am in distress.
HIJACK	<u>HI-JACK</u>	I have been hijacked.
LAND (place name)	<u>LAAND</u> (place name)	I request to land at (place name).
DESCEND	DEE- <u>SEND</u>	I require descent.

- NOTES:**
- 1 In the second column, syllables to be emphasised are underlined. Transmit each phrase twice.
 - 2 The call sign required to be given is that used on RT communications with ATS units and corresponding to the aircraft identification in the flight plan.
 - 3 Circumstances may not always permit, nor make desirable, the use of the phrase HIJACK.

Appendix C Record of Flying Duty and Flying Hours

PILOT'S NAME

RECORD OF FLYING DUTY AND FLYING HOURS

MONTH

20

Day No	Date	DUTY HOURS						FLYING HOURS				Duty carried out/Remarks e.g. Split Duty/Discretion Report			
		Duty Period			Daily Total 28 Days Previous	Current 28 Day Total	Daily Total 7 Days Previous	Current 7 Day Total	Flying Duty Period				Daily Total 28 Days Previous	Current 28 Day Total	Daily Total
		Start	Finish	Total					Start	Finish	Total				
B/F															
1															
2															
3															
4															
5															
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24															
25															
26															
27															
28															
Leave															
Sick															
Days Off															

Appendix D Commander's Discretion Report

Part A Operator Aircraft Type
 Flight Number Commander
 Date

NOTE: If discretion exercised for part crew or individuals state name and operating capacity below.

Commander*/First Officer*/Cabin Attendant* (delete as necessary)

Part A – Extension of Flying Duty Period/Flying Hours

Voyage Details						
Schedule (Planned)				Actual		
	Place	UTC	Local		UTC	Local
Duty to Start				Duty Started		
Depart				Departed		
Arrive				Arrived		
Depart				Departed		
Arrive				Arrived		
Depart				Departed		
Arrive				Arrived		
Depart				Departed		
Arrive				Arrived		
Depart				Departed		
Arrive				Arrived		
Scheduled FDP				Actual FDP Hrs.....Mins.....		
Split Duty: Actual Time Off Hrs.....Mins.....				Credit FDP Hrs.....Mins.....		
Max Allowable FDP Hrs.....Mins.....						

COMMANDER'S DISCRETION REPORT – EXTENSION OF FLYING DUTY PERIOD/
FLYING HOURS

Part C Commander's Report

Signed

Date

Operator's Remarks/Action Taken

Signed

Date

Forwarded to CAA

Filed

Section 3 Flight Operations - VFR

Chapter 1 Visual Flight Rules

Tables relating the weather minima to the classification of airspace, as applicable to pilots who lack an instrument rating, for VFR flight below FL 245 in UK may be found at Chapter 3 paragraphs 3.3 to 3.6.

The Visual Flight Rules (VFR) are as follows:

1 Outside Controlled Airspace (within Class F or G Airspace)

- 1.1 An aircraft flying outside controlled airspace at or above FL 100 shall remain at least 1500 m horizontally and 1000 ft vertically away from cloud and in a flight visibility of at least 8 km.
- 1.2 An aircraft flying outside controlled airspace below FL 100 shall remain at least 1500 m horizontally and 1000 ft vertically away from cloud and in a flight visibility of at least 5 km.

Provided that this sub-paragraph shall be deemed to be complied with if:

- a) the aircraft is flying at or below 3000 ft AMSL and remains clear of cloud and in sight of the surface and in a flight visibility of at least 5 km;
- b) the aircraft, other than a helicopter, is flying at or below 3000 ft AMSL at a speed which according to its airspeed indicator is 140 kt or less and remains clear of cloud and in sight of the surface and in a flight visibility of at least 1500 m; or
- c) the helicopter, is flying at or below 3000 ft AMSL at a speed, which having regard to the visibility is reasonable, and remains clear of cloud and in sight of the surface.

2 Within Controlled Airspace

2.1 Class B Airspace

- a) an aircraft flying at or above FL 100 shall remain clear of cloud and in a flight visibility of at least 8 km.
- b) an aircraft flying below FL 100 shall remain clear of cloud and in a flight visibility of at least 5 km.

2.2 Class C, D or E Airspace

- a) an aircraft flying at or above FL 100 shall remain at least 1500 m horizontally and 1000 ft vertically away from cloud and in a flight visibility of at least 8 km;
- b) an aircraft flying below FL 100 shall remain at least 1500 m horizontally and 1000 ft vertically away from cloud and in a flight visibility of at least 5 km;
- c) at or below 3000 ft (by virtue of exemption from Rule 25 of the Rules of the Air Regulations):
 - i) aircraft (other than helicopters), at 140 kt IAS or less, shall remain clear of cloud and in sight of the surface in a flight visibility of at least 5 km;
 - ii) helicopters shall remain clear of cloud and in sight of the surface.

Chapter 2 Flights Under Special Visual Flight Rules

1 Special VFR

Clearance for Special VFR flight in the UK is an authorisation by ATC for a pilot to fly within a Control Zone although he is unable to comply with IFR. It is only granted when traffic conditions permit it to take place without hindrance to the normal IFR flights. ATC will not issue such a clearance to any fixed wing aircraft intending to depart from an aerodrome within a Control Zone, when the official meteorological report indicates that the visibility is 1800 m or less and/or the cloud ceiling is less than 600 ft.

2 Pilot's Responsibilities

The pilot on a Special VFR flight shall:

- a) comply with ATC instructions;
- b) ensure that his flight conditions enable him to remain clear of cloud, determine his flight path with reference to the surface and keep clear of obstructions. The weather minima for any such flight conducted in accordance with a PAOC shall be as set out in Chapter 3, paragraphs 2 or 3, as appropriate;
- c) ensure that he flies within the limitations of his licence;
- d) comply with the relevant low flying restrictions of Rule 5 of the Rules of the Air Regulations (other than the 1500 ft rule);
- e) avoid aerodrome traffic zones unless prior permission for penetration has been obtained from the relevant air traffic control unit.

Chapter 3 Low Flying Operating and Weather Minima

Because of the nature of police requirements, aircraft operating in accordance with the terms of a PAOC may be permitted to fly at heights below those set out in Rule 5 of the Rules of the Air Regulations and to meteorological minima below those that would be acceptable for public transport. The cloud base and visibility minima, set out in the following paragraphs, are appropriate to temperate weather conditions: where severe turbulence or heavy precipitation is forecast or experienced, the aircraft commander should consider raising the limits as a matter of prudence. However, the limits devised for operations by PAOC holders remain firmly founded in Rule 5 1) b), which states that a helicopter shall not fly below such height as would enable it to alight without danger to persons or property on the surface, in the event of failure of a power unit. In the same circumstances, the regulation for an aeroplane is even stricter; in accordance with Rule 5 1) a) and 5 1) a) i) it shall not fly over any congested area of a city, town or settlement below such height as would enable it to **alight clear of the area** and without damage to persons or property on the surface. These rules may only be waived for the purpose of saving life.

Aircraft flying under and in accordance with the terms of a PAOC are exempt from the provisions of Rule 5 1) e) which otherwise requires aircraft to fly no closer than 500 ft to any person, vessel, vehicle or structure. However, in order to prevent unnecessary alarm or concern to persons on the ground, pilots shall avoid flying any closer than is operationally necessary. The following guidance shall be observed.

1 All Aircraft – Visual Contact Flight

- 1.1 All aircraft shall maintain a height and distance that ensures effective operational involvement, while minimising noise and other nuisance to persons on the ground.
- 1.2 A low flying operation shall be conducted as a visual contact flight (VCF), which is defined as flight in which the crew is in continuous visual contact with the surface. The crew shall be able:
 - a) by day, to assess aircraft attitude and separation from the surface by external reference;
 - b) by night, to assess aircraft attitude by reference to a clearly distinguishable external horizon that may be provided either by natural lighting or by artificial lights spread deeply and widely across track.
- 1.3 To be regarded as being clear of cloud, for the purpose of maintaining VCF below 3000 ft AMSL, a helicopter shall remain at least 50 ft below the cloud base by day and 100 ft below the cloud base at night. The corresponding separations for aeroplanes shall be 100 ft by day and 200 ft at night.

NOTE: Cloud base is defined as the height above the surface of the lowest cloud in the immediate vicinity of the aircraft.

2 Aeroplane VCF Operating and Weather Minima

2.1 Minimum Operating Heights

- 2.1.1 An aeroplane that is capable of maintaining height in the cruise, following the failure of a power unit, shall not fly:

a) **Over a congested area**

BY DAY at a height below 500 ft above ground level or 500 ft above the highest obstruction within 1 km of the aircraft.

AT NIGHT at a height below 800 ft above the highest obstruction within 5 km of the aircraft, or within 2 km where the highest obstruction is lit so as to indicate its complete size and shape and it remains visible to the pilot until he has passed abeam.

NOTE: In some circumstances the CAA may sanction flight at not less than 500 m from an obstruction. When such an agreement exists, the operator shall make an appropriate entry in the PAOM Part 2.

b) **Over a non-congested area**

An aeroplane may, if operationally necessary, proceed:

BY DAY at a minimum height of 200 ft above ground level, or 200 ft above the highest obstruction within 1 km of the aircraft (whichever is greater), in straight and level flight. The minimum height shall be 400 ft above ground level, or 400 ft above the highest obstruction within 1 km of the aircraft (whichever is greater), in manoeuvring flight.

AT NIGHT at a minimum height of 800 ft above the highest obstruction within 5 km of the aircraft, or within 2 km where the highest obstruction is lit so as to indicate its complete size and shape and it remains visible to the pilot until he has passed abeam.

c) **Over water**

Without prejudice to the provisions of Article 36(3) of the ANO 2000, an aeroplane may, if operationally necessary, proceed:

BY DAY at a minimum height of 200 ft* above surface level or 200 ft* above the highest obstruction within 1 km of the aircraft, in straight and level flight. The minimum height shall be 400 ft above surface level or 300 ft above the highest obstruction within 1km of the aircraft, whichever is the higher, in manoeuvring flight.

* 100 ft where the pilot is using a serviceable radio altimeter.

AT NIGHT at a minimum height of 750 ft above surface level.

2.1.2 An aeroplane that is incapable of maintaining height in the cruise following the failure of a power unit shall not fly at night, or:

BY DAY at less than the height required to descend following a power failure to a height of 1000 ft above a place at which a safe landing can be made. Such a place shall be outside a congested area.

NOTE: An aeroplane in Performance Group E that lacks the capability to climb at least 150 fpm in the lower airspace, with one power unit inoperative, shall be deemed unable to comply with the requirements at paragraph 2.1.1 and shall therefore be limited as in paragraph 2.1.2.

2.2 Aeroplane Weather Minima

- 2.2.1 The weather minima for flights conducted under the VFR are as set out in the UK AIP.
- 2.2.2 Rule 22 a) of the Rules of the Air Regulations 1996 stipulates that, unless it is engaged on a Special VFR flight in a control zone, an aircraft shall comply with the IFR at night. The IFR minimum height requirement may be met by flying at an altitude not exceeding 3000 ft AMSL and remaining clear of cloud, within sight of the surface.
- 2.2.3 It is assumed that the aeroplane would not exceed 140 kt IAS.
- 2.2.4 The visibility shall not be less than the distance covered by the aeroplane in one minute's flight time.
- 2.2.5 Further to the conditions set out above, the weather minima presented in Tables 3 and 4 shall also apply in VCF, according to the pilot's qualifications.

Table 3 Weather Minima – Aeroplanes Capable of Maintaining Height in the Cruise, Following Engine Failure

Phase of Flight	Pilot			
	Day		Night	
All Phases	Instrument Rated	IMC Rated	Instrument Rated	IMC Rated
Open terrain	600 ft cloud base 3 km visibility	1000 ft cloud base 3 km visibility	1200 ft cloud base 5 km visibility	Not permitted
Over congested area	600 ft cloud base 3 km visibility	1000 ft cloud base 3 km visibility	1200 ft cloud base 5 km visibility	Not permitted
Over water	600 ft cloud base 4 km visibility	1000 ft cloud base 5 km visibility	1200 ft cloud base 5 km visibility	Not permitted

Table 4 Weather Minima – Aeroplanes Incapable of Maintaining Height in the Cruise, Following Engine Failure

Phase of Flight	Day	Night
Departure, Destination, Alternate	1100 ft Cloud Base 3 km visibility	NOT PERMITTED
En-Route	Cloud Base at least 1100 ft above the height of a place outside a congested area at which a safe landing can be made, following an engine failure.	

- 2.2.6 Where there is a significant risk of weather deterioration, an IMC rated pilot shall commence operations only in weather conditions that are significantly better than the stated minima and shall cease operations before a breach of the minima becomes unavoidable. A timely decision to break off the operation while VCF conditions still exist would be essential in those instances of airspace classed D or E, where the IMC rated pilot is denied the option of complying with the IFR.

NOTE: Tables that combine the VCF minimum operating heights and weather minima for twin and single-engined aeroplanes are set out at Appendices B and C.

3 Helicopter VCF Operating and Weather Minima

3.1 Minimum Separation Distance – Scene of Search/Task

- 3.1.1 During normal operations a helicopter shall remain at least 1½ rotor diameters or 50 ft (whichever is the greater distance) clear of any person, vehicle, vessel or structure. Further advice on minimum separation for persons involved in hover emplaning and hover deplaning may be found in Section 5 Chapter 5.
- 3.1.2 In exceptional circumstances a flight may be conducted within the above mentioned 1½ rotor diameters, or 50 ft limit. A record of each such encroachment shall be made and preserved by the operator for a period of at least 12 months, and shall be supplied to the CAA, if requested.
- 3.1.3 Minimum operating heights during other phases of flight are included in the 'Weather and Operating Minima' tables below.

3.2 Engine Failure Considerations

3.2.1 General

A helicopter that is not equipped with flotation gear should never have to alight on water, following an engine failure at any phase of flight.

3.2.2 Performance Group A/Group A(Restricted)

When overflying a congested area the pilot shall ensure that height and speed are sufficient to prevent the aircraft descending below the minimum operating height following an engine failure.

3.2.3 Performance Group B

The entire flight shall be conducted over terrain suitable for an emergency landing, with the following considerations:

- a) Where any non-CAA-agreed passenger is carried.

A safe emergency landing can be made at any time, without danger to persons or property on the surface, or risk to the occupants of the aircraft.

- b) Where all passengers are CAA-agreed passengers.

A safe emergency landing can be made at any time, without danger to persons or property on the surface, or risk of serious injury to the occupants of the aircraft.

3.3 Helicopters in Performance Group A and A (Restricted) – Overland Flights

Table 5 Weather and Operating Minima

Phase of Flight	Minima	
	CAA-agreed Passengers only	Any Other Passengers
Departure, Destination, Alternate	<p>Day: 300 ft cloud base/1 km visibility</p> <p>Night: 500 ft cloud base/5 km visibility, which may be reduced to 2 km in certain circumstances, with CAA approval.</p>	<p>Day: 500 ft Cloud base/1500 m visibility NOTE: Visibility may be reduced to 1 km when aircraft is flown by two pilots.</p> <p>Night: 1500 ft cloud base/5 km visibility.</p>
En route (open country)	<p>Day: 300 ft cloud base/1 km visibility. Not less than 50 ft from persons, vehicles, vessels or structures. (See also paragraph 3.1.2)</p> <p>Night: 1500 ft cloud base/5 km visibility. 500 ft above highest obstacle within 5 km of aircraft. OR 600 ft cloud base/8 km visibility. Not within 500 ft vertically of highest obstacle within 1 km of aircraft. NOTE 1: Cloud base below 1000 ft shall be acceptable only for aircraft meeting the IMC stability requirements of BCAR Section G or JAR 27. NOTE 2: When the aircraft does not meet the stability requirements above, and the cloud base is between 1000 ft and 1500 ft, it shall operate at an IAS not less than the best rate of climb speed (Vy) for the type, unless:</p> <ol style="list-style-type: none"> it is fitted with a stability augmentation system (SAS) acceptable to the CAA, or the commander can satisfy himself that adequate visual cues are available to ascertain the attitude of the aircraft and to discern the movement of the aircraft over the ground. The PAOM Part 2 shall contain guidance on which areas within the overall PAOC area would be suitable for flight at speeds below Vy. 	<p>Day: 500 ft cloud base/1500 m visibility. Not less than 200 ft above highest obstacle within 1 km of aircraft. NOTE: Visibility may be reduced to 1 km when aircraft is flown by two pilots.</p> <p>Night: 1500 ft cloud base/5 km visibility. Not less than 500 ft above highest obstacle within 5 km of aircraft. Where the helicopter fails to meet the IMC stability requirements of BCAR Section G, it shall not be flown at less than the best rate of climb speed (Vy) for the type, unless fitted with a stability augmentation system (SAS) acceptable to the CAA.</p>
Over a congested area	<p>Day: 350 ft cloud base/1500 m visibility. At least 300 ft above ground level but not within 200 ft of any fixed obstacle on the surface.</p> <p>Night: 600 ft cloud base/5 km visibility, which may be reduced to 2 km in certain circumstances, with the CAA approval. 500 ft above the highest obstacle within 1 km of the aircraft. NOTE: Further advice on what would be conducive to gaining approval for the reduced visibility criterion is available in CAP 613.</p>	<p>Day: 500 ft cloud base/1500 m visibility. Not less than 300 ft above ground level or 200 ft above highest obstacle within 1 km of aircraft, whichever is greater.</p> <p>Night: 1500 ft cloud base, 5 km visibility. Not less than 500 ft above highest obstacle within 5 km of aircraft. Where the helicopter fails to meet the IMC stability requirements of BCAR Section G, it shall not be flown at an IAS less than the best rate of climb speed (Vy) for the type, unless fitted with a stability augmentation system (SAS) acceptable to the CAA.</p>

NOTE: Where visibility falls below 2 km, airspeed shall be reduced so as to preserve the equivalent of 60 seconds visibility. At low airspeeds, it may be necessary to increase the operating height in order to remain outside the height/velocity avoid area, if applicable to the type of helicopter.

- 3.3.1 A helicopter may operate below the height of a fixed object within 1 km of its position, at night, provided that in the event of an engine failure a safe overshoot path, which does not involve more than a minimal turn, shall be available. The following criteria shall be observed:
- The fixed object is lit so as to show its complete size and shape.
 - The fixed object remains visible to the pilot at all times.
 - The fixed object does not fall within an arc of 45° either side of the aircraft nose.
 - The prevailing wind direction falls within an arc of 45° either side of the aircraft nose.
 - The aircraft shall not approach within 100 m horizontally from an illuminated fixed object.
 - Any passenger shall be a CAA-agreed passenger.

3.4 Helicopters in Performance Group B – Overland Flights

Table 6 Weather and Operating Minima

Phase of Flight	Minima	
	CAA-agreed Passengers only	Any Other Passengers
Departure, Destination, Alternate	Day: 600 ft cloud base/1 km visibility, or 400 ft cloud base/3 km visibility. Night: 600 ft cloud base/5 km visibility.	Day: either 500 ft cloud base/1 km visibility Night: Not permitted
En route (open country)	Day: Either 500 ft cloud base/1 km visibility, or 400 ft cloud base/3 km visibility. Not less than 50 ft from persons, vehicles, vessels or structures. (See also paragraph 3.1.2) Night: 1500 ft cloud base/5 km visibility and 1000 ft above the highest obstacle within 5 km of the aircraft.	Day: 600 ft cloud base/1500 m Not less than 200 ft above highest obstacle with 1 km of aircraft. Night: Not permitted
Over a congested area	Day: 1100 ft cloud base/3 km visibility. The minimum height to fly shall be 1000 ft above surface level. The aircraft shall be able to alight without danger to persons or property in the event of an engine failure. Night: No operations at night over congested areas shall be permitted.	Day: As for CAA-agreed passengers only. Night: Not permitted

- NOTES:**
- Where visibility falls below 2 km, airspeed shall be reduced so as to preserve the equivalent of 60 seconds visibility. At low airspeeds, it may be necessary to increase the operating height in order to remain outside the height/velocity avoid area.
 - At night, any flight shall only be for the purpose of pre-positioning or re-positioning the aircraft.

3.5 Helicopters in Performance Groups A and A (Restricted) – Overwater Flights

Table 7 Weather and Operating Minima

Phase of Flight	Minima	
	CAA-agreed Passengers only	Any Other Passengers
All Phases	Day: 500 ft cloud base/4 km visibility, or 400 ft cloud base/6 km visibility, or 300 ft cloud base/8 km visibility. Not less than 50 ft from persons, vehicles, vessels or structures. (See also paragraph 3.1.2)	Day: 500 ft cloud base/4 km visibility, or 400 ft cloud base/6 km visibility. Not less than 200 ft above surface level or 200 ft above the highest obstacle within 1 km of the aircraft.
	Night	
	a) Where an aircraft meets the IMC stability requirements of BCAR Section G (JAR-27 or JAR-29) and the pilot holds an instrument rating or an equivalent level of IF training and qualifications, as agreed with the CAA:	
	600 ft cloud base/8 km visibility. Not less than 500 ft above surface level or 500 ft above obstacles within 1 km of aircraft.	1500 ft cloud base/5 km visibility. Not less than 500 ft above surface level or 500 ft above the highest obstacle within 5 km of aircraft.
	b) Where an aircraft does not meet the IMC stability requirements of BCAR Section G, or JAR-27/JAR-29 unless fitted with a stability augmentation system (SAS) acceptable to the CAA or pilot does not hold an instrument rating or an equivalent level of IF training and qualifications, as agreed with the CAA: Range from nearest shoreline shall not exceed 5 km; and IAS not less than the best rate of climb speed (Vy) for the type.	
1200 ft cloud base/8 km visibility. Not less than 500 ft above surface level or 500 ft above obstacles within 1 km of aircraft.	1500 ft cloud base/8 km visibility. Not less than 1000 ft above surface level or 1000 ft above obstacles within 5 km of aircraft.	

- NOTES:**
- Tables that combine the VCF minimum operating heights and weather minima for helicopters in Performance Groups A and A (Restricted) are set out at Appendices D and E.
 - Time Limits for overwater operations are set out at Appendix H.

3.6 Helicopters in Performance Group B – Overwater Flights

Table 8 Weather and Operating Minima

Phase of Flight	Minima	
	CAA-agreed Passengers only	Any Other Passengers
Offshore, destination and alternate	Day: 600 ft cloud base/4 km visibility. Night: 1200 ft cloud base/5 km visibility.	Day: 1000 ft cloud base/8 km visibility. Night: Not permitted
En route	Day: 600 ft cloud base/4 km visibility. Not less than 50 ft from persons, vehicles, vessels or structures. Night: 1200 ft cloud base/8 km visibility – Minimum height 1000 ft above surface level. NO NIGHT OPERATION BEYOND AUTOROTATIONAL DISTANCE FROM LAND.	Day: 1000 ft cloud base/8 km visibility. Minimum operating height to comply with Rule 5, or as exempted therefrom. Night: Not permitted

- NOTES:**
- Tables that combine the VCF minimum operating heights and weather minima for helicopters in Performance Group B are set out at Appendices F and G.
 - Time limits for overwater operations in helicopters are set out at Appendix H.

3.7 Helicopters Tracking Close Inshore

Helicopters flying over water within 500 m of the nearest shoreline may operate to overland en route minima (non congested area, where applicable), provided that the effect of drift on the aircraft is to allow the aircraft Commander to maintain sight of the shoreline, without having to crane his neck.

3.8 Aircraft Assisting in a Search and Rescue Operation

a) Search Operations: there may be occasions when the use of police aircraft is requested to assist in land or over sea operations. In such instances, particularly those involving searches over water or mountainous terrain, the aircraft Commander must ensure that he complies fully with all PAOM requirements, including weather minima.

NOTE: A helicopter that is not equipped with flotation gear should never have to alight on water following an engine failure at any phase of flight.

b) Rescue Operations: police aircraft are not committed to the National Search and Rescue Organisation. Crews and helicopters are neither trained nor equipped for dedicated SAR missions over water or missions involving the use of specialised rescue equipment or techniques. Such operations shall therefore not be undertaken.

If units envisage becoming involved in such operations, appropriate material must be included in their PAOM Part 2 to include training requirements and aircraft equipment.

Chapter 4 Flight Following

1 Position Reporting

When possible, a pilot shall maintain communication with an ATSU or a Flight Information Service and make it aware of routeing, operating area and future intentions, so that timely overdue action may be taken, if necessary. The normal procedure shall be as follows:

- a) A position report shall be given in terms of distance and bearing from a known reporting point, major ground feature or conurbation. The use of village or local place names should be avoided as they may not be known to other aircraft.
- b) A position report shall be passed to the controlling or monitoring agency, as requested by that agency, normally at 30 minute intervals onshore and 15 minute intervals offshore. Where the position is not exactly known, it shall be passed as an estimated position.
- c) Any deviation from an established flight plan shall be made known immediately to the controlling or monitoring agency.
- d) Should communication not be possible because of terrain factors, the pilot shall establish and maintain communication with the relevant police control room, passing the following information:
 - i) aircraft type;
 - ii) number of persons on board;
 - iii) present position;
 - iv) route;
 - v) time of next 'operations normal' call.

NOTE: When a pilot does not receive acknowledgement of his 'operations normal' call, he should consider making RT contact with an alternative agency, in order to avoid unnecessary overdue action. If still unsuccessful, he should consider breaking off the task and proceed to a location where air/ground communication proves feasible.

- e) If all communication is lost, the aircraft shall maintain its original flight plan unless it would be unsafe to do so.

2 Action by Police Control Room

When a controller becomes aware that he has missed an 'operations normal' call, he shall immediately attempt to establish communication with the aircraft and, at the same time, contact other ground units to ascertain if any are in communication with the aircraft and can confirm that all is well. In the absence of any satisfactory information on the aircraft for 30 minutes after an expected 'operations normal' call, the controller shall initiate overdue action in accordance with a procedure that shall be laid down in the PAOM Part 2. This procedure shall include a method of alerting the Rescue Co-ordination Centre.

Appendix A Deleted at Amendment 2 (November 1999)

Appendix B Twin-Engined Aeroplane Capable of Maintaining Height on One Engine in the Cruise (see Note 5)

OCCUPANTS: ANYONE

MINIMUM WEATHER/MINIMUM OPERATING HEIGHTS FOR VCF (SEE NOTE 1)

DAY

NIGHT

PHASE OF FLIGHT a)	MINIMUM WEATHER b)		MINIMUM OPERATING HT c)	MINIMUM WEATHER d)	MINIMUM OPERATING HT e)
OVERLAND	Col c) may dictate higher cloud base (See Notes 2 and 7)		Shall also be not less than 100' below cloud base	Col e) may dictate higher cloud base (See Note 2)	Shall also be not less than 200' below cloud base
Instrument Rated (R) IMC Rated only (IMC)	R	IMC	R or IMC	R (See Note 6)	R (See Note 6)
All phases - non - congested Area (See Note 3)	600' Cloud Base 3 km Visibility	1000' Cloud Base 3 km Visibility	Wings Level - Greater of 200' AGL or 200' above obstacles within 1 km Manoeuvring - Greater of 400' AGL or 400' above obstacles within 1 km	1200' Cloud Base/5 km Visibility	1000' above obstacles within 5 km
All Phases - Congested Area (See Note 3)	600' Cloud Base 3 km Visibility	1000' Cloud Base 3 km Visibility	Greater of 500' AGL or 500' above obstacles within 1 km	1200' Cloud Base/5 km Visibility	1000' above obstacles within 5 km (See Note 4)
OVERWATER					
All phases (See Note 3)	600' Cloud Base 4 km Visibility	1000' Cloud Base 5 km Visibility	Wings Level - 200' * above surface level or 200' * above obstacles within 1 km * 100' whenever the pilot is using a serviceable radio altimeter Manoeuvring - Greater of 400' above surface level or 300' above obstacles within 1 km	1200' Cloud base/5 km Visibility	750' above surface level

NOTES

- 1 All flights shall be **Visual Contact Flights (VCF)** defined as a flight in which the flight crew is in continuous visual contact with the surface.
- 2 Cloud base is defined as the height above the surface level of the lowest cloud in the immediate vicinity of the aircraft.
- 3 Visibility shall not be less than the distance covered in 60 seconds.
- 4 See Chapter 3 paragraph 3.1.2 for conditions under which it is permissible to fly in closer vertical and lateral proximity to obstructions than stated in column e).
- 5 Twin-engined aeroplanes in Performance Group E shall have the capability of 150 FPM rate of climb with one power unit inoperative.
- 6 Aircraft commanders shall possess an instrument rating.
- 7 In conditions of shallow fog the RVR for take-off shall be not less than 600 metres with runway centre line markings and not less than 1000 metres without such markings. The minimum RVR for landing shall be 800 metres.

Appendix C Single-Engined or Twin-Engined Aeroplane but Incapable of Maintaining the Required Rate of Climb (see Note 5)

OCCUPANTS: ANYONE

MINIMUM WEATHER/MINIMUM OPERATING HEIGHTS FOR VCF (SEE NOTES 1 AND 8)

DAY			NIGHT	
PHASE OF FLIGHT a)	MINIMUM WEATHER b)	MINIMUM OPERATING HT c)	MINIMUM WEATHER d)	MINIMUM OPERATING HT e)
Departure, Destination, Alternate	At least 1100' Cloud Base 3 km Visibility (See Note 2)	N/A	NOT PERMITTED	
En-Route (See Note 3)	Cloud Base at least 100' above the height required to satisfy column c) (See Note 2) 3 km Visibility (See Note 9)	Not less than the height required to descend, following power failure, to a height of 1000' above a place at which a safe landing can be made. Such a place shall be outside a congested area.		

NOTES

- 1 All flights shall be **Visual Contact Flights (VCF)** defined as a flight in which the flight crew is in continuous visual contact with the surface.
- 2 Cloud base is defined as the height above the surface level of the lowest cloud in the immediate vicinity of the aircraft.
- 3 Visibility shall not be less than the distance covered in 60 seconds.
- 5 Twin-engined aeroplanes in Performance Group E shall have the capability of 150 FPM rate of climb with one unit inoperative.
- 8 VCF limits for instrumented rated and IMC rated pilots are identical.
- 9 Before take-off the aircraft commander shall be in possession of a weather forecast for the duration of the flight that gives a visibility along the route of at least 5 km.

Appendix D Helicopter – Performance Group 'A' and 'A' (Restricted)

OCCUPANTS: CREW AND CAA-AGREED PASSENGERS ONLY (SEE NOTE 10)

MINIMUM WEATHER/MINIMUM OPERATING HEIGHTS FOR VCF (SEE NOTE 1)

DAY

NIGHT

PHASE OF FLIGHT a)	MINIMUM WEATHER b)	MINIMUM OPERATING HT c)	MINIMUM WEATHER d)		MINIMUM OPERATING HT e)	
OVERLAND	Col c) may dictate higher cloud base (See Note 2)	Shall also be not less than 50' below cloud base	Col e) may dictate higher cloud base (See Note 2)		Shall also be not less than 100' below cloud base	
Departure, Destination, Alternate	300' Cloud Base/1 km Visibility	N/A	500' Cloud Base/5 km Visibility (Visibility 2 km when previously agreed with CAA)		N/A	
En-Route non-Congested Area (See Note 3)	300' Cloud Base/1 km Visibility	50' above persons, vehicles, vessels or structures (See Note 12)	1500' Cloud Base/5 km Visibility 600' Cloud Base/8 km Visibility (See Note 13)		500' above obstacles within 5 km OR 500' above obstacles within 1 km	
En-Route congested Area (See Notes 3 and 11)	350' Cloud Base/1.5 km Visibility	300' AGL and not within 200' above obstacles within 1 km	600' Cloud Base/5 km Visibility (Visibility 2 km when previously agreed with CAA)		500' above obstacles within 1 km (See Note 4)	
OVERWATER (See Note 14)			RATED and STABILISED (See Note 13)	UNRATED and/or UNSTABILISED	RATED and STABILISED (See Note 13)	UNRATED and/or UNSTABILISED
All phases	500' Cloud Base/4 km Visibility OR 400' Cloud Base/6 km Visibility OR 300' Cloud Base/8 km Visibility	50' above persons, vehicles, vessels or structures (See Note 12)	600' Cloud Base 8 km Visibility	1200' Cloud Base/8 km Visibility Maximum range 5 km from shoreline	500' above surface level or 500' above obstacles within 1 km	500' above surface level or 500' above obstacles within 5 km

NOTE

- 1 All flights shall be **Visual Contact Flights (VCF)** defined as a flight in which the flight crew is in continuous visual contact with the surface.
- 2 Cloud base is defined as the height above surface level of the lowest cloud in the immediate vicinity of the aircraft.
- 3 Visibility shall not be less than the distance covered in 60 seconds.
- 4 See Chapter 3 paragraph 3.1.2 for conditions under which it is permissible to fly in closer vertical and lateral proximity to obstacles than stated in column e).
- 10 CAA-agreed passengers comprise: police officers, police authority employees, FOIs, medical attendants, pilot's licence holders under training for police work and such other persons who, with CAA permission, are specified in PAOM Part 2.
- 11 The helicopter shall not be flown over congested areas below a height or speed at which in the event of an engine failure the aircraft would be forced to descend below the minimum operating height.
- 12 In exceptional circumstances the 50' minimum height may be waived. A record of each such encroachment shall be made and preserved by the operator for a period of 12 months and shall be supplied to the CAA if requested.
- 13 Unless fitted with a stability augmentation system (SAS) acceptable to the CAA, helicopters shall be equipped to meet the IMC stability requirements of BCAR Section G when operating at night:
 - a) over water beyond 5 km from the nearest shoreline, when the aircraft commander is required to hold an instrument rating;
 - b) over non-congested land areas below 3000' where the cloud base is less than 1000'. However, where the cloud base is between 1000' and 1500', a helicopter that fails to meet the aforementioned stability requirements may operate VCF provided that an IAS not less than the best rate of climb speed (Vy) is maintained, unless the commander can satisfy himself that adequate visual cues are available to ascertain the altitude of the aircraft and to discern the movement of the helicopter over the ground. The PAOM Part 2 shall contain guidance on which areas within the overall PAOC area would be suitable for flight below Vy.
- 14 When over water within 500 m of the nearest shoreline, overland en-route non-congested area minima (where applicable) may apply, provided that the commander is able to keep the shoreline in sight, without craning his neck.

Appendix E Helicopter – Performance Group 'A' and 'A' (Restricted)

OCCUPANTS: CREW AND ANYONE OTHER THAN CAA-AGREED PASSENGERS ONLY (SEE NOTE 10)

MINIMUM WEATHER/MINIMUM OPERATING HEIGHTS FOR VCF (SEE NOTE 1)

DAY			NIGHT			
PHASE OF FLIGHT a)	MINIMUM WEATHER b)	MINIMUM OPERATING HT c)	MINIMUM WEATHER d)		MINIMUM OPERATING HT e)	
OVERLAND	Col c) may dictate higher cloud base (See Note 2)	Shall also be not less than 50' below cloud base	Col e) may dictate higher cloud base (See Note 2)		Shall also be not less than 100' below cloud base	
Departure, Destination, Alternate or En-Route (See Notes 3 and 11)	500' Cloud Base/1 km Visibility (minimum visibility reduced to 1 km when operating over non-congested area with 2 pilots)	En-Route congested area: the greater of 300' AGL or 200' above obstacles within 1 km En-Route non-congested area: 200' above obstacles within 1 km	1500' Cloud Base/5 km Visibility (See Note 13)		En-Route: 500' above highest obstacles within 5 km	
OVERWATER (See Note 14)			RATED and STABILISED (See Note 13)	UNRATED and/or UNSTABILISED	RATED and STABILISED (See Note 13)	UNRATED and/or UNSTABILISED
All phases	500' Cloud Base/4 km Visibility OR 400' Cloud Base/6 km Visibility	200' above surface level or 200' above obstacles within 1 km	1500' Cloud Base/5 km Visibility	1500' Cloud Base/8 km Visibility	500' above surface level or 500' above obstacles within 5 km	1000' above surface level or 1000' above obstacles within 5 km

NOTES

- 1 All flights shall be **Visual Contact Flights (VCF)** defined as a flight in which the flight crew is in continuous visual contact with the surface.
- 2 Cloud base is defined as the height above surface level of the lowest cloud in the immediate vicinity of the aircraft.
- 9 Visibility shall not be less than the distance covered in 60 seconds.
- 10 CAA-agreed passengers comprise: police officers, police authority employees, FOIs, medical attendants, pilot's licence holders under training for police work and such other persons who, with CAA permission, are specified in PAOM Part 2.
- 11 The helicopter shall not be flown over congested areas below a height or speed at which in the event of an engine failure the aircraft would be forced to descend below the minimum operating height.
- 13 Unless fitted with a stability augmentation system (SAS) acceptable to the CAA, helicopters shall be equipped to meet the IMC stability requirements of BCAR Section G when operating at night:
 - a) over water beyond 5 km from the nearest shoreline, when the aircraft commander is required to hold an instrument rating;
 - b) over non-congested land areas below 3000' where the cloud base is less than 1000'. However, where the cloud base is between 1000' and 1500', a helicopter that fails to meet the aforementioned stability requirements may operate VCF provided that an IAS not less than the best rate of climb speed (Vy) is maintained, unless the commander can satisfy himself that adequate visual cues are available to ascertain the altitude of the aircraft and to discern the movement of the helicopter over the ground. The PAOM Part 2 shall contain guidance on which areas within the overall PAOC area would be suitable for flight below Vy.
- 14 When over water within 500 m of the nearest shoreline, overland en-route non-congested area minima (where applicable) may apply, provided that the commander is able to keep the shoreline in sight, without craning his neck.

Appendix F Helicopter – Performance Group 'B'

OCCUPANTS: CREW AND CAA-AGREED PASSENGERS ONLY (SEE NOTE 10)

MINIMUM WEATHER/MINIMUM OPERATING HEIGHTS FOR VCF (SEE NOTE 1)

DAY			NIGHT	
PHASE OF FLIGHT a)	MINIMUM WEATHER b)	MINIMUM OPERATING HT c)	MINIMUM WEATHER d)	MINIMUM OPERATING HT e)
OVERLAND	Col c) may dictate higher cloud base (See Note 2)	Shall also be not less than 50' below cloud base	Col e) may dictate higher cloud base (See Note 2)	Shall also be not less than 100' below cloud base
Departure, Destination, Alternate (See Note 3)	500' Cloud Base/1 km Visibility OR 400' Cloud Base/3 km Visibility	N/A	600' Cloud Base/5 km Visibility	N/A
En-Route non-Congested Area (See Note 3)	500' Cloud Base/1 km Visibility OR 400' Cloud Base/1 km Visibility	50' above persons, vehicles, vessels or structures (See Note 12)	1500' Cloud Base/5 km Visibility	1000' above obstacles within 5 km
En-Route congested Area (See Note 4)	1100' Cloud Base/3 km Visibility	100' AGL	NOT PERMITTED	
OVERWATER (See Note 14)				
Offshore departure, destination, alternate	600' Cloud Base/4 km Visibility	N/A	1200' Cloud Base/5 km Visibility	N/A
En-Route	600' Cloud Base/4 km Visibility	50' above persons, vehicles, vessels or structures (See Note 12)	1200' Cloud Base/8 km Visibility	Minimum 1000' above surface level or that height (if higher) at which the helicopter remains within autorotational distance of land

NOTES

- 1 All flights shall be **Visual Contact Flights (VCF)** defined as a flight in which the flight crew is in continuous visual contact with the surface.
- 2 Cloud base is defined as the height above surface level of the lowest cloud in the immediate vicinity of the aircraft.
- 3 Visibility shall not be less than the distance covered in 60 seconds.
- 10 CAA-agreed passengers comprise: police officers, police authority employees, FOIs, medical attendants, pilot's licence holders under training for police work and such other persons who, with CAA permission, are specified in PAOM Part 2.
- 12 In exceptional circumstances the 50' minimum height may be waived. A record of each such encroachment shall be made and preserved by the operator for a period of 12 months and shall be supplied to the CAA if requested.
- 14 When over water within 500 m of the nearest shoreline, overland en-route non-congested area minima (where applicable) may apply, provided that the commander is able to keep the shoreline in sight, without craning his neck.

Appendix G Helicopter – Performance Group 'B'

OCCUPANTS: CREW AND ANYONRE OTHER THAN CAA-AGREED PASSENGERS (SEE NOTE 10)

MINIMUM WEATHER/MINIMUM OPERATING HEIGHTS FOR VCF (SEE NOTE 1)

DAY			NIGHT	
PHASE OF FLIGHT a)	MINIMUM WEATHER b)	MINIMUM OPERATING HT c)	MINIMUM WEATHER d)	MINIMUM OPERATING HT e)
OVERLAND	Col c) may dictate higher cloud base (See Note 2)	Shall also be not less than 50' below cloud base	NOT PERMITTED	
Departure, Destination, Alternate (See Note 3)	600' Cloud Base/1 km Visibility	N/A		
En-Route non-Congested Area (See Note 3)	600' Cloud Base/1.5 km Visibility	Compliance with Rule 5 of Rules of the Air or as specifically exempted therefrom		
En-Route congested Area (See Note 4)	1100' Cloud Base/3 km Visibility	100' AGL		
OVERWATER (See Note 14)				
All phases	100' Cloud Base/8 km Visibility	Compliance with Rule 5 of Rules of the Air or as specifically exempted therefrom		

NOTES

- 1 All flights shall be **Visual Contact Flights (VCF)** defined as a flight in which the flight crew is in continuous visual contact with the surface.
- 2 Cloud base is defined as the height above surface level of the lowest cloud in the immediate vicinity of the aircraft.
- 3 Visibility shall not be less than the distance covered in 60 seconds.
- 10 CAA-agreed passengers comprise: police officers, police authority employees, FOIs, medical attendants, pilot's licence holders under training for police work and such other persons who, with CAA permission, are specified in PAOM Part 2.
- 14 When over water within 500 m of the nearest shoreline, overland en-route non-congested area minima (where applicable) may apply, provided that the commander is able to keep the shoreline in sight, without craning his neck.

Appendix H Time Limits for Helicopter Overwater Operations

GROUP B		GROUP A AND A RESTRICTED		
Any non CAA-agreed passengers Floats	CAA-agreed passengers only Floats	CAA-agreed passengers only No Floats	Floats	No Liferrafts
MTOW 20 Min MROW 10 Min	MTBC 10 Min MRBC 5 Min	MTBC 50 Min MRBC 25 Min	Unlimited Time	MROW 10 Min
No Liferrafts No Floats MROW 20 Sec plus auto-rotative distance to land	MROW 5 Min No MTOW	i.e. Unlimited time may be spent in this corridor provided that any Group B helicopter is float equipped		
WATER	WATER	WATER	WATER	WATER
LAND	LAND	LAND	LAND	LAND

Abbreviations
 MTOW Maximum Time Over Water
 MROW Maximum Range Over Water
 MTBC Maximum Time Beyond Corridor
 MRBC Maximum Range Beyond Corridor

Note: AOC Area AA limits distance to 12 nm from the high water spring tide line of mainland UK as defined in Section 1, Chapter 1 paragraph 3.

Section 4 Flight Operations - IFR

Chapter 1 Instrument Flight Rules

Police ASU operations are predominantly VFR or VCF and take place within a relatively small geographical area. When considering flight under IFR, commanders shall proceed with caution and take into account instrument flying recency and area competency (See Part D). IFR flight may be advantageous due to speed or fuel efficiency at higher levels, or for deployment or recovery purposes.

When flying VMC at night the mandatory IFR requirement is met by satisfying the minimum height, quadrantal and semi-circular rules (Rules of the Air Regulations 1996, Rules 29 and 30) when flying outside controlled airspace. When flying VMC at night within controlled airspace the minimum height rule (Rule 29) applies, as do the flight plan and position report rules (Rules 31 and 32). Thus when flying in VMC at night, the requirements at paragraph 1 a) and b) do not apply.

1 IFR – Pilot/Aircraft Requirements

An aircraft commander may fly in accordance with Instrument Flight Rules (IFR) in IMC only when:

- a) he holds a current instrument rating on type and has a current IFR Base Check;
- b) the aircraft is certificated for IMC operation.

2 IFR – Air Traffic Service Requirements

An aircraft commander shall fly in accordance with Instrument Flight Rules (IFR) when:

- a) in Class A airspace;
- b) VFR cannot be maintained (unless Special VFR flight is permitted);
- c) at night.

3 Retention of Records – IFR Flights

The following records shall be maintained for all IFR flights and retained for at least three months.

- a) relevant TAFs and route forecasts;
- b) flight plans;
- c) navigation logs.

Chapter 2 Definitions

Aerodrome Operating Minima

The lowest values of cloud ceiling and runway visual range for take-off, and decision height or minimum descent height and runway visual range for approach and landing, below which the aircraft cannot safely take-off or approach to land.

Cloud Ceiling (CC)

The vertical distance from the elevation of the aerodrome to the lowest part of any cloud visible from the aerodrome, which is sufficient to obscure more than half of the sky above the aerodrome.

Circling Minima

The lowest height and in-flight visibility, in which a circuit or partial circuit using visual reference only, may be carried out within a fixed radius or sector of an aerodrome at which the landing is intended.

Decision Height (DH)

The minimum height above the elevation of the aerodrome or touchdown elevation to which a precision approach to landing can safely be continued without visual reference.

Final Approach

Begins when the aircraft has been cleared to land or continue and crosses the outer marker, or other main facility inbound, with the intention of making a landing.

Instrument Meteorological Conditions (IMC)

Weather conditions worse than those specified for VFR and where reference to flight instruments is required.

Minimum Descent Altitude/Height (MDA/H)

A specified height or altitude on a non-precision approach below which descent may not be made without adequate visual reference.

Non-Precision Approach

An instrument approach using non-visual aids for guidance in azimuth or elevation but which is not a precision approach.

Obstacle Clearance Altitude/Height (OCA/OCH)

The lowest altitude/height above the aerodrome elevation or above the elevation of the relevant runway threshold used in establishing compliance with the appropriate clearance criteria.

Precision Approach

An instrument approach using Instrument Landing System, Microwave Landing System or Precision Approach Radar for guidance in both azimuth and elevation.

Runway Visual Range (RVR)

The maximum distance in the direction of take-off or landing at which the runway lights or markers can be seen from a point 15 ft above the runway centre line.

Stabilising Altitude

The maximum altitude at which flight can be maintained following an engine failure, with the remaining engine(s) at maximum continuous power.

Transition Altitude

The altitude at or below which the vertical position of an aircraft is normally controlled by reference to altitude. Wherever possible, there is a common transition altitude for all aerodromes within a control zone. The transition altitude for civil aerodromes outside controlled airspace is normally 3000 ft.

Transition Level

The lowest flight level available for use above the transition altitude.

Transition Layer

The airspace between the transition altitude and the transition level.

Visual Meteorological Conditions (VMC)

Weather conditions equal to or better than those specified for VFR. (See Section 3.)

Chapter 3 Instrument Flight Rules

The Instrument Flight Rules (IFR) are set out in the following paragraphs.

1 Minimum Height

Without prejudice to the provisions of Rule 5 of the Rules of the Air, in order to comply with IFR an aircraft shall not fly at a height of less than 1000 ft above the highest obstacle within a distance of 5 NM of the aircraft unless:

- a) it is necessary for the aircraft to do so in order to take-off or land;
- b) the aircraft is flying on a route notified for the purposes of this rule;
- c) the aircraft has been otherwise authorised by the competent authority; or
- d) the aircraft is flying at an altitude not exceeding 3000 ft AMSL and remains clear of cloud and in sight of the surface.

2 Quadrantal Rule

This instruction assumes that aircraft operating in accordance with a PAOC would not operate above FL 245.

In order to comply with IFR, an aircraft when in level flight above 3000 ft AMSL, or above the appropriate transition altitude, whichever is the higher, shall be flown at a level appropriate to its magnetic track, in accordance with Table 9 set out below. The level shall be measured by an altimeter set:

- a) in the case of a flight over the UK, to a pressure setting of 1013.2 millibars; or
- b) in the case of any other flight, according to the system published by the competent authority in relation to the area over which the aircraft is flying.

Provided that the aircraft may be flown at a level other than the level required by this rule if it is flying in conformity with instructions given by an air traffic control unit or in accordance with notified en-route holding patterns or in accordance with holding procedures notified in relation to an aerodrome.

Table 9 Flights at Levels Below 24 500 ft

Magnetic Track	Cruising Level
Less than 90°	Odd thousands of feet
90° but less than 180°	Odd thousands of feet + 500 ft
180° but less than 270°	Even thousands of feet
270° but less than 360°	Even thousands of feet + 500 ft

3 Semi-Circular Rule

Within the UK Flight Information Regions, the IFR semi-circular cruising levels apply above FL 250. However, other States may require vertical separation above the transition level, for both IFR and VFR flights, based on the ICAO standard semi-circular flight levels. These requirements may be found in the AIP of the country in question.

4 ATC Clearance for Flight Plans

- a) Section 2 Chapter 1 paragraph 3 sets out the circumstances in which a flight plan would be required, explains the flight plan filing procedure and describes how and when an aircraft commander may cancel a flight plan.
- b) Before an aircraft either takes-off from a point within any controlled airspace or otherwise flies within any controlled airspace, the aircraft commander shall cause a flight plan to be communicated to the appropriate ATSU and shall obtain an ATC clearance based on such a flight plan.
- c) The aircraft commander shall fly in conformity with:
 - i) the ATC clearance issued for the flight, as amended by any further instructions given by an ATSU; and
 - ii) the holding and instrument approach procedures notified for the aerodrome of destination, unless he is otherwise authorised by the ATSU at that aerodrome.

Provided that he shall not be required to comply with the foregoing provisions of this paragraph if:

 - he is able to fly in uninterrupted VMC for so long as he remains in controlled airspace; and
 - he has informed the appropriate ATSU of his intention to continue the flight in compliance with VFR and has requested that unit to cancel his flight plan.
- d) If for the purpose of avoiding immediate danger any departure is made from the provisions of sub-paragraph c) (as is permitted by Article 84 (3) of the ANO), the aircraft commander shall, in addition to causing particulars to be given in accordance with Article 84 (4) of the ANO, as soon as possible inform the appropriate ATSU of the deviation.

In-Flight Deviation from the IFR or ATC Clearance

An aircraft commander who departs from his ATC clearance, or deviates in flight from the IFR, shall also:

- a) report the incident to the Chief Pilot;
- b) complete and send a written report to the assigned FOI within 10 days of the incident.

5 Position Reports

In order to comply with IFR the aircraft commander in IFR flight who flies in or is intending to enter controlled airspace shall report to the appropriate ATSU the time, and the position and level of the aircraft at such reporting points or at such intervals of time as may be notified for this purpose or as may be directed by the ATSU.

Chapter 4 IFR Operating Minima

1 Pre-Flight Checks of Instruments, Radio, Navigation and Radio Navigation Equipment

The operator shall, in the PAOM Part 2, set out the checks required to confirm the serviceability of the flight instruments, radio, navigation and radio navigation equipment before take-off on an IFR flight.

2 State Minima

In certain countries, State Minima are laid down for specific aircraft types. When these differ from the PAOC holder's minima, the more restrictive limits shall apply during operations in the State concerned.

3 Aerodrome Operating Minima (AOM) Calculations

3.1 From 1 April 1999 all UK Air Operator Certificate holders and UK Police Air Operator Certificate holders were required to use Subpart E of JAR-OPS 1 Commercial Air Transportation (Aeroplanes) or Subpart E of JAR-OPS 3 Commercial Air Transportation (Helicopters) respectively, as the sole code against which AOM calculations can be made.

3.2 It should be noted that for flights made at aerodromes located in the United Kingdom, AOM published in the UK AIP are now calculated upon JAR-OPS Subpart E. UK Police Air Operator Certificate holders must therefore ensure that AOM specified in their PAOM Part 2 for flights at these aerodromes are not less restrictive than those published in the AIP.

4 Initial Climb

The aircraft commander shall ensure, before taking-off on any flight intended to enter IMC at a height below 1500 ft above the aerodrome of departure, that the net take-off flight path shall meet the following requirements:

a) Aeroplanes

Adequate obstacle clearance, as calculated in accordance with Section 2 Chapter 6 paragraphs 1 and 2.

b) Helicopters

Adequate obstacle clearance, as calculated in accordance with Section 2 Chapter 7 paragraph 4.3.

5 En-Route Minimum Safe Altitude (MSA)

Aircraft operating in IMC shall fly above MSA, as calculated below, except when taking-off, landing or otherwise authorised by air traffic control.

5.1 Calculation of MSA

MSA shall be calculated with reference to Tables 10, 11 and 12.

Table 10 Basic Consideration of Obstacles

Situation	Distance from track within which height (H) of highest obstacle or terrain shall be noted	Increments to be added to (H) to obtain MSA (add appropriate figure below and round up to next 100 ft)
Inside controlled airspace provided track is delineated by two separate navigation aids	10 NM	Obstacles 5000 ft or less AMSL – 1000 ft Obstacles higher than 5000 ft AMSL – 2000 ft
Outside controlled airspace	20 NM	As above
Radar controlled flight within 25 NM of the aerodrome of departure or intended landing (control to be monitored by reference to aircraft navigation aids)	5 NM	1000 ft

Table 11 Height Increase for Flight Over High Ground and Wind Effect

Height of Ground	Wind Velocity			
	0–30 Kt	31–50 Kt	51–70 Kt	70 Kt+
2000 ft–8000 ft	500 ft	1000 ft	1500 ft	2000 ft
Above 8000 ft	1000 ft	1500 ft	2000 ft	2500 ft

Table 12 Height Increases for Low Surface Temperature

Temperature lower than ISA –15°C	Add not less than 10%
Temperature lower than ISA –30°C	Add not less than 20%
Temperature lower than ISA –50°C	Add not less than 25%

5.2 Published Sources of MSA Information

Jeppesen and Aerad route guides publish MSA above the highest known terrain and notified obstacles within degrees of latitude and longitude, in accordance with Table 13.

Table 13 MSA as Published on Charts

Chart	Elevation of Obstacle	Vertical Clearance
Aerad and Jeppesen	Up to 5000 ft	1000 ft
Aerad	5001 – 10000 ft	1500 ft
Aerad	10000 ft and above	2000 ft
Jeppesen	5000 ft and above	2000 ft

NOTE: RAF En-Route Low Altitude Charts depict a maximum elevation within latitude/longitude blocks. **The figure does not include a safety factor and should therefore not be confused with MSA.**

5.3 **Minimum Safe Flight Level**

The aircraft commander shall ascertain the minimum safe flight level from the MSA obtained from paragraph 5.1, and the latest forecast route QNH, using the Flight Level Graph in the UK AIP (or the RAF En-Route Document).

5.4 **Drift-down Following Engine Failure**

The aircraft commander shall ensure that any drift-down from the chosen flight level after single engine failure shall not cause the aircraft to descend below MSA or be a danger to traffic at lower levels. When in controlled airspace, he shall also inform the controlling authority of any drift-down.

5.5 **Stabilising Altitude**

The aircraft commander shall calculate the rate of descent and the stabilising altitude attainable with one engine inoperative, from the AFM. Where the stabilising altitude is found to be lower than the MSA, the aircraft commander shall select and fly an alternative route along which MSA can be maintained.

6 **Descent in IMC**

The aircraft shall not descend below MSA in IMC unless either of the following conditions have been fulfilled:

a) **Any Aircraft**

The commander has positively established his position as being on an approved procedure as set out in either the UK AIP, Aerad, Bottlang or Jeppesen, or on a discrete approach procedure agreed by the CAA and set out in the PAOM Part 2.

b) **Helicopters**

The commander has positively established his position over the sea at a point from which he can comply with a cloud break procedure agreed by the CAA and set out in the PAOM Part 2.

NOTE: Regardless of any radar service, it is the responsibility of the aircraft commander to maintain adequate terrain clearance.

7 **Preparation for Approach**

a) Before starting an approach, the aircraft commander shall have available the appropriate terminal approach procedure charts for the runway and approach aid to be used at the destination airfield. The charts shall then be placed in a position where they may conveniently be consulted by the aircraft commander.

b) A Surveillance Radar Approach may be flown without a procedural chart where it is known that such a chart does not exist.

c) The aircraft commander shall establish DH, or MDH if appropriate.

d) On a non-precision approach the aircraft commander shall ascertain the time to run at the appropriate ground speed from the outer marker (or other main facility) to the missed approach point.

8 Sector Safety Altitude

The aircraft commander shall be aware of the sector safety altitude for a given aerodrome as shown in the Terminal Approach Procedure Charts in the UK AIP, Jeppesen or Aerad route guides.

9 Initial Approach

When the aircraft position has been positively identified at the initial approach fix and the commander has obtained ATC clearance, descent may continue to the safety altitude applicable to the approach procedure, as indicated on the appropriate terminal approach procedure chart or as required by ATC (but not below the relevant sector safety altitude). When joining a holding pattern, the commander shall not descend below sector safety altitude before becoming established in the hold.

10 Visual Approach

To comply with ATC instructions or to expedite arrival, the aircraft commander may discontinue an instrument approach in favour of a visual approach, provided that he reports that he has the aerodrome in sight and is confident that he can safely complete the approach from that point, by reference to terrain. The commander shall advise ATC of his intention to make a visual approach.

11 Approach Attempts

After making an unsuccessful instrument approach attempt at any airfield, the aircraft commander shall make a further attempt only where, if again unsuccessful, the remaining fuel would be sufficient to reach the alternate with full holding reserves. In any event, a third attempt shall not be made unless a significant improvement in met conditions is forecast as imminent.

12 Approach Ban

The aircraft commander shall not commence an approach to land at any airfield where the RVR, either reported or calculated from met visibility, is at the time less than the specified minimum for landing. An approach is deemed to commence at a height of 1000 ft above DH.

If the aircraft is already on the approach when the RVR falls below the specified minimum, the aircraft commander shall initiate an immediate go around.

13 Determination of Minima at British Military Airfields

For British military airfields in the UK and overseas, a minimum height for each instrument approach procedure is shown in heavy type on the RAF Approach Charts in a table of Aircraft Categories. The minimum height will also be passed by ATC, who will request the pilot's DH or MDH and intentions.

Precision approaches, for which the absolute minimum is 200 ft QFE, are normally based on a 3° glide path. The actual glide path angle, also shown on the chart, may be as low as 2.5°. Increments, as shown in Table 14 below, shall be added to the

minimum height to obtain the DH. There is no provision for the use of radar altimeters.

Table 14 Glide Path Angles – DH Increments

Nominal Glide Path Angle	Aircraft Categories			
	A	B	C	D
2.5°	Nil	10 ft	20 ft	30 ft
2.6°	10 ft	20 ft	30 ft	40 ft
2.7°	10 ft	20 ft	30 ft	40 ft
2.8°	20 ft	30 ft	40 ft	50 ft
2.9°	20 ft	30 ft	40 ft	50 ft
3.0°	30 ft	40 ft	50 ft	60 ft

NOTE: For a non-precision approach, the minimum height shall be OCH.

Section 5 Police Operating Procedures

When involved on police operations, at least one qualified air observer should normally be in the aircraft (this requirement does not apply to underslung load operations).

This section of the PAOM provides instructions for ALL the operational roles that, in accordance with a CAA/Home Office agreement, may be undertaken by a PAOC holder. The instructions are intended to provide the correct balance of safety and operational effectiveness. Where an operator seeks a variation from any instruction in this section of the PAOM, he shall submit suitable proposals to the CAA and the Home Office. When such proposals have been agreed, the operator shall incorporate them in the PAOM Part 2.

Chapter 1 Categories of Passenger-Carrying Operations

Passengers may be carried on either of two types of operation, as described below.

1 Normal Seating/Normal Operations

Normal seating is considered to be the configuration in which passengers are securely seated throughout the flight in a part of the aircraft designed for the purpose.

Where flight is conducted with doors open or removed, the operator shall ensure that the person immediately adjacent to the open doorway shall be familiar with the use of a dispatcher's harness and shall wear the same, secured to an approved point. It is not acceptable for a person secured only by a normal safety harness to be seated immediately adjacent to an open doorway. The aircraft commander shall ensure that all cabin equipment is satisfactorily secured before flight whenever the doors are open or have been removed.

2 Special Seating/Special Operations

Special seating is considered to be any configuration in which the passenger seating arrangements do not conform with the requirements for normal seating.

Special seating arrangements are acceptable for special operations which fall into one of the following classes:

- a) the carriage of specialist teams, including firearms units who require rapid deployment and who may have in hand items of equipment that would normally be stowed;
- b) the evacuation of injured persons whose treatment en-route requires unrestricted mobility on the part of medical staff carried on the aircraft;
- c) the rapid evacuation of members of the public and emergency services from a scene of potential danger.

THE OPERATOR MAY UNDERTAKE ONLY THOSE SPECIAL OPERATIONS WHICH FALL INTO THE ABOVE CLASSES, OR THOSE WHICH ARE SUBSEQUENTLY AGREED BY THE CAA AND THE HOME OFFICE.

3 Special Operations – Passenger Briefing

During special operations it shall be acceptable for the aircraft commander to delay the passenger briefing until after take-off, when it may be completed by the observer at a time acceptable to the aircraft commander. Alternatively, the briefing requirement may be met by periodic training for specialist teams, in accordance with instructions that shall be set out in the PAOM Part 2.

In addition to the briefing requirement set out in Section 2 Chapter 4 paragraph 8, any periodic training for specialist teams shall include specific advice on the following:

- a) the dangers from main and tail rotors and from hot exhausts;
- b) the effects of sloping ground on blade tip clearance;
- c) the brace position to be adopted by an unsecured passenger in an emergency landing or ditching.

Chapter 2 Requirements for the Carriage of Certain Types of Passenger and of Animals

1 The Carriage of Medical Passengers

1.1 Terminology

a) Helicopter Emergency Medical Service (HEMS) flight

A flight by a helicopter operating under a HEMS approval, the purpose of which is to facilitate emergency medical assistance, where immediate and rapid transportation is essential, by carrying:

- i) Medical personnel; or
- ii) Medical supplies (equipment, blood, organs, drugs); or
- iii) Sick or injured persons and other persons directly involved.

The CAA is empowered to decide which police air operations require a HEMS approval issued in accordance with JAR-OPS 3.

b) Helicopter Air Ambulance Flight

A flight, usually planned in advance, the purpose of which is to facilitate medical assistance, where immediate and rapid transportation is not essential, by carrying:

- i) Medical personnel; or
- ii) Medical supplies (equipment, blood, organs, drugs); or
- iii) Sick or injured persons and other persons directly involved.

c) Casevac

A flight, the purpose of which, is to give immediate assistance to a sick or injured person in life threatening circumstances.

d) Medical Personnel

A medical person carried in a helicopter during a HEMS flight, including but not limited to doctors, nurses and paramedics.

1.2 General

Where an aircraft, operated on behalf of a police authority, provides a service under a HEMS approval to a health authority, it may undertake a HEMS flight, which shall be deemed to commence when a patient is taken on board.

There may be other times when a police aircraft finds itself in a position to give limited assistance such as Air Ambulance Flights or, in extreme situations, casevac – as defined in 1.1 c) above. These types of operation may only be undertaken as a measure of last resort when no other means of transportation is available (or suitable). Where Air Ambulance and/or Casevac flights are conducted for valuable consideration, then a CAT AOC is required to be held in accordance with ANO Article 6.

1.3 HEMS Flight

A police unit may not conduct a HEMS flight unless holding an approval, issued by the CAA. HEMS operations will be conducted in accordance with Appendix A to Section 5.

1.3.1 **HEMS Public Interest Site Operations**

Operations by a twin turbine powered helicopter with a maximum approved passenger seating configuration of six or less, conducting Police HEMS public interest operations to/from a public interest site which was established on or before 1st April 2001 and which is located in a hostile environment, may be conducted in accordance with the variations contained in Appendix B to Section 5 when approved by the CAA.

1.4 **Helicopter Air Ambulance Flight**

The aircraft commander is responsible for ensuring that the following instructions are carried out:

- a) As far as can be ascertained, the method of carriage does not aggravate the patient's condition.
- b) The police observer or medical attendant, if available, shall occupy a position from which he can monitor and assist the patient during the flight and inform the aircraft commander of any apparent deterioration in the patient's condition.

c) **Sitting Patients**

Patients who can sit shall occupy a passenger seat and, where practicable, be secured by a seat belt. The seat belt may remain loose except when the aircraft commander shall instruct the observer or medical attendant to tighten the belt when required for take-off, landing, flight in turbulence or during manoeuvres.

d) **Stretcher Patients**

A patient needing to be carried on a stretcher fitted to the aircraft shall, where his condition permits, be secured to the stretcher by belts or a harness in the manner laid down in the AFM.

e) **Weather and Operating Minima**

The weather and operating minima shall be those applicable to the carriage of passengers other than CAA-agreed passengers, as shown in Section 3, Appendix E or G, as appropriate.

1.5 **Casevac**

This type of operation is limited to the removal of a patient from the scene of an accident or incident under the conditions of 1.1 c) above.

- a) Where possible the conditions of 1.4 a) – d) above should be complied with.
- b) The weather and operating minima shall be those applicable to a HEMS Operator and shall be specified in the PAOM Part 2.

2 **Prisoners**

The carriage of prisoners should not be regarded as routine and special care should be given to their movement by air. A prisoner is still classed as a passenger and shall be afforded all the normal safety considerations.

The following procedures shall apply when carrying prisoners:

- a) the aircraft commander shall satisfy himself that there is no likelihood of the prisoner becoming so violent that the safety of the aircraft would be jeopardised. Whenever potentially violent prisoners are to be flown, they shall be carried one at a time and accompanied by sufficient escorts to restrain them should violence occur;

- b) when handcuffed, a prisoner's hands shall always be to the front, to allow the release of the seat belt in the event of an emergency landing;
- c) a prisoner shall be secured to the aircraft only by means of an approved seat belt used in the normal manner;
- d) at least two escorts shall accompany a prisoner and be seated in such a way that they can restrain him, while ensuring that he cannot reach the pilot or any of the aircraft flight controls or systems controls, or operate the exits;
- e) when a prisoner becomes violent, the aircraft shall be landed as soon as practicable and the prisoner moved by surface means. The prisoner shall not be moved again by air.

3 Persons Under the Influence of Drugs or Alcohol

The carriage of persons under the influence of drugs or alcohol should be avoided whenever possible because of the difficulty of accurately predicting their behaviour during flight. However, if there is no practicable alternative to movement by air, the following procedures shall be applied:

- a) the aircraft commander shall establish as far as is possible to what degree the individual is under the influence of the drugs or alcohol, the substances which have been taken and their likely effects;
- b) the aircraft commander shall determine, from the apparent physical and mental state of the individual, whether that person is fit to be carried in a normal seat or requires a stretcher. If any other form of restraint is considered necessary the individual shall not be carried by air;
- c) at least two escorts shall accompany the person in order to provide the necessary restraint and to aid his emergency evacuation, should the need arise;
- d) the aircraft commander shall ensure that a suitable receptacle is available for vomit;
- e) the aircraft commander shall land as soon as practicable if the individual shows any signs of becoming violent. Further movement of the individual should then be undertaken by surface means.

4 Physically or Mentally Handicapped Persons

When the pre-planned carriage by air of a physically or mentally handicapped person is conducted, that individual shall be accompanied by two persons, at least one of whom shall be properly qualified to care for the physically or mentally handicapped. In an emergency, where the rapid transportation of a physically or mentally handicapped person is necessary, the presence of properly qualified personnel is not required. The aircraft commander shall, however, ensure that proper control is exercised over such a passenger by utilising the police observer and another suitable individual.

The aircraft commander shall ensure compliance with the following procedure:

- a) any medical attendant accompanying the handicapped person receives a full safety briefing;
- b) a mentally handicapped person is not to be seated in such a way as would permit him to operate the emergency or normal exit opening mechanisms;

- c) a mentally handicapped person sits between the escorts;
- d) each person is properly seated and secured by means of a seat belt.

5 Bodies and Remains

The requirement to carry bodies or remains would normally be dictated by the inaccessible nature of the location where they are found, which precluded other methods of transport. The main considerations when undertaking the task are the health and hygiene of the aircraft occupants. The condition of the bodies or remains will determine how best they should be packed and carried, in accordance with the following guidelines:

- a) Bodies shall generally be carried inside the aircraft. However, if their condition is such that the interests of health and hygiene are better served by carriage outside a helicopter, the commander may do so provided:
 - i) the helicopter is equipped with either a winch or an underslung load hook, whose use is covered by provisions of the AFM; and
 - ii) the commander is currently qualified to carry out external load lifting according to the requirements set out in Chapter 6 or winching according to the requirements set out in the PAOM Part 2, which shall also list any special procedures to be followed; and
 - iii) the body or remains are securely contained within a coffin or heavy duty body bag.
 - iv) any passengers shall be CAA-agreed passengers only.

NOTE: Where the AFM does not approve the carriage of a load on the hoist or on the cargo hook during a public transport flight, the operator may apply to the CAA for consideration of a suitable AFM amendment.

- b) The carriage of bodies or remains inside an aircraft shall comply with the following procedures:
 - i) bodies and remains shall be placed securely in a body bag or coffin. Prior to being loaded onto the aircraft the integrity of the container shall be checked to ensure that it has not been damaged;
 - ii) the body bag or coffin shall be secured in accordance with normal loading instructions;
 - iii) after any spillage of body fluids has occurred, or any part of the body has come into contact with the aircraft, a thorough wash down of the area affected shall be carried out as soon as practicable with a suitable cleansing agent.

6 Police Dogs

6.1 Whenever possible, dogs shall be embarked or disembarked with the aircraft shut down. When this is not possible the following procedures shall be followed:

a) Embarkation

The observer shall meet the handler and dog clear of the aircraft in order to brief the handler on the following matters:

- i) the arc within which to approach the aircraft;
- ii) the order in which dog and handler may enter the aircraft;

- iii) the commander's 'thumbs up' signal to authorise entry into the aircraft;
- iv) the need for the handler to keep the dog under control on a short lead at all times, thus obviating the risk of the dog being able to interfere with the aircraft flight controls or systems controls.

b) Inside the Aircraft

- i) at no time shall the handler release the lead, which shall be kept as short as possible;
- ii) when properly seated, the handler shall secure his seat belt and put on a headset or helmet;
- iii) the aircraft commander shall make every effort to avoid large attitude changes which may disturb or alarm the dog;
- iv) if during the flight the dog becomes agitated or unwell the aircraft commander shall land as soon as practicable. He shall ensure that any vomit or other mess created by the dog is cleaned up and the area disinfected as soon as practicable.

NOTE: There is no requirement for the animal to lie down. Dogs are more at ease when able to see out of the window.

c) Disembarkation

- i) after landing, the dog and handler shall disembark from the aircraft when cleared to do so by the aircraft commander;
- ii) the aircraft commander shall ensure that the handler has been briefed that if the dog breaks free and moves towards the tail rotor of a helicopter or the propeller(s) of an aeroplane, the handler shall not attempt to follow. The handler shall clear the aircraft within an approved arc to the front and manoeuvre the dog to that position. If the dog does not respond and poses a threat to the aircraft, the handler shall signal the aircraft commander to close down by using the 'cut engines' signal. (Either arm and hand placed level with the chest then moved laterally with the palm downwards);
- iii) when the dog and handler have moved clear, the commander of a helicopter shall take-off as soon as possible in order to allow the handler and the dog to start their task expeditiously;
- iv) the handler shall not normally unleash the dog until well clear of the aeroplane or until the helicopter has taken-off.

6.2 The operator shall set out in the PAOM Part 2 any additional or type-specific guidance that he may consider necessary.

Chapter 3 Weapons and Munitions on Normal and Special Operations

A ground commander may derive great benefit from the ability of armed officers, or a firearms unit, to fly on either normal or special operations directly to the scene of an incident. When such equipment is to be carried, the overriding consideration shall be the elimination of danger to the aircraft, its occupants and persons and property on the ground.

The types and quantities of weapons and munitions that may be carried shall be determined by agreement between the operator and the CAA Dangerous Goods Office (See contact information in CAP 613) and set out in instructions within the PAOM Part 2. Where the police consider it necessary for the sake of saving life, the quantities of weapons and munitions to be carried may exceed the approved maxima but the aircraft commander shall be informed accordingly. In such circumstances the operator shall inform the CAA Dangerous Goods Office, not later than 48 hours after the event, of the total quantity of weapons and munitions that were actually carried.

NOTE: Munitions include gas/smoke canisters, stun grenades, shotgun cartridges and ammunition for rifles and side-arms.

The aircraft commander, by observation or by confirmation from the officer in charge of the police unit or the senior passenger, shall satisfy himself that all weapons and munitions that are placed on board the aircraft, whether retained by a passenger or stowed in the hold, consist only of those types and quantities which, in accordance with instructions within the PAOM Part 2, are permitted to be carried.

Where loaded weapons are to be carried, the aircraft commander shall further satisfy himself that they are in a safe condition, as described in Table 15 below:

Table 15 Loaded Weapons - Safe Conditions

Weapon	Safe Condition
Self-loading pistol, self-loading rifle, carbine, automatic shotgun or pump action shotgun, bolt action rifle, automatic rifle.	Working parts forward and trigger released; safety catch applied where possible; magazine charged with ammunition and fitted to the weapon; NO ROUND IN THE BREACH
Revolver	Cylinder loaded with ammunition; weapon in a secure holster, which prevents accidental discharge.

1 Loaded Weapons – Conditions of Carriage and Operation

- a) Aircraft operating in accordance with a PAOC shall not carry the following weapons in a loaded state:
 - i) double-barrelled shotgun;
 - ii) single-barrelled shotgun (unless automatic or pump action);
 - iii) baton gun;
 - iv) CS discharger;
 - v) dart gun.

- b) The loading or unloading of a weapon on an aircraft shall not be permitted.
- c) THE FIRING OF A WEAPON OR THE LAUNCHING OF ANY MUNITIONS FROM AN AIRCRAFT SHALL NOT BE PERMITTED.

2 Carriage of Weapons and Munitions – Normal Operations

Where all passengers are securely seated throughout the flight, the following constraints shall apply:

- a) loaded weapons shall be in a safe condition;
- b) weapons and munitions shall be carried in holds, compartments, or in other areas designated by the CAA, that are inaccessible in flight, and secured in accordance with normal loading instructions;
- c) neither weapons nor munitions shall be distributed among passengers until the aircraft has landed at the operational destination.

3 Carriage of Weapons and Munitions – Special Operations

3.1 When it is necessary for passengers on a special operation to be in possession of weapons and/or when passengers need to deploy rapidly from the aircraft, hand weapons and spare ammunition for these may be carried in readily accessible boxes or the passengers may carry the hand weapons in holsters and the ammunition in pockets; rifles and shotguns may be stowed securely within the cabin and spare ammunition for these may be carried by passengers in body belts or readily accessible boxes. Gas/smoke canisters shall be in boxes but these may be readily accessible. Boxes shall be strongly constructed, fire resistant and labelled with an 'explosives' label. Planning for such an operation shall normally include the following:

- a) the aircraft commander shall attend a full planning meeting in order to discuss the exact role of the aircraft and to offer specialist advice;
- b) all participants shall attend a final briefing. A dry rehearsal, with engines stopped, shall take place in order to establish the viability of the plan and to resolve any identified problems.

3.2 Exceptionally where the aircraft commander judges that the urgency of the police operation precludes spending time on perfecting preparations, he may decide to dispense with the above procedures but he shall always adhere to the following:

- a) prior to the passengers entering the aircraft, the commander shall ensure, by observation or by confirmation from the officer in charge of the unit, that all weapons and munitions carried on board are in a safe condition;
- b) all weapons and munitions shall be contained in holsters, body belts or secured safely; gas/smoke canisters may be carried by passengers but shall be carried in such a manner as to prevent accidental activation;
- c) wherever possible, passengers shall board an aircraft with engines stopped;
- d) passengers shall be securely seated in the normal way unless operational considerations dictate otherwise. However, where in the judgement of the aircraft commander, safety considerations outweigh operational necessity, police officers shall be securely seated during flight;

- e) where passengers are not secured in passenger seats, they shall be positioned in a way that would afford them maximum protection, while not impeding egress, in the event of an emergency landing;
- f) cabin doors shall be securely closed before take-off and should normally remain closed during flight. The cabin doors may only be opened when authorised by the aircraft commander, either after landing or before hover emplaning/deplaning.

Chapter 4 Dangerous Goods

1 Permitted Dangerous Goods

The following listed dangerous goods may be carried in an aircraft:

- a) batteries (wet cell or lithium) installed in airborne equipment, gas cylinders, drugs and medicines;

NOTE: Dry batteries, such as those made from nickel cadmium (Nicad), are not classified as dangerous goods. Spare wet cell or lithium batteries shall not be carried in the aircraft.

- b) explosives, which are restricted to explosives blasting (i.e.: 'plastic explosives'), detonators, detonating cord, safety fuse and lighters fuse, carried by bomb disposal personnel, for lifesaving purposes or for other special operations;
- c) pyrotechnic components of air-droppable location markers;
- d) kerosene or motor spirit (including petrol);
- e) CS Spray canisters;
- f) any other items classified as dangerous goods, with the written permission of the CAA.

2 Dangerous Goods – Conditions of Carriage

- a) any gas cylinders carried in flight shall have been manufactured for the purpose of containing and transporting gases;
- b) personal issue CS Spray canisters shall not be carried except where a Permission for the Carriage of Munitions of War and Dangerous Goods has been granted by the CAA. They shall be stowed in a securely closed and labelled container approved by the CAA for that purpose, except that where the commander judges the situation to be urgent they may be carried by the constable. Transfer of the CS Spray canister to and from the container shall take place outside the aircraft;
- c) any container of kerosene or motor spirit shall have been manufactured for the purpose and marked to indicate the contents or bear a 'flammable liquid' label. The quantity of kerosene or motor spirit that may be carried shall not exceed 25 litres (5.5 gallons) per container;
- d) smoking shall not be permitted on an aircraft when a gas cylinder is in use or when kerosene or motor spirit is being carried;
- e) drugs and medicines carried in an aircraft, other than the contents of the aircraft first aid kit, shall be under the control of suitably trained medical personnel or be in secure containers;
- f) the total quantity of location markers carried in an aircraft shall not exceed six. When not in use, they shall be stowed in boxes which are strongly constructed, fire resistant and labelled with an 'explosives' label;
- g) the explosives shall be stowed at all times, whilst on the aircraft, in containers which have been designed for the transport of the explosives (such as steel boxes), which shall be labelled with an 'explosives' label. The explosives shall be under the control of bomb disposal personnel and the aircraft commander shall ascertain the nature and quantity of what is to be carried.

3 Occurrences Involving the Carriage of Weapons Munitions or Dangerous Goods

- 3.1 Any incident related to the carriage of weapons, munitions or dangerous goods is reportable as an occurrence. An aircraft commander should note that the carriage of dangerous goods may give rise to the possibility of a fire, leakage or spillage. While exercising his judgement in the precise circumstances, he should invariably give early consideration to landing as soon as is practicable because such events may be handled more expeditiously on the ground.
- 3.2 It is most unlikely that correctly packed and secured dangerous goods would themselves cause a fire but, if they should ever do so, standard aircraft fire drills should be carried out. However, a fire that flares for any reason may threaten an explosion in a load of ammunition, gas cylinders, pyrotechnics, kerosene containers or tear gas canisters. Hence, where the situation permits, dangerous goods should be moved away from the vicinity of a fire. In an extreme situation where an immediate landing is not possible, an aircraft commander should consider jettisoning the dangerous goods when to do so would not jeopardise the safety of the aircraft or of persons and property on the ground.
- 3.3 Wet cell batteries, kerosene and motor spirit containers might leak or spill their contents in flight. Skin contact with any leakage or spillage should be avoided, as should treatment with water – which is likely to hasten the spread of contamination or produce an undesirable reaction. The escape of kerosene or motor spirit should be contained as far as possible through the use of any material, such as cotton or paper, that may be available. However, leakage or spillage from a wet cell battery should on no account be staunched because of the danger of chemical reaction and acid contamination; instead expert assistance should be sought to treat the affected area once the aircraft is safely on the ground.
- 3.4 The aircraft commander shall complete a report in the technical log in the event of spillage or leakage of dangerous goods within his aircraft.

4 Aircraft Emergency During Flight Involving the Carriage of Weapons, Munitions or Dangerous Goods

- a) The aircraft commander shall ensure that the force control room, or other designated co-ordination agency, is informed of the aircraft's load of weapons, munitions and dangerous goods, particularly gas cylinders and bomb disposal equipment, before each flight, or series of flights, in order that ground emergency services may be advised of the hazards that may be encountered at the scene of a subsequent aircraft incident;
- b) on declaring an emergency, the aircraft commander should, where possible, inform the appropriate air traffic service unit of the aircraft's load of weapons, munitions and dangerous goods, with a view to protecting the safety of any ground personnel, alerted by the unit, who attend the scene of an aircraft incident;
- c) prior to an emergency landing, if time permits, the aircraft commander shall ensure that all weapons are securely stowed, hand weapons in holsters where possible;
- d) should an aircraft carrying weapons or munitions or dangerous goods make an emergency landing on an aerodrome, the aircraft commander shall inform the aerodrome security agency of such weapons or munitions or dangerous goods.

Chapter 5 Hover Emplaning and Deplaning

Resources will occasionally need to be deployed at a location where it may not be possible to land. In such situations, persons, dogs and equipment may enter or leave a helicopter in the hover, provided that the aircraft commander adheres to the instructions set out below.

The overriding requirement is that there shall be no danger to third parties and minimal risk to the aircraft, crew, seated passengers and those carrying out the activity. The major consideration is engine failure, in the event of which the ensuing landing should not result in major damage. However, the full set of precautions contained in this chapter is intended to reduce the risk of such damage to an acceptable level for CAA-agreed passengers, who shall be the only passengers permitted to be on board or to vacate or to enter a helicopter during hover emplaning and deplaning. Either a single-engined or a multi-engined helicopter may be utilised, by day.

1 Responsibilities of the Aircraft Commander

The responsibilities of an aircraft commander in regard to hover emplaning or deplaning shall be as follows:

1.1 Planning

- a) to confirm that persons or animals cannot be landed conventionally at a point sufficiently close to the location of the planned police task;
- b) to ascertain that a hover at a height of at least 4 ft can be established and maintained at the site in question, taking into account the elevation and ambient temperature. To provide a power margin for handling purposes, the maximum weight of the helicopter shall be not greater than 95% of the maximum permitted weight calculated from the relevant AFM graph;
- c) to note that the engine(s) power rating to be used in assessing the hover performance requirement shall be take-off power. However, where the time spent in the hover is expected to exceed the time limit for take-off power, the maximum continuous power rating shall be used instead;
- d) to ensure that the helicopter shall remain within centre of gravity limits at all times. This requirement becomes significant in regard to hover deplaning, especially from aircraft fitted with skids, when it may be possible to exceed lateral limits when a person applies weight to a skid during entry or exit;
- e) to ensure that the cabin exit door(s) has been removed, or confirm that, if it is a sliding door, it may be opened in flight. An exit with a hinged door shall not be used.

1.2 Briefing

- a) to ensure that all passengers are briefed on the normal and emergency aspects of the operation;
- b) to ensure that all persons intending to deplane or emplane are briefed and, where possible, rehearsed for the activity. If necessary, the briefing may be undertaken by the police observer, outside the helicopter, at the emplanement site;
- c) to ensure that the sequence of emplaning and deplaning, and any limitations on the number of persons who may occupy the exit/entry position at any one time, comply with the instructions that shall have been set out in the PAOM Part 2;

- d) to remind passengers that, owing to the hazard presented by the main rotor, they should not jump upwards during deplaning;
- e) to advise passengers to land on both feet and then to move clear of the rotor disc in the pre-briefed direction;
- f) to advise emplaning passengers:
 - i) not to approach the helicopter beneath the rotor disc until cleared to do so by a 'thumbs-up' signal from the aircraft;
 - ii) to transfer weight from ground to helicopter in a smooth and progressive manner.

1.3 **Seating/Doors**

- a) in transit, unless on a special operation, to ensure that all passengers are seated and secured, with doors closed where possible;
- b) to ensure that AFM limitations are observed in regard to the opening and closing of doors, and in respect of flight with doors open or removed.

1.4 **Reconnaissance**

To make a detailed reconnaissance of the intended drop point in order to satisfy himself that the following criteria can be met:

- a) the slope and nature of the terrain raise no doubts in his mind that the helicopter would be able to remain upright after a forced landing;
- b) no moving parts, such as main or tail rotors, would be brought into close proximity with any objects or terrain features that, on contact, could cause substantial damage to the helicopter or lead to loss of control. Such objects might include non-frangible structures, vehicles, or vessels. Such terrain features might include trees or rocky outcrops;
- c) as helicopters are susceptible to drawing objects into the rotor, either from surrounding trees or structures, to ensure that any object appearing to present a hazard shall be avoided by at least half a rotor span;
- d) to ensure positive directional control, he hovers on a heading that avoids a relative wind from astern the beam of the aircraft;
- e) no persons on the ground are within 1½ rotor diameters or 50 ft of the helicopter (whichever distance is the greater), except those who have just disembarked from the helicopter, or those who the commander reasonably believes are intending to embark into the helicopter, or those directly concerned with controlling the hover emplaning or hover deplaning operation from the ground.

1.5 **Deplaning**

- a) to establish and maintain a steady hover at a height from which the maximum drop to the ground for persons or animals shall be 4 ft;
- b) to authorise the opening of the doors, where applicable, once the hover has been established;
- c) to ensure that no passenger unstraps before being signalled to deplane by the police observer.

1.6 **Clearing the Site**

To depart from the site as soon as all the deplaned passengers have moved clear of the helicopter and, where possible, the doors have been closed.

1.7 **Emplaning**

- a) to establish a hover at a maximum height of 2 ft for boarding persons or animals to climb. One aircraft wheel or skid should be in contact with the ground, in order to disperse static electricity. Where it is impracticable to earth the helicopter in this way, a CAA-approved, weighted earthing wire shall be lowered to the ground before emplaning begins;
- b) to ensure that, as passengers embark, one is seated before the next clammers on board;
- c) to ensure that all persons are strapped in their seats and the doors have been closed, where possible, before departure.

2 **Supplementary Requirements for Night Operations**

Hover emplaning and deplaning shall normally be carried out only in daylight. Should it become necessary to do so in darkness, the following requirements shall be met in addition to those in paragraphs 1.1 to 1.7 above:

- a) the helicopter shall be multi-engined;
- b) the site shall at least meet the ad hoc site criteria set out in Section 2 Chapter 8 paragraph 3.2.5;
- c) the aircraft commander shall use the helicopter's external lights to the extent necessary for him to establish and maintain the required height in the hover;
- d) the aircraft commander shall use the landing light to flash the signal for persons on the ground to approach the helicopter.

Chapter 6 Carriage of Underslung Loads and Use of Hoists

1 Flight with Underslung Loads

Helicopter flights with underslung loads shall be conducted in accordance with the following criteria:

a) **Pilot**

The pilot shall hold a current certificate of special operational competency, endorsed for the carriage of underslung loads (See Part D);

b) **Loadmaster (Observer)**

A police observer may act as loadmaster, if required, provided that he has been suitably trained and successfully tested on a Special Operations Check (See Part D);

c) **Aircraft**

The aircraft shall be fully equipped and certificated for carrying underslung loads;

d) **Nets and Strops**

i) nets and strops to be used shall have been manufactured to CAA-approved standards for underslung load operations;

ii) they shall have been checked and tested for serviceability prior to use by a person nominated by the operator for carrying out such checks and inspections. Should any doubt exist as to the structural integrity of the strop or net, the item shall not be used until it has been inspected and if necessary repaired by the item manufacturer or a qualified engineer.

iii) the placarded maximum gross load for the strop and net to be used shall not be less than the known weight of the load to be carried. Where the weight of the load has not been accurately determined, a strop and net with a placarded weight twice that of the estimated weight of the load shall be used.

e) **Load**

The Dangerous Goods Regulations apply equally to items carried as underslung loads as they do to internal loads. Flying qualities will vary from load to load, those that are rounded and heavy behaving more sedately than those that are light but slab-sided. Instability may occur, in which event the aircraft commander may benefit from taking action as follows:

i) Fore and aft movement

Where the load becomes unstable in the pitching plane, flare gently to dampen out the oscillations.

ii) Side to side movement

Where the load swings laterally, induce positive g by banking into a gentle turn.

Thereafter airspeed should be reduced to prevent the problem recurring. The optimum airspeed may be found by experiment.

1.1 **Conduct of Underslung Load Operations**

The safe and successful completion of an underslung load operation requires full preparation and planning of the task, particularly when such an operation is not regularly carried out.

1.2 **Operator's Responsibilities**

The operator shall ensure that the following resources are available, as required:

- a) if no mirror is fitted for the purpose of allowing the pilot himself to monitor the load, a suitably trained loadmaster, who may be a police observer, shall be carried in the helicopter to assist with positioning the load and monitoring its behaviour in flight;
- b) a hook-up man, fully briefed in regard to the signals or communications to be used, shall attend to attach any load to a hovering helicopter. Similarly, another such person may be required at the drop-off point;
- c) a protective helmet, with chin strap secured, shall be worn at all times by ground personnel when conducting underslung load operations. Depending on the terrain or weather conditions, ground personnel may also be required to wear gloves, goggles and protective clothing to prevent injury from grit, ice or other debris.

1.3 **Responsibilities of an Aircraft Commander**

- a) to complete the normal flight planning requirements set out in Section 2 Chapter 1 paragraph 3;
- b) to select load pick-up and drop-off points so as to obviate danger to third parties or property on the ground and also to allow clear areas for the approach and climbout, in the event of a load being jettisoned either deliberately or inadvertently;
- c) to avoid overflying any congested areas;
- d) to choose a route that minimises noise and nuisance as well as avoiding danger to persons and property.

1.4 **Performance**

1.4.1 The gross weight of a helicopter and its load, when engaged in underslung load operations, shall not exceed the maximum weight at which hover outside ground effect (OGE) is possible, as determined from the AFM.

1.4.2 A pilot shall allow an increased power margin for safety when operating in hot and high or turbulent conditions. It is recommended that the following equation be applied:

Establish:

- a) the gross weight hover inside ground effect (IGE);
- b) the gross weight hover OGE.

Divide the difference between a) and b) by 2 and add the figure to b).

The maximum gross weight with underslung load shall be 95% of this figure.

1.5 **Communications**

1.5.1 The aircraft commander, loadmaster and ground personnel shall agree beforehand the method whereby instructions may be passed between them. Radio communications shall be tested prior to commencing underslung load lifting. Marshalling signals, as set out in Rule 48 of the Rules of the Air Regulations 1996, may be used as the primary method of communications or as a backup to the radio.

If they are to be used, suitable illustrations as depicted in CAP 393 shall be set out in the PAOM Part 2.

- 1.5.2 The aircraft commander shall brief the loadmaster on an alternative means of communication in the event of intercom failure.

1.6 **Role Checks**

- a) Prior to flight, a full serviceability check shall be carried out of the underslung load hook normal, emergency and manual releases;
- b) the aircraft load monitoring mirror shall be checked and adjusted prior to flight;
- c) the aircraft commander shall ensure that the weight of the load has been accurately established where possible, that the load is secure and that it is safe to fly.

1.7 **Passengers**

Only those persons with duties to perform in connection with the load shall be on board the helicopter during flight.

1.8 **Emergencies**

a) **Load Jettisoning**

Deliberate load jettisoning shall only be carried out in an emergency, the load being dropped in an open area away from persons or property.

b) **Engine Failure in the Hover**

Persons operating beneath the helicopter during load hookup or release shall be clearly briefed on which way to move in the event of engine failure in the hover, following agreement with the aircraft commander on the direction in which he would manoeuvre the helicopter.

2 Use of Hoists

- 2.1 When raising or lowering persons by means external to the helicopter, such as a hoist, the aircraft commander shall observe the associated limitations contained in the AFM.
- 2.2 No person or article shall be lowered from a helicopter in flight except by means of an apparatus approved for that purpose by the CAA.
- 2.3 An operator who intends to undertake the specialised technique of winching is advised to contact the CAA for further guidance.

Chapter 7 Dropping of Articles

Articles such as message containers, smoke generators, or unbreakable lightweight equipment may be dropped from an aircraft, provided that no danger exists to third parties. The article shall be ejected cleanly so as to obviate the risk of it striking or fouling the airframe: in some aircraft configurations it may be necessary either to remove a door or utilise a sliding door. The objective of the drop will be to deliver the article to the ground accurately. In practice the effectiveness of the exercise will depend on the location, terrain, nature of the article and the aiming procedure. Only trained police observers or other trained persons as agreed with the CAA, are permitted to drop articles from an aircraft.

1 Constraints on the Dropping of Articles

1.1 All Aircraft

- a) The area into which the article is to be dropped shall be, in the judgement of the aircraft commander, large enough to compensate for the increased likelihood of aiming error due to aircraft motion;
- b) the dropping area shall be clear of all persons and any ground features such as trees, structures, or long grass that might conceal the presence of any person;
- c) when dropped, the article should be sufficiently heavy, or securely weighted if necessary, to obviate the possibility that the slipstream could dash it against the airframe or engines or carry it into the main or tail rotors of a helicopter;
- d) the aircraft commander shall plan to drop the article while heading into wind, at the best combination of low height and low ground speed, to achieve the greatest aiming accuracy consistent with the safety considerations implicit in the possibility of an engine failure;
- e) the aircraft commander shall issue instructions to the observer, or other trained person, for the dropping of any article. Subsequently the article shall be dropped only in accordance with those instructions, as soon as the commander gives the executive order. To prevent the article from landing outside the safe area identified by the pilot, it shall not be released in forward flight if, for any reason, the drop does not occur immediately after that order has been issued.

1.2 Aeroplanes

The operator shall set out in the PAOM Part 2 the airframe configuration and ranges of speed and height to be adopted for the dropping of any article.

1.3 Helicopters

- a) No article shall be dropped direct from a hovering helicopter to a person other than for life-saving purposes. The noise and down draught create risks to anyone directly underneath, outweighing the operational advantages of a direct drop;
- b) the helicopter should ideally be established in the hover before any object is dropped. However, some measure of forward airspeed, not exceeding 40 kt IAS (owing to the risk of striking the tail rotor) is permitted, if required for operational reasons.

NOTE: It may occasionally prove more effective to hover deplane a person who is carrying the article rather than to drop it on its own.

2 Smoke Generators – Special Considerations

- 2.1 A smoke generator shall be activated only when held outside the aircraft in a manner that would cause the object to fall clear, if accidentally dropped.
- 2.2 A smoke generator that fails to ignite shall not be brought back into the aircraft but dropped immediately. The aircraft commander shall note and report the location of the release as soon as possible, to enable the smoke generator to be retrieved or destroyed by a competent agency.
- 2.3 Only smoke generators of a type approved by the CAA for carriage in aircraft shall be used.

3 Message Containers

A message container shall be constructed to meet the following specification:

- a) composed of lightweight, non-breakable material;
- b) capable of floating in water and watertight;
- c) simple to open, with clear opening instructions;
- d) conspicuous appearance;
- e) fitted with a brightly coloured streamer, sufficiently long to be visible when falling to the ground but short enough to obviate the risk of becoming wrapped around tail rotor or empennage;
- f) emblazoned with the words 'Police Message' and bearing instructions on what action any finder should take.

Chapter 8 Formation Flying

Flying in formation with another flying machine requires the greatest caution. The fact that the pilot of the other flying machine may not be aware of the police aircraft's intentions, and might not even wish to be identified, implies that the activity shall not be regarded as close formation flying. The shortest possible time shall be spent at the minimum permitted distance from the other flying machine. Should shadowing the other flying machine subsequently become necessary, it shall be conducted from the maximum range consistent with obtaining photographic, or other evidence, and maintaining visual contact.

At no time shall the police aircraft be flown in such a manner as to endanger the other flying machine nor shall the police aircraft attempt to force the other flying machine to alter height or heading, or to land. The police aircraft shall maintain sufficient separation from the other flying machine that would enable the police pilot to take safe avoiding action if the other flying machine attempts to endanger him. Should this situation arise, the police aircraft shall ensure that a safe separation distance is maintained, regardless of the need for obtaining evidence. The carriage of passengers during formation flying shall be restricted to CAA-agreed passengers.

1 Limitations

- a) Formation Flying shall not be permitted at night, or in cloud, or when weather conditions are below the following minima:

Cloud base	500 ft
Visibility	3 km

- b) Depending on the circumstances, the police aircraft should try to establish RT contact with the target flying machine. Where this is achieved, the police aircraft should advise the target of the police requests and intentions.
- c) If RT contact is not established with the target, the police aircraft shall carry out the following procedure:
- approach while the target is in straight flight, which may be level, or climbing, or descending. There shall be no attempt to move into station on the target while it is turning, taking-off or landing;
 - establish a stand-off position behind the target, in the 4 o'clock to 8 o'clock sector, not closer than 200 m;
 - when settled in the stand-off position, range from the target may be reduced slowly and progressively to 100 m minimum, while remaining in the 4 o'clock to 8 o'clock sector;
 - move out to at least 200 m range as soon as the required evidence of registration, type identification and other visible features, have been noted;
 - if the police aircraft needs to overtake the target aircraft, the police aircraft should alter heading so as to overtake the target aircraft on the latter's right, keeping well clear of it at all times;
 - remain VMC at all times. On no account shall the target be followed into cloud.

Chapter 9 Powerful Searchlights, Airborne Public Address Systems and Forward Looking Infra-Red (FLIR) Equipment

1 General

Powerful searchlights of the 'Nite Sun' type, public address systems (usually known as 'Skyshout') and FLIR equipment are commonly used on police helicopters. Since the airframe location of such equipment varies between helicopter types and occasionally between individual examples of the same type, and operating procedures vary similarly, it is not practicable to give common guidance on the use of such equipment. Consequently, operators shall set out in the PAOM Part 2 instructions on the operating techniques and the training and testing for such equipment. The testing shall normally be accomplished during the night line check.

2 AFM Limitations

The operating techniques shall comply with any AFM limitations and instructions in the PAOM Part 2 and shall draw attention to any associated hazards. Where the AFM does not approve the use of any item of role equipment during a public transport flight, the operator may apply to the CAA for consideration of a suitable AFM amendment. This may restrict the carriage of passengers to those agreed by the CAA.

Chapter 10 Guidelines for Landing of Helicopters on Roads

Whilst the safety of a helicopter and its passengers remains the responsibility of the pilot in command the police have overall responsibility for scene management at all land based incidents and on roads particularly in respect of the control and safety of all road users.

The aim of these guidelines is to permit helicopter-borne emergency services to fulfil their function with due regard to maintaining a realistic balance of safety.

1 Definitions

a) Roads

A road is a highway (including motorways and dual carriageways) and any other road to which the public has access and includes bridges over which a road passes.

b) Secure

An area where entry by vehicles and persons is prevented and in which the pilot can land safely at his discretion.

c) Congested Areas

In relation to a city, town or settlement, means any area which is substantially used for residential, industrial, commercial or recreational purposes.

2 Guidelines

Helicopters will not land on a road unless the following requirements can be complied with:

- a) Whenever possible the helicopter shall first land adjacent to the road.
- b) Where a landing is made on a road it must first be secured by the police (the only exceptions to this are listed in paragraph 2 f)).
- c) Prior to landing on the road, radio or verbal communication must have taken place with the police (via the other emergency services, Rescue Co-ordination Centres (RCC) or Air Traffic Control (ATC), where necessary) to confirm the road is secure and the pilot has authority to exercise his discretion to land.
- d) Minimum amount of time shall be spent on the road by the helicopter sufficient to fulfil its emergency function.
- e) On a motorway, dual carriageway or two-way road, when the helicopter is landing and taking-off, the unaffected carriageway should be closed at all times.
- f) A helicopter may only land on a road at an unsecured site where the police are not in attendance when all the following criteria are met.
 - i) The road shall be in remote rural areas outside congested areas.
 - ii) There shall be no threat to persons or vehicles on the ground from the helicopter or its associated presence.
 - iii) The pilot must satisfy himself that there is no danger to the aircraft from persons or vehicles on the road.

- iv) Only in very exceptional circumstances will this apply to motorways and dual carriageways and then only where criteria set out at Appendix A can be fully complied with.
- v) This action may be exercised only when no alternative is available.
- vi) Pilots should avoid landing in school or other play grounds or areas where children might be confined or suddenly emerge. The practice of using the aircraft presence or public address system to clear children from a site should not be utilised. Pilots should find an alternative site.

3 Additional Considerations

a) Communication

The Home Office has made available C89 UHF to non police aircraft operators subject to the approval of the Chief Constable in whose Force area the aircraft is operating.

NOTE: This must include all Forces in which the aircraft may operate and use the frequency and not just where the aircraft is based.

b) Preservation of Evidence

Police officers at the scene and pilots of helicopters must be aware of the effect of rotor downwash on loose articles and debris. This is of particular importance where such articles are crucial evidence and may require further scientific or forensic examination. The preservation of such evidence either in situ or following removal to a safe location must be taken into consideration by police officers at the scene before an aircraft lands.

c) Noise Levels

Police officers and other emergency service personnel must be aware that helicopters generate substantial noise, particularly during landing and take-off and that verbal communication (either personal or radio) may well be affected.

d) Danger from Glass

Pilots and emergency service personnel are reminded of the danger of rotor downwash dislodging broken glass and other loose debris, particularly from damaged buildings, at bomb scene incidents.

e) Emergency Service Vehicles

Police officers in charge at a scene should be mindful that Emergency Service vehicles need to position in close proximity to the incident, particularly the Fire and Ambulance Services, and to be aware that hoses and ancillary equipment (including lighting) could well be affected by rotor downwash. Access to the scene should therefore not be obstructed by the helicopter.

- f) The CAA will set the requirements for recording landings made by civil aircraft on roads.

4 General Safety

Emergency Service personnel must be made aware of the dangers of working with helicopters. This should include:

- a) Rotor downwash and associated flying debris;
- b) Main and tail rotor blades;
- c) Hot exhausts and jet efflux;
- d) Noise;
- e) Effects of sloping ground.

Where an ANO 5.1 b) exemption is granted to the operator the Police Service must be made fully aware of the requirements contained in the exemption and any implications for the emergency services.

Supplement to Chapter 10

Landing at a Site on a Dual Carriageway or Motorway Which has not Been Secured

Guidance to Pilots

A landing shall only be made on a dual carriageway or motorway during daylight hours when all the following criteria can be met. No landing shall ever be made by night.

- a) The helicopter shall only remain on the ground for the minimum time needed to disembark passengers and then go airborne again, until the site is secure. The aircraft shall not be shut down or loiter on the ground.
- b) The carriageway is blocked and all traffic on the affected carriageway is stopped and unable to proceed along the carriageway or on a normal road.
- c) Any reduction of visibility at ground level, due to mist, precipitation, spray, smoke or other effects shall be taken into account to ensure the helicopter can see and be seen in order to avoid any risk of collision with persons, vehicles or structures.
- d) The chosen site must be such as to ensure that the effects of rotor downwash do not blow around, even light debris, at the scene. This should include grit, spilt fuel and large masses of dust or sand. Pilots shall be given minimum distance from a scene which will prevent such disturbance which must allow for the effects of wind and reasonable margins for error in distance judgement.
- e) Great caution should be taken during approach, landing and take-off, to monitor the road and its surrounds to ensure previously unseen hazards do not suddenly appear which may create a danger to themselves in the aircraft.
- f) Whilst this is not a comprehensive list, it identifies areas which, if addressed, will minimise risk. It may be expanded under locally agreed procedures developed by the emergency services and set out in the operator's Flight Operations Manual. This list of criteria must not be reduced.
- g) The pilot must ensure that all reasonable efforts are made to inform the police control room of his intention to land at an unsecured site. This may be done through his own operational controlling agency. Unless locally required, no approval is required to carry out the landing.

Appendix A Helicopter Emergency Medical Service

This Appendix does not apply to helicopter air ambulance or search and rescue operations.

NOTE: The CAA is empowered to decide which operation is a HEMS operation in the sense of this Appendix and which is Helicopter Search and Rescue or Helicopter Air Ambulance. A Helicopter Air Ambulance operation is considered to be a normal Commercial Air Transport operation and therefore the contents of this Appendix do not apply to such activity. Helicopter Search and Rescue Operations, being classified as Aerial Work, are not governed by JAR-OPS Part 3.

1 Terminology

- 1.1 **D.** The largest dimension of the helicopter when the rotors are turning.
- 1.2 **Ground emergency service personnel.** Any ground emergency service personnel (such as policemen, firemen, etc.) involved with HEMS and whose tasks are to any extent pertinent to helicopter operations.
- 1.3 **Helicopter air ambulance flight.** A flight, usually planned in advance, the purpose of which is to facilitate medical assistance, where immediate and rapid transportation is not essential, by carrying:
 - a) Medical personnel; or
 - b) Medical supplies (equipment, blood, organs, drugs); or
 - c) Ill or injured persons and other persons directly involved.
- 1.4 **HEMS crew member.** A person who is assigned to a HEMS flight for the purpose of attending to any person in need of medical assistance carried in the helicopter and assisting the pilot during the mission. This person is subject to specific training as detailed in sub-paragraph 5.2 below. In the case of Police operations, these duties can be split between the Police Observer and the Medical passenger. In this case the Medical passenger will address the requirement of paragraphs 5.2 d) and l).
- 1.5 **Helicopter Emergency Medical Service (HEMS) flight.** A flight by a helicopter operating under a HEMS approval, the purpose of which is to facilitate emergency medical assistance, where immediate and rapid transportation is essential, by carrying:
 - a) Medical personnel; or
 - b) Medical supplies (equipment, blood, organs, drugs); or
 - c) Ill or injured persons and other persons directly involved.
- 1.6 **HEMS operating base.** A heliport at which the HEMS crew members and the HEMS helicopter may be on stand-by for HEMS operations.
- 1.7 **HEMS operating site.** A site selected by the commander during a HEMS flight for landing and take-off.
- 1.8 **Helicopter search and rescue flight.** A flight, the purpose of which, is to give immediate assistance to persons threatened by grave and imminent danger, or hostile environment.
- 1.9 Hostile Environment
 - a) An environment in which:

- i) A safe forced landing cannot be accomplished because the surface is inadequate; or
 - ii) The helicopter occupants cannot be adequately protected from the elements; or
 - iii) Search and rescue response/capability is not provided consistent with anticipated exposure; or
 - iv) There is an unacceptable risk of endangering persons or property on the ground;
- b) In any case, the following areas shall be considered hostile:
- i) For overwater operations, the open sea areas North of 45N and South of 45S designated by the Authority of the State concerned; and
 - ii) Those parts of a congested area without adequate safe forced landing areas.
- 1.10 **Medical Passenger.** A medical person carried in a helicopter during a HEMS flight, including but not limited to doctors, nurses and paramedics. This passenger shall receive a briefing as detailed in sub-paragraph 5.3 below.
- 1.11 **Non-hostile Environment**
- a) An environment in which:
 - i) A safe forced landing can be accomplished; and
 - ii) The helicopter occupants can be protected from the elements; and
 - iii) Search and rescue response/capability is provided consistent with the anticipated exposure;
 - b) In any case, those parts of a congested area with adequate safe forced landing areas shall be considered non-hostile.

2 Operations Manual

An operator must ensure that the PAOM Part 2 includes a supplement specifying operational considerations specific to HEMS operations. Relevant extracts from the PAOM Part 2 shall be made available to the organisation for which the HEMS is being provided.

3 Operating Requirements

3.1 The Helicopter

Performance Group B operations shall not be conducted over a hostile environment.

3.2 Performance Requirements

a) Take-off and Landing – Helicopters with a MTOM of 5700 kg or less

- i) Helicopters conducting operations to/from a heliport at a hospital which is located in a hostile environment, shall be operated in accordance with Group A except that helicopters first issued with an individual C of A before 1 January 2000 may be operated in accordance with Group A Restricted until 31 December 2004, provided the operator has been granted a relevant approval by the CAA.
- ii) Helicopters conducting operations to/from a HEMS operating site located in a hostile environment shall as far as possible be operated in accordance with Performance Group A. The commander shall make every reasonable effort to minimise the period during which there would be danger to helicopter occupants and persons on the surface in the event of failure of a power unit.

- iii) The HEMS operating site must be big enough to provide adequate clearance of all obstructions, having minimum dimensions equal normally to at least 2D. For night operations, the site must be illuminated (from the ground or from the helicopter) to enable the site and any obstructions to be identified, and for an unsurveyed site have dimensions of at least 4D in length and 2D in width.
- iv) Guidance on take-off and landing procedures at previously unsurveyed HEMS operating sites shall be contained in the PAOM Part 2.

b) Take-off and Landing – Helicopters with a MTOM exceeding 5700 kg

Helicopters conducting HEMS shall be operated in accordance with Performance Group A.

3.3 The Crew

Notwithstanding the requirements prescribed in Part D of the PAOM Part 1, the following apply to HEMS operations:

a) Selection

The PAOM Part 2 shall contain specific criteria for the selection of flight crew members for the HEMS task, taking previous experience into account.

b) Experience

The minimum experience level for commanders conducting HEMS flights shall be:

i) Not less than:

- 1,000 hours pilot-in-command of aircraft or 100 hours pilot-in-command of helicopters and 1000 hours as co-pilot in HEMS operations of which 500 hours is as pilot-in-command under supervision; and
- 500 hours relevant operating experience in helicopters (relevant experience is that which is gained in a similar operational environment and should take into account the geographical characteristics); and
- 50 hours night flying in helicopters including 20 hours pilot-in-command, for those pilots engaged in night HEMS operations.

ii) Successful completion of training in accordance with paragraph 5 of this Appendix.

c) Recency

All pilots conducting HEMS operations shall have completed a minimum of 30 minutes flight by sole reference to instruments in a helicopter or in a synthetic training device (STD) within the last 6 months. For the purpose of this requirement, recency may be obtained in a VFR helicopter using vision limiting devices such as goggles or screens.

d) Crew Composition

i) HEMS Day Flight

The minimum crew by day shall be one pilot and one HEMS crew member. The latter should be seated in the front seat (co-pilot seat). This can be reduced to one pilot only in exceptional circumstances (such as at an accident site if the pilot is required to bring back medical supplies from the hospital whilst the HEMS crew member remains to give assistance to ill or injured persons).

ii) HEMS Night Flight

The minimum crew by night shall be two pilots. However, one pilot and one HEMS crew member may be employed in specific geographical areas defined

by the operator in the PAOM Part 2 to the satisfaction of the CAA taking into account the following:

- Adequate ground reference;
- Flight-following system providing contact with the helicopter throughout its operational area for the duration of the HEMS mission;
- Reliability of weather reporting facilities;
- HEMS minimum equipment list;
- Continuity of a crew concept;
- Minimum crew qualification, initial and recurrent training;
- Operating procedures, including crew coordination;
- Weather minima;
- Additional considerations due to specific local conditions.

3.4 HEMS Operating Minima

a) Performance Group A and A Restricted

The weather minima for the despatch and en-route phase of a HEMS flight are shown in the following Table. In the event that during the en-route phase the weather conditions fall below the cloud base or visibility minima shown, VMC only capable helicopters must abandon the flight or return to base. Helicopters equipped and certificated for IMC Operations may abandon the flight, return to base or convert in all respects to a flight conducted under IFR, provided the flight crew are suitably qualified.

Table 16 HEMS Operating Minima

2 Pilots		1 Pilot (Note 3)	
DAY			
Ceiling	Visibility	Ceiling	Visibility
500 ft and above	See Section 3 Chapter 3 paragraph 3.3	500 ft and above	See Section 3 Chapter 3 paragraph 3.3
499–400 ft	1000 m (Note 1)	499–400 ft	2000 m
399–300 ft	2000 m	399–300 ft	3000 m
NIGHT			
Cloud base	Visibility	Cloud base	Visibility
1200 ft (Note 2)	2500 m	1200 ft (Note 2)	3000 m

- NOTES:**
- 1 Visibility may be reduced to 800 m for short periods when in sight of land if the helicopter is manoeuvred at a speed that will give adequate opportunity to observe any obstacles in time to avoid a collision.
 - 2 Cloud base may be reduced to 1000 ft for short periods.
 - 3 In the case of single pilot HEMS operations where the HEMS crew member is not seated in the front seat (co-pilot seat) the minimum visibility shall be 5000 m.

b) Performance Group B operations

The weather minima for the despatch and en-route phase of a HEMS flight shall be a cloud ceiling of 600 ft and a visibility of 1500 m. Visibility may be reduced to 800 m for short periods when in sight of land if the helicopter is manoeuvred at a speed that will give adequate opportunity to observe any obstacle and avoid a collision.

4 Additional Requirements**4.1 IFR or Night Operations – Helicopter Flight and Navigational Instruments and Associated Equipment**

An operator shall not operate a helicopter 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. For night VFR operations one pressure altimeter may be replaced by a radio altimeter;
- 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 helicopters with a maximum approved passenger seating configuration of 9 or less or a MCTOM of 2730 kg or less and issued with an individual Certificate of Airworthiness prior to 1 August 1999;
- e) A vertical speed indicator;
- f) A slip indicator;
- g) An attitude indicator;
- h) A single standby attitude indicator (artificial horizon) capable of being used from either pilot's station that:
 - i) Provides reliable operation for a minimum of 30 minutes or the time required to fly to a suitable alternate landing site when operating over hostile terrain or offshore, whichever is the greater, after total failure of the normal electrical generating system, taking into account other loads on the emergency power supply and operational procedures;
 - ii) Operates independently of any other attitude indicating system;
 - iii) Is operative automatically after total failure of the normal electrical generating system; and
 - iv) Is appropriately illuminated during all phases of operation;
- i) In complying with sub-paragraph h) above, it must be clearly evident to the flight crew when the standby attitude indicator, required by that paragraph, is being operated by emergency power. Where the standby attitude indicator has its own dedicated power supply there shall be an associated indication clearly visible when this supply is in use.
- j) A stabilised direction indicator;

- k) A means of indicating in the flight crew compartment the outside air temperature calibrated in degrees Celsius; and
- l) An alternate source of static pressure for the altimeter and the airspeed and vertical speed indicators; and
- m) Whenever two pilots are required the second pilot's station shall have separate instruments as follows:
 - i) A sensitive pressure altimeter calibrated in feet with a sub-scale setting, calibrated in hectopascals/millibars, adjustable for any barometric pressure setting likely to be encountered during flight which may be one of the two altimeters required by sub-paragraph c) above;
 - ii) 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 helicopters with a maximum approved passenger seating configuration of 9 or less or a MCTOM of 2730 kg or less and issued with an individual Certificate of Airworthiness prior to 1 August 1999;
 - iii) A vertical speed indicator;
 - iv) A slip indicator;
 - v) An attitude indicator; and
 - vi) A stabilised direction indicator.
- n) A chart holder in an easily readable position which can be illuminated for night operations.
- o) Whenever duplicate instruments are required, the requirement embraces separate displays for each pilot and separate selectors or other associated equipment where appropriate; and
- p) All helicopters must be equipped with means for indicating when power is not adequately supplied to the required flight instruments.

4.2 **Additional Equipment for Single Pilot Operation under IFR**

An operator shall not conduct single pilot IFR operations unless the helicopter is equipped with an autopilot with, at least, altitude hold and heading mode, except for helicopters with a maximum passenger seating configuration of 6 or less first certificated in a JAA Member State for single pilot IMC operations on or before 1 January 1979 and which are in service in a JAA Member State on 1 August 1999. Such helicopters may continue to be operated until 31 December 2004 provided the operator has been granted a relevant approval by the CAA.

NOTE: In the United Kingdom IFR Operations include flight at night.

4.3 **Helicopter Medical Equipment**

- a) The installation of all helicopter dedicated medical equipment and, where appropriate, its operation including any subsequent modifications shall be approved.
- b) An operator shall ensure that procedures are established for the use of portable equipment on board.

4.4 **Helicopter Communication and Navigation Equipment**

Helicopters conducting HEMS flights shall be provided with communications equipment, in addition to that required by the PAOM Part 1, capable of conducting two-way communication with the organisation for which the HEMS is being provided and, where possible, to communicate with ground emergency service personnel. Any such additional equipment will require airworthiness approval.

4.5 **HEMS Operating Base Facilities**

- a) If crew members are required to be on standby with a reaction time of less than 45 minutes, dedicated suitable accommodation shall be provided close to each operating base.
- b) At each operating base the pilots shall be provided with facilities for obtaining current and forecast weather information and shall be provided with satisfactory communications with the appropriate ATS unit. Satisfactory facilities shall be available for the planning of all tasks.

4.6 **Refuelling with Passengers on Board**

When the commander considers refuelling with passengers on board to be necessary, it can be undertaken either rotors stopped or rotors turning provided the following requirements are met:

- a) Door(s) on the refuelling side of the helicopter shall remain closed;
- b) Door(s) on the non-refuelling side of the helicopter shall remain open, weather permitting;
- c) Fire fighting facilities of the appropriate scale shall be positioned so as to be immediately available in the event of a fire; and
- d) Sufficient personnel shall be immediately available to move patients clear of the helicopter in the event of a fire.

5 Training and Checking

5.1 **Flight Crew Members**

- a) PAOM Part 1 training with the following additional items:
 - i) Meteorological training concentrating on the understanding and interpretation of available weather information;
 - ii) Preparing the helicopter and specialist medical equipment for subsequent HEMS departure;
 - iii) Practice of HEMS departures;
 - iv) The assessment from the air of the suitability of HEMS operating sites; and
 - v) The medical effects air transport may have on the patient.
- b) PAOM Part 1 checking with the following additional items:
 - i) VMC proficiency day and/or night checks as appropriate including flying landing and take-off profiles likely to be used at HEMS operating sites.
 - ii) Line checks with special emphasis on the following:
 - Local area meteorology;
 - HEMS flight planning;
 - HEMS departures;

- The selection from the air of HEMS operating sites;
- Low level flight in poor weather; and
- Familiarity with established HEMS operating sites in operator's local area register.

5.2 **HEMS Crew Member**

The HEMS crew member/Police Observer shall be trained annually in the following subjects:

- a) Duties in the HEMS role;
- b) Navigation (map reading, navigation aid principles and use);
- c) Operation of radio equipment;
- d) Use of onboard medical equipment (except when a medical passenger is carried who will address this requirement);
- e) Preparing the helicopter and specialist medical equipment for subsequent HEMS departure;
- f) Instrument reading, warnings, use of normal and emergency check lists in assistance of the pilot as required;
- g) Basic understanding of the helicopter type in terms of location and design of normal and emergency systems and equipment;
- h) Crew co-ordination;
- i) Practice of response to HEMS call out;
- j) Conducting refuelling and rotors running refuelling;
- k) HEMS operating site selection and use;
- l) Techniques for handling patients, the medical consequences of air transport and some knowledge of hospital casualty reception (except when a medical passenger is carried who will address this requirement);
- m) Marshalling signals;
- n) Underslung load operations as appropriate;
- o) Winch operations as appropriate;
- p) The dangers to self and others of rotor running helicopters including loading of patients;
- q) The use of the helicopter inter-communications system.

5.3 **Medical Passengers**

Prior to any HEMS flight, or series of flights, medical passengers shall be briefed on the following:

- a) Familiarisation with the helicopter type(s) operated;
- b) Entry and exit under normal and emergency conditions both for self and patients;
- c) Use of the relevant onboard specialist medical equipment;
- d) The need for the commander's approval prior to use of specialised equipment;
- e) Method of supervision of other medical staff;
- f) The use of helicopter inter-communication systems; and
- g) Location and use of onboard fire extinguishers.

5.4 **Ground Emergency Service Personnel**

An operator shall take all reasonable measures to ensure that ground emergency service personnel are familiar with the following:

- a) Two way radio communication procedures with helicopters;
- b) The selection of suitable HEMS operating sites for HEMS flights;
- c) The physical danger areas of helicopters;
- d) Crowd control in respect of helicopter operations; and
- e) The evacuation of helicopter occupants following an on-site helicopter accident.

Appendix B HEMS Public Interest Site Operations

1 Approval

The Approval for operations being conducted in accordance with this Appendix will specify:

- a) the public interest site(s);
- b) the type(s) of helicopter; and
- c) the operation is Police HEMS.

2 Terminology

Public interest site (Police HEMS) - A ground level or elevated site other than a HEMS Operating Base or a HEMS Operating Site, specified by the operator and used exclusively for operations in the public interest and limited to HEMS operations.

Public interest operations - Commercial Air Transport (CAT) operations in the public interest. Such operations include, but are not limited to, HEMS and lighthouse operations.

3 Public Interest Site Alleviation

Helicopter types referred to in paragraph 1 above shall be operated in accordance with Performance Group A but are exempt from the performance requirements contained in Section 2 Chapter 7 paragraph 1.1 until 31st December 2004, provided that the operator has been granted a relevant approval by the CAA.

4 Operation

- a) Site specific procedures must be established in the PAOM Part 2 to minimise the period during which there would be danger to helicopter occupants and persons on the surface in the event of a power unit failure during take-off and landing at a public interest site.
- b) The PAOM Part 2 shall contain, for each public interest site; a diagram or annotated photograph showing the main aspects, the dimensions, any non-conformance with ICAO Annex 14, the main risks and the contingency plan should an incident occur.

Section 6 Aircraft Maintenance Support

The maintenance of all aircraft operated under and in accordance with the terms of a PAOC shall be carried out to the public transport standard. Accordingly, a PAOC holder's maintenance support arrangements shall conform with the requirements of CAP 360 Part 2.

Chapter 1 Requirements for the Acceptance of Maintenance Arrangements

1 Administration

The operator shall satisfy the CAA of his maintenance support arrangements. He may have his own organisation for maintenance, or he may contract it out to another organisation, but he remains responsible for the safe operation of his aircraft when maintenance has been contracted out. He shall therefore satisfy himself with the standards of airworthiness achieved by the contractor, through monitoring the contractor's response to the provisions of the maintenance agreement, employing such technical resources as are necessary to achieve the task.

The grant or variation of a PAOC, or acceptance of any changes made to maintenance arrangements, are conditional on an acceptable assessment of the arrangements specified in CAP 360 Part 2. Acceptance of arrangements for maintenance support would be notified by means of Form AD480(P) – Acceptance of Maintenance Support Arrangements for Holders of a PAOC.

2 Operator's Responsibility to Notify Changes

The operator shall inform his allocated Aircraft Maintenance Standards Department Regional Office, of his intention to make any changes in his maintenance arrangements, as follows:

- a) any matter included in the CAA Form AD480(P);
- b) the number of aircraft operated, where that would affect the ability of the maintenance organisation to provide full support;
- c) the location of operating bases if maintenance arrangements are thereby affected;
- d) A change of the supporting maintenance organisation itself, when a minimum of 28 days notice shall be required.

Chapter 2 Technical Log

1 Flight Crew Responsibilities

The ANO requires a technical log to be kept for all aircraft operated by a PAOC holder. Except as permitted by paragraph 5, the aircraft commander shall enter the following details in the technical log, at the end of every flight:

- a) the times when the aircraft took-off and landed;
- b) particulars of any defect known to him if it affects the airworthiness or safe operation of the aircraft, or if no such defect is known to him he shall make an entry to that effect;
- c) such other particulars in respect of the airworthiness or operation of the aircraft as the CAA may require;
- d) his/her signature and the date.

If a number of consecutive flights occur within the same period of 24 hours at the same aerodrome with the same aircraft commander, he may postpone completion of the technical log until the end of the last flight. However, if a defect becomes known to him in the air, the aircraft commander shall enter the same at the end of the flight in question.

2 CAA Requirements

In addition to the particulars required by the ANO, as indicated in paragraph 1, the technical log shall contain the following documents:

- a) Sector Record Pages;
- b) provision to record acceptable deferred defects which are awaiting rectification;
- c) a valid certificate of maintenance review;
- d) a maintenance statement.

3 Sector Record Page (SRP) and Deferred Defects Log

Guidance on the compilation of the SRP is given in CAP 360 Part Two, Chapter 8. Operators shall devise therefrom the format of an SRP, which shall be submitted to the CAA for acceptance. The operator shall issue, in the PAOM Part 2, instructions on the manner in which aircraft commanders shall make the required entries in the SRP and, where appropriate, in the deferred defects log.

4 Protection of SRP

The aircraft commander shall make all entries on an SRP in duplicate. He shall remove one copy of each entry from the technical log for retention on the ground, before the next flight commences. In the case of an aeroplane not exceeding 2730 kg MTWA, or a helicopter, if it is not reasonably practicable for a copy of the SRP to be kept on the ground, it may be carried in the aeroplane or helicopter in a container accepted for the purpose by the CAA.

5 Completion of SRP – Helicopters

An SRP need only be completed when a helicopter flight is terminated as follows:

- a) during an operation with the same aircraft commander and rotors are stopped or refuelling is commenced with rotors running; or
- b) there is a change of aircraft commander; or
- c) landing occurs at the main base.

Provided that:

- i) the operator of the helicopter uses a system which accurately records airborne time;
- ii) the aircraft commander completes the technical log after landing at the end of a flight on which a defect occurred to affect the airworthiness or safe operation of the helicopter.

Chapter 3 De-icing and Anti-icing on the Ground

1 Certification for Flight in Icing Conditions

A small number of helicopter types are certificated for flight in limited icing conditions tied to operations in offshore areas where meteorological characteristics are known to provide a layer of air at a temperature above freezing. Details are contained in the Flight Manual and its supplements. The fact that a helicopter is fitted with anti- or de-icing equipment does not mean that it has been certificated for flight in icing conditions. Particularly in the case of smaller twin-engined helicopters it may mean simply that flight tests have shown that, when installed, the equipment has had no adverse effects on the helicopter's normal flight characteristics. Whether or not a helicopter type has been certificated for flight in icing conditions, it is not certificated for take-off or flight when carrying ice, snow or frost deposits accumulated on the ground. Helicopter commanders are therefore to ensure that anti- and de-icing operations appropriate to the conditions are carried out on the ground before departure, and that pre-flight inspection indicates that all significant deposits of hoar frost, ice and snow have been removed before any attempt is made to take-off.

2 Ground De-icing

Depending on the facilities available at the heliport, and on the helicopter type, removal may be achieved by brushing, the application of fluids, or a combination of these methods. Flight crews should familiarise themselves with the methods locally available, and with those areas of their helicopter from which the removal of deposits is vital, or which may be adversely affected by the incomplete or careless removal of snow or slush (e.g. rotor heads, pitch change linkages, engine intakes or pitot static ports).

NOTE: The PAOM Part 2 shall contain aircraft type specific instructions for ground de-icing.

3 De-icing Fluids

There are a number of different fluids available, the use of which is defined by The Association of European Airlines (AEA). These include thickened (ISO types II, IIa and IV) and unthickened types (ISO Type 1). Thickened fluids are designed to stay on the aircraft surfaces for longer, to extend the period of protection from accretions or re-freezing of residues.

Guidelines on the various types of fluids available, and their approximate holdover times are given in the current Aeronautical Information Circular (AIC) (Pink).

4 General Precautions

Normally, unless the helicopter is being de-iced by the approved contractor at its main base, the flight crew may be required either to undertake de-icing operations themselves, or to supervise those carried out by, or on behalf of, a handling agency. In either case, care should be taken to ensure that whether removed by broom, squeegee or the application of fluid spray, deposits are swept away from pitch change mechanisms, rotor heads and system intakes, and that the sprays themselves are not directed to these areas. Since the de-icing fluid may be further diluted by the melting

deposits which it is designed to remove, re-freezing may occur if the solution runs onto other parts of the helicopter, and close attention should be paid to this possibility. Care should be taken to prevent de-icing fluid from accumulating around cockpit transparencies, on which it may cause smearing and loss of vision as speed is increased during a subsequent take-off. When de-icing operations have been completed, ideally as close to the departure time as possible, a careful walk-round inspection of the helicopter is to be completed in order to confirm that rotor heads and control linkages have been cleared of deposits, and that intake and drain holes are free of any obstruction. Controls should be moved over their full range, and turbine engine compressors rotated by hand to ensure that they have not become frozen in position. Undercarriage components should be checked for freedom from accumulation of snow or ice, and where applicable microswitches and uplocks for normal functioning.

5 Further Precautions

Recent developments in ground de-icing techniques include the need to evaluate the prevailing weather conditions closely and adjust holdover times accordingly. Significant factors may include:

- a) The protection against icing (holdover time) afforded by the application of de-icing fluid can be shortened by high winds or jet blasts causing damage to the de-icing fluid film which forms to protect the aircraft surface;
- b) Wing skin temperatures can be significantly lower than the OAT. It can therefore be a more representative guide to the de-icing requirements, de-icing fluid/water mixing ratio and subsequent holdover times.

6 Technical Log

The commander is to confirm that whenever de-icing has taken place, an appropriate entry has been made and signed in the technical log, and that in particular, the start and completion times of the de-icing process have been entered. If there is any subsequent departure delay, or further deterioration in the weather conditions, he should use this information, together with the published approximate holdover times, to make a judgement on the need for further de/anti-icing.

Part D Training

1 Administration

1.1 Introduction

1.1.1 General

This section is issued in compliance with JAR-FCL. It complies with the applicable elements of the United Kingdom Air Navigation Order for the time being in force and with the terms and conditions of an Air Operator's Certificate/Police Air Operator's Certificate.

The training section is primarily for the use and guidance of those personnel who have been appointed to carry out training and/or checking duties in respect of flight crew.

Where an AOC/PAOC holder operates, or intends to operate different types or variants of aircraft, the individual training requirements and test forms must indicate clearly to which type or variant of aircraft they apply.

1.2 Administration

1.2.1 Mandatory Requirements

Chief Pilots are responsible for maintaining a record of the expiry dates of checks, tests and training.

Operator Proficiency Checks and Instrument Rating Revalidation flight checks may be carried out in total or in part on an approved flight simulator, during positioning flights or on specially detailed training flights. Abnormal or emergency procedures requiring the application of part or all of abnormal or emergency procedures, and the simulation of IMC by artificial means, are not to be simulated during commercial air transportation or police flights. Exceptionally the CAA may agree to the carriage of passengers who shall be nominated by category in the PAOM Part 2.

1.2.2 Training Records

Once training and a check or test has been completed, the authorised person conducting the training or check is to ensure that the forms have been completed correctly and a copy is retained on the individual flight crew member's file.

Given the diversity of operations and aircraft types, together with the desirability to use standard forms, it may be necessary for Training Captains to either delete or amend certain terms when completing check and training forms. In some cases, a particular procedure may not be applicable, in which case the remarks column should read 'NOT APPLICABLE'.

Any items not completed should be indicated as 'NOT CHECKED' and any subsequent restrictions pertaining should be noted in the remarks section on the front of the form. If an item is unsatisfactory, a cross (X) should be entered, together with an explanation.

An accurate account of training progress must be maintained, using appropriate forms, and showing all ground and air exercises completed, including flying times. A narrative should include all relevant factors of performance, such that any change of instructor, for whatever reason, can take place without problem.

All forms, both for training and checking, MUST be available to the aircrew member concerned, to confirm accuracy of reporting and concurrence with reports.

1.2.2.1 **Storage and Retention of Forms**

Records shall be retained for a period of three years.

1.2.2.2 **Base and Line Check Questionnaires**

It is a requirement that at least 75% of the questions asked during a check shall be different from those asked during the preceding check. Questions may be oral or written, but a record must be kept of the questions asked. Questions relating to aircraft limitations and equipment should be 'closed book', whereas questions relating to general procedures and the Operations Manual may be 'open book'.

1.2.2.3 **Operation on more than one Type or Variant**

1.2.2.3.1 **Helicopters**

- a) The following conditions apply to a flight crew member operating helicopters with a MCTOM >5,700 kg or with a maximum approved passenger seating configuration of more than 19:
 - i) The flight crew member shall not fly more than two helicopter types.
 - ii) A minimum of three months and 150 hours experience on the type or variant shall be achieved before the flight crew member commences the conversion course on to the second type or variant.
 - iii) 28 duty days of operation and/or 50 hours flying shall then be achieved exclusively on the second type or variant and
 - iv) Multi-type operations shall only be possible provided a rostering restriction is enforced such that in any one duty period only helicopters within one type rating shall be flown.
- b) In the case of all other helicopters, a flight crew member should not operate more than three helicopter types or significantly different variants.
- c) If a flight crew member operates more than one type or variant the following provisions shall be satisfied:
 - i) The recent experience requirements given in paragraph 1.2.3 below, as applicable, are satisfied and confirmed prior to commercial air transport operations on any type.
 - ii) The requirements of paragraph 1.2.3 are maintained for each type.

1.2.2.3.2 **Aeroplanes**

Provision for operations on more than one type or variant shall be contained in the appropriate section of the Operations Manual.

1.2.2.3.3 **Helicopters and Aeroplanes**

Provision for operations on a combination of helicopter and aeroplane shall be contained in the appropriate section of the Operations Manual.

1.2.2.4 **Circumstances in which an IR is Required**

The holder of a pilot licence shall not act in any capacity as a pilot of an aircraft, except as a pilot undergoing skill testing or dual training, under IFR unless the holder has an IR appropriate to the type of aircraft issued in accordance with JAR-FCL or has a special rating or licence endorsement which permits flight under IFR solely within that JAA member state.

1.2.3 **Periods of Validity**

1.2.3.1 **Operator Proficiency Check (OPC)**

The period of validity of an Operator Proficiency Check shall be six calendar months in addition to the remainder of the month of issue. If issued within the final three calendar months of validity of a previous OPC, the period of validity shall extend from the date of issue until six calendar months from the expiry date of that previous OPC.

An OPC conducted at night shall qualify a pilot for day and night, and pilots of multi-engine helicopters shall complete a night section at alternate OPCs.

Non-Instrument Rated Helicopter Pilots who are required to conduct routine night operations shall carry out an instrument section (Appendix A paragraph 2.1) at each OPC.

1.2.3.2 **Line Check (LC)**

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 three 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. The Line Check must be conducted on the aircraft.

For operations conducting visual contact flight at night, pilots shall be required to conduct a night sector as part of a line check.

For Police Operations this check should normally be conducted on one or more operational flights within a seven day period.

1.2.3.3 **Annual Emergency and Safety Equipment Check (E & S)**

The period of validity of an Annual E & S shall be 12 calendar months in addition to the remainder of the month of issue. If issued within the final three calendar months of validity of a previous Annual E & S, the period of validity shall extend from the date of issue until 12 calendar months from the expiry date of that previous Annual E & S.

1.2.3.4 **Triennial Emergency and Safety Equipment Check**

The Triennial E & S training shall consist (as applicable) of Wet Dinghy Drill, First Aid Training, Emergency Exit Jettison, Fire Extinguisher Drill and Smoke Protection Equipment Drill.

The period of validity of a Triennial E & S shall be three calendar years in addition to the remainder of the month of issue. If issued within the final three calendar months of validity of a previous Triennial E & S, the period of validity shall extend from the date of issue until three calendar years from the expiry date of that previous Triennial E & S.

There is no requirement to complete the various items at one time, and a separate check form may be used for each element.

1.2.3.5 **Crew Resource Management (CRM)**

Flight crew members should complete the major elements of the full CRM awareness course over a four year recurrent cycle, fulfilled by annual recurrent training.

1.2.3.6 **Ground and Refresher Training**

Each flight crew member shall undergo ground and refresher training every 12 calendar months.

1.2.3.7 Pilot Qualification to Operate in either Pilot's Seat

Commanders whose duties also require them to carry out the duties of Co-pilot, or Commanders required to conduct training or examining duties, shall complete additional training and checking concurrent with the Operator Proficiency Check. This additional training must include at least the following:

- a) An engine failure during take-off.
- b) A one-engine-inoperative approach and go-around and
- c) A one-engine-inoperative landing.

When operating in the Co-pilot's seat, the checks required for operating in the Commander's seat must, in addition, be valid and current.

1.2.3.8 Area/Role/Route Competence Qualification

The period of validity of the Area/Role/Route Competence qualification and any special competency checks, shall be 12 calendar months in addition to the remainder of the month of issue.

Area/Role/Route Competence qualification shall be revalidated by operating in the area, in the role or on the route, within the period of validity described above, and as part of the annual Line Check. If revalidated within the final three calendar months of validity of a previous Area/Role/Route Competence qualification, the period of validity shall extend from the date of revalidation until 12 calendar months from the expiry date of that previous Area/Role/Route Competence qualification.

Items which cannot be carried out during a routine Line Check must be completed on a separate flight, as close as possible to the date of the Line Check.

1.2.3.9 Recent Experience

A pilot shall not operate an aircraft unless he has carried out at least three take-offs, three circuits and three landings as pilot flying in an aircraft or an approved flight simulator of the type to be used, in the preceding 90 days. The 90 day period may be extended up to a maximum of 120 days by flying on the line under the supervision of a nominated Commander.

1.2.3.10 Recent Experience – Single Pilot Operations under IFR

In addition to the requirements specified above, a pilot shall not conduct single pilot operations under IFR in IMC unless he has carried out three instrument approaches during the preceding 90 days on the aircraft type in the single pilot role. This requirement may be replaced by an IFR instrument approach check on the aircraft type.

1.2.3.11 Recent Experience – Single Pilot Operations at Night (Helicopters)

A pilot shall not conduct single pilot operations at night unless he has carried out at least three take-offs, three circuits and three landings as pilot flying at night during the preceding 90 days on the aircraft type or an approved FNPT II/III or FTD 2/3.

In addition, pilots who do not hold a valid helicopter instrument rating on type, including a current OPC(1), shall within 90 days (+/- 30 days) following the instrument flying training conducted by a TRE, conduct at least 1 hour of instrument flying practice, which shall include:

- a) climbing and descending turns on to specified headings,
- b) level flight, control of heading, altitude and speed,
- c) level turns with 30 degrees bank, 180 to 360 degrees left and right,
- d) emergency let down procedures.

This instrument flying practice may be conducted as mutual instrument flying practice, in day or night VMC, by pilots qualified on type. (See ANO Rule 6 requirement in Part D paragraph 2.3.7).

1.2.3.12 Instrument Rating

The Instrument Rating is valid for 12 months plus the remainder of the month of issue. If issued within the final three calendar months of a previous Rating, the period of validity shall extend from the expiry date of that previous Rating. The IR will normally be revalidated at the same time as the Type Rating.

If the privileges of the IR have not been exercised for more than seven years from the date of initial issue or revalidation date, the holder will be required to retake the IR theoretical knowledge examination.

1.2.3.13 Type Rating

Type ratings are valid for 12 months plus the remainder of the month of issue. If issued within the final three calendar months of a previous Type Rating, the period of validity shall extend from the expiry date of that previous Type Rating. The Instrument Rating may be combined with the Type Rating but need not be completed during the same flight.

If a Type Rating has expired by more than five years, the following refresher training will be completed:

- 2 days ground training
- 3 hours flying on type to include a full LPC (Multi Engine)
- 2 hours flying on type to include a full LPC (Single Engine)

The Training Captain will, on successful completion of the above, sign the Certificate of Test and forward a completed LPC form to the CAA.

1.2.4 Training Staff – Qualifications and Responsibilities

Training staff shall be listed by name in the appropriate section of the Operations Manual. Any person may hold a number of the nominated training appointments. An operator may nominate training/testing staff employed by another operator provided that such staff are suitably qualified and familiar with the training requirements of the operator on whose behalf they are carrying out the training/testing. Any such arrangements between operators shall be described in the appropriate section of the Operations Manual.

The qualifications and responsibilities to be associated with each appointment are set out in the following paragraphs:

1.2.4.1 Line Training Captain

1.2.4.1.1 Minimum qualifications:

- a) At least CPL(A) or CPL(H) as appropriate with relevant PIC rating;
- b) 1000 hours PIC on aeroplanes or 1000 hours PIC on helicopters, as appropriate;
- c) 50 hours PIC on type;
- d) At least six months' experience on relevant air operations, or three months and 75 flying hours on relevant air operations;
- e) Currency in respect of the operating roles in which he will be required to train or test.

1.2.4.1.2 Responsibilities:

- a) Training and Line/Area Competency Check (Pilot and Observer);
- b) Emergency and Survival Procedures training (Pilot and Observer);
- c) Pilot role training;
- d) Training and Special Operations Check (Pilot and Observer), as authorised by the Chief Training Captain.

1.2.4.2 **Training Captain**

1.2.4.2.1 Minimum qualifications:

- a) As for a Line Training Captain; **and**
- b) Current TRE/TRI qualification on type(s) in question; **and**
- c) At least 6 months or 100 flying hours' experience on relevant air operations; **and**
- d) Instrument on Rating (unless conducting non-IF training and checks).

1.2.4.2.2 Responsibilities:

- a) As for a Line Training Captain;
- b) Conversion training and type rating tests; **and**
- c) OPC and licence Certificate of Test; **and**
- d) Any Special Operations Check (Pilot and Observer).

1.2.4.3 **Chief Training Captain**

1.2.4.3.1 Minimum qualifications:

- a) As for a TRE;
- b) 2000 hours PIC on helicopters or aeroplanes as appropriate.

1.2.4.3.2 Responsibilities:

- a) The Preparation of a course of ground instruction and flying training for each aircraft type. The syllabi shall be included in the appropriate section of the Operations Manual;
- b) Ensuring that all the flight crew training requirements are completed;
- c) Advising the Chief Pilot on training requirements for current roles and any changing needs;
- d) Advising the Chief Pilot that pilots are qualified to carry out the operational roles of the unit;
- e) Overseeing the training staff;
- f) Nominating TREs to set out and conduct examinations for specified aircraft types;
- g) Issuing and amending Training Instructions as required;
- h) Compiling and retaining training records.

1.2.4.4 **Police Observer Training Officer**

1.2.4.4.1 Minimum qualifications:

Three months' experience as an observer on police air operations.

1.2.4.4.2 Responsibilities:

- a) Preparation of a course of ground and flying training for each aircraft type. The syllabus shall be included in the appropriate section of the Operations Manual.
- b) Line/Area Competency Check (Observer);
- c) Emergency and Survival Procedures Check (Observer);
- d) Role equipment training;
- e) Training in care of passengers;
- f) Special Operations Check (Observers);
- g) Maintenance of observer training records.

2 Training General

2.1 Conversion Training and Checking

2.1.1 General

A flight crew member shall complete a Type Rating course which satisfies the applicable requirements of JAR-FCL when changing from one type of aircraft to another for which a new type rating is required.

Type rating training, when required, may be conducted separately or as part of the conversion training. When the type rating training is conducted as part of conversion training, the conversion training programme will include all the licensing requirements.

The amount of training required will be determined after due note has been taken of the flight crew member's previous training.

The Conversion course shall include:

- a) Ground training covering all aircraft systems and emergency procedures (with or without simulator or other training device);
- b) Emergency and safety equipment training and checking (completed before flying training on the aircraft commences);
- c) CRM and Multi-Crew Co-ordination Training (MCC);
- d) Flying training (simulator and/or aircraft),
- e) Instrument flying training;
- f) Autopilot management and the use of upper modes of the autopilot where fitted;
- g) Line flying under supervision and Line Check; **and**
- h) Special Operational Competency Training.

The conversion course shall be conducted in the order set out above. The Training Captain responsible for the conversion training is to ensure that the full ground and air training syllabus is carried out and a satisfactory flight test and Operator Proficiency Check accomplished on completion. When a flight crew member has not previously completed an operator's conversion course, in addition to the sequence above, the flight crew member shall undergo general First Aid training and, if applicable, ditching procedures training using the equipment in water.

Once a flight crew member has commenced a conversion course he shall not undertake flying duties on another type of aircraft until the course is completed or

terminated. In the case of a flight crew member changing aircraft type, the OPC may be combined with the type rating skill test required by JAR-FCL.

It is the responsibility of all Training Staff to ensure that training is conducted at approved and licensed sites, and that due care is taken in the selection of appropriate places for specific exercises, such as sloping ground, engine-off landings, rejected take-offs, etc.

2.1.2 **Ground Training**

Ground training shall comprise a properly organised programme of ground instruction by training staff with adequate facilities, including any necessary mechanical and visual aids. However, if the aircraft concerned is relatively simple, private study may be adequate if suitable manuals and/or study notes are provided. The course of ground instruction shall incorporate formal tests on such matters, where applicable, as aircraft systems, performance and flight planning etc.

The written test at the completion of the technical syllabus is completed under Type Rating Training Organisations (TRTO) arrangements.

Ground training will include the following items:

a) **Passenger Handling**

Other than general training on dealing with people, emphasis will be placed on the following:

- i) Advice on the recognition and management of passengers who appear or become intoxicated with alcohol, under the influence of drugs or aggressive;
- ii) Methods used to motivate passengers and the crowd control necessary to expedite an evacuation;
- iii) Awareness of the types of dangerous goods which may or may not be carried in a passenger cabin, including the completion of a dangerous goods training programme; and
- iv) The importance of correct seat allocation with reference to mass and balance. Particular emphasis will also be given on the seating of persons of reduced mobility and the necessity of seating able bodied passengers adjacent to unsupervised exits.

b) **Discipline and Responsibilities**

Amongst other subjects, emphasis will be placed on discipline and an individual's responsibilities in relation to:

- i) His ongoing competence and fitness to operate as a crew member with special regard to flight time limitation requirements; and
- ii) Security procedures.

c) **Passenger Briefing/Safety Demonstrations**

Training will be given in the preparation of passengers for normal and emergency situations.

d) **Maintenance Tasks**

Instruction in the Maintenance Tasks likely to be carried out when away from base in order to complete a Certificate of Release to Service.

2.1.3 **Emergency and Safety Equipment Training**

Emergency and Safety Equipment training shall take place whenever practicable in conjunction with observers doing similar training with emphasis on co-ordinated procedures and two-way communications.

For new crew members, or as applicable on conversion, the following shall be addressed:

- a) Aeromedical topics including:
 - i) Instruction on first aid topics in general and as appropriate to the aircraft type and crew complement;
 - ii) Guidance on the avoidance of food poisoning;
 - iii) The possible dangers associated with the contamination of the skin or eyes by aviation fuel and other fluids and the immediate treatment;
 - iv) The recognition and treatment of hypoxia and hyperventilation;
 - v) Survival training and guidance on hygiene appropriate to the areas operated; and
 - vi) Incapacitation of flight crew members.
- b) Training will also include:
 - i) The importance of effective co-ordination between flight crew and observers;
 - ii) The use of smoke protection equipment and protective clothing where carried. In the case of the first type of aircraft so equipped, training shall be associated with experience of movement in a cosmetic smoke filled environment;
 - iii) Actual fire-fighting using equipment representative of that carried in the aircraft; and
 - iv) The operational procedures of security, rescue and emergency services.
- c) Survival training appropriate to the areas of operation including the use of any survival equipment carried.
- d) A comprehensive drill to cover all ditching procedures will be practised where flotation equipment is carried. This will include practice of the actual donning and inflation of a lifejacket, together with a demonstration or film of the inflation of liferafts and associated equipment. This practice will, on an initial conversion course, be conducted using the equipment in water, although previous certificated training with another operator or the use of similar equipment will be accepted in lieu of further wet-drill training.
- e) Instruction on the location of emergency and safety equipment, correct use of all appropriate equipment, and procedures that could be required of air crew in different emergency situations.
- f) On completion of Emergency and Safety Equipment training the flight crew member will undergo the Emergency and Safety Equipment check specified in paragraph 2.3.4.

2.1.4 **CRM Training**

Flight crew shall complete an approved CRM Foundation course. The course should be completed within six months of first joining a Unit. Flight crew joining a Unit who can produce a certificate of completion of an approved CRM course, will be exempt from this training requirement.

2.1.5 **Flying Training**

Flying training will be structured and sufficiently comprehensive to familiarise the flight crew member thoroughly with all aspects of limitations and normal operation of the aircraft, including the use of all cockpit equipment and with all emergency procedures and must be carried out by a suitably qualified TRI or TRE. Unless the training programme has been carried out in a flight simulator approved for zero flight time conversions, the training required will include an element of proficiency training on an aircraft, including at least three take-offs, circuits and landings. All pilots must successfully complete an Operator Proficiency Check with a TRE before they are assigned to line duties. This will include all elements of an Instrument Rating test where it is likely that the pilot will be required to operate under IFR.

2.1.5.1 **Single Engine Training in Multi-engine Helicopters**

The following information is relevant to all types:

- a) Pre-flight briefings are to include the correct handling technique and the intended actions by the Training Captain;
- b) Unless fitted with a single-engine training mode (e.g. FADEC), having initiated a single engine condition, the Training Captain is to accelerate the retarded engine slightly, so as to ensure immediate response to power demand. Additionally the Training Captain should keep his hand on the throttle/engine lever whilst the helicopter is in single engine mode when below 500 ft;
- c) The reject take-off area should be firm, level and unobstructed;
- d) Training weights should be achieved by a combination of fuel and ballast. No fuel should remain in overload, long-range or sponson tanks.

2.1.6 **Single Pilot Operations under IFR**

Pilots required to conduct single pilot operations under IFR will be given additional training with respect to cockpit procedures as follows:

- Engine management and emergency handling;
- Use of normal and emergency checklist;
- ATC communications;
- Cockpit procedures in respect of departure and approach;
- Autopilot management; **and**
- Simplified in-flight documentation.

2.1.7 **Flying Tests and Checks**

The following mandatory tests and checks will be carried out on, or prior to, completion of the conversion training and prior to commencing line flying under supervision:

- Emergency and Safety Equipment Check;
- Pilot Licence Proficiency Check (LPC) – (Type Rating);
- Operator Proficiency Check;
- IR (Initial or add type) or instrument flying training for non-rated pilots; **and**
- Initial Line Check (see Appendix B paragraph 4).

The Emergency and Safety Equipment Check shall be completed before the candidate first flies the aircraft.

The Type Rating check should, if possible, be carried out by a different TRE to the one who conducted the conversion training.

The Initial Line Check shall be completed on a non-operational flight, by day and by night, in order to qualify. Dusk conditions are not appropriate.

When adding a new type to an Instrument Rating, two hours as pilot by sole reference to instruments on the relevant type is required before taking the test. Time spent in an approved simulator is acceptable and the test may be carried out in an aircraft or simulator.

2.1.8 **Line Flying under Supervision**

Line flying under supervision provides the opportunity for a flight crew member to carry into practice the procedures and techniques he has been made familiar with during the conversion course. At the end of line flying under supervision the respective flight crew member should be able to perform a safe and efficient flight conducted within the terms of reference of his crew appointment.

After completing the necessary training under supervision, a Line Check will be completed. The syllabi for line checking and training can be found in Appendix B.

2.1.9 **Certificate of Special Operational Competency – Pilot and Observer – Police Operations**

Pilots and Observers likely to operate at times in roles that involve the use of special equipment and techniques, including winching, underslung loads and flights making use of equipment such as night vision goggles are likely to require a level of training beyond that normally demonstrated in periodic tests.

Before being declared able to undertake such roles, a pilot/observer shall complete an appropriate course of training and pass the test for a Certificate of Special Operational Competency. For the pilot the test shall be conducted by a training captain. The periodicity shall be as for the Line Check.

2.2 **Differences and Familiarisation Training (JAR–FCL)**

2.2.1 **Differences Training**

A flight crew member shall complete differences training when:

- a) Operating another variant of an aircraft of the same type currently operated; **or**
- b) A change of equipment and/or procedures on types or variants currently operated requires the acquisition of additional knowledge.

A differences course will always conclude with a test. The test may be a once-only requirement or may involve recurrency. The appropriate annotation will be included in the Type Conversion Training Supplement.

2.2.2 **Familiarisation Training**

A flight crew member shall complete familiarisation training when:

- a) Operating another aircraft of the same type or variant or
- b) A change of equipment and/or procedures on types or variants currently operated requires the acquisition of additional knowledge.

NOTE: This familiarisation training is required prior to operating another aircraft of the same type that has differences in the equipment fit, equipment layout or equipment type. The familiarisation training does not necessarily have to include a flight.

2.3 **Recurrent Training**

2.3.1 **General**

A flight crew member shall undergo recurrent training that is relevant to the type or variant of aircraft on which he is certificated to operate.

2.3.2 **Ground and Refresher (Annual)**

The ground and refresher training shall include:

- Aircraft systems
- Operational procedures and requirements
- Accident/Incident and Occurrence review
- Maintenance Tasks likely to be carried out when away from base in order to complete a Certificate of Release to Service.

Knowledge of ground and refresher training shall be verified by a questionnaire or other suitable method.

2.3.3 **Aircraft/Flight Simulator**

Recurrent training and checking provides an opportunity for the practice of emergency procedures which rarely arise in normal operations and are part of a structured programme of recurrent training. This training will be carried out in a flight simulator whenever possible.

Where there is a Flight Manual limitation on the use of certain emergency power ratings, procedures to permit realistic engine-failure training, and demonstrations of competence without actual use of the emergency power ratings will be as approved by the CAA.

Because of the unacceptable risks when simulating emergencies such as tail rotor failure, icing problems, certain types of engine problems (i.e. during continued take-off or go-around, total hydraulic failure etc.), or because of environmental considerations associated with some emergencies (e.g. fuel dumping), those emergencies will preferably be covered in a simulator. If no flight simulator is available those emergencies may be covered in the helicopter using a safe airborne simulation, bearing in mind the effect of any subsequent failure, and discussion on the ground. The use of 'touch drills' is an acceptable means of compliance.

2.3.4 **Emergency and Safety Equipment**

2.3.4.1 **General**

The Emergency and Safety Equipment training programme may be combined with emergency and safety equipment checking and shall cover the location and use of all emergency and safety equipment carried on the aircraft. The training and checking shall be conducted in an aircraft or a suitable alternative training device.

2.3.4.2 **Annual**

Every year the emergency and safety equipment training programme must include the following:

- a) Donning of a lifejacket (where required);
- b) Donning of smoke protection equipment if carried;
- c) Handling of fire extinguishers;
- d) Instruction on the location and use of all emergency and safety equipment carried;

- e) Security procedures; and
- f) Dangerous goods transportation procedures.

These items will be included in the Annual Emergency and Safety Equipment (E & S) Check or Line Check, as appropriate.

2.3.4.3 **Triennial**

Every three years the programme of training must include the following:

- a) Operation of all types of exits;
- b) Actual fire-fighting using equipment representative of that carried in the aircraft on an actual or simulated fire except that, with Halon extinguishers, an alternative method acceptable to the CAA may be used;
- c) Training and demonstration of the effects of smoke in an enclosed area where smoke protection equipment is carried;
- d) Handling of pyrotechnics where fitted;
- e) Demonstration and practice in the use of the life-rafts where fitted; and
- f) First aid.

2.3.5 **Crew Resource Management (Annual)**

The successful resolution of aircraft emergencies requires effective co-ordination between flight crew and observers. Combined training will be provided for flight crew and observers, as applicable.

CRM training is the effective utilisation of all available resources i.e. crew members, aircraft systems and supporting facilities to achieve safe and efficient operations.

Emphasis will be placed on the importance of effective co-ordination and two-way communication between flight crew and observers in various emergency situations. Initial and recurrent CRM training will include joint practice in aircraft evacuations so that all who are involved are aware of the duties other crew members must perform. When such practice is not possible, combined flight crew and observer training will include joint discussion of emergency scenarios.

2.3.6 **Single Pilot Operations (Fixed and Rotary Wing)**

Pilots required to conduct single pilot operations under IFR will be given additional training with respect to cockpit procedures as follows:

- a) Engine management and emergency handling;
- b) Use of normal and emergency checklist;
- c) ATC communication;
- d) Cockpit procedures in respect of departure and approach;
- e) Autopilot management;
- f) Simplified in-flight documentation.

2.3.7 **Instrument Flying Experience Requirement – (Unrated Helicopter Pilots)**

A helicopter pilot who does not hold a helicopter instrument rating shall have completed a syllabus of simulated instrument flying training intended to instil a level of competence that would enable a pilot who has inadvertently entered IMC to safely regain VMC. The training shall be repeated at six monthly intervals. The syllabus shall include:

- a) Climbing and descending turns on to specified headings;
- b) Level flight, control of heading, altitude and speed;
- c) Level turns with 30 degrees bank, 180 to 360 degrees left and right;
- d) Recovering from unusual attitudes; and
- e) Emergency let down procedures.

Any such flight shall be conducted by a TRE. The training may have been completed either in an approved FNPT II/III or FTD 2/3, or on the helicopter type. At least 1 hours flight time shall be devoted to simulated instrument flying training, longer if airspace factors prevent its timely completion. This training shall be recorded separately from the OPC.

The conditions for simulated instrument flight shall meet the requirements of Rule 6 of the Rules of the Air Regulations 1996, summarised as follows:

- f) The aircraft is fitted with serviceable dual controls;
- g) A safety pilot is carried; and
- h) Any mechanical or optical devices intended to reduce the external field of view of the handling pilot shall not impede the field of view of the safety pilot.

2.3.8 **Instrument Training Additional Requirements – Helicopters**

All unrated helicopter pilots are required to complete the following exercises during recurrent training of IF.

2.3.8.1 **Unusual Attitudes**

2.3.8.1.1 The method of simulation of unusual attitudes in an aircraft will be as follows:

- a) A Training Captain will be in command;
- b) The exercise shall be conducted in VMC (day or night);
- c) Minimum height will be 1500 ft above surface level;
- d) HASEL checks will be completed;
- e) IF screens or suitable hood devices should be used;
- f) A simulated ground level, at least 1000 ft above the surface should be designated.

2.3.8.1.2 Guidance in the method of practice of unusual attitudes in a helicopter will be as follows:

- a) The pilot under training will follow through lightly on the controls, and either look away or close his eyes;
- b) The Training Captain will manoeuvre the aircraft and then hand control to the pilot under training, who will respond 'I have control';
- c) The pilot under training will recover the aircraft and resume a designated flight path.

2.3.8.1.3 Normal recovery action from an unusual attitude is as follows:

- a) Wings to level;
- b) Attitude check to regain balanced flight;
- c) Adjust power to regain IAS, height, select heading.

As a general rule unusual attitudes resulting in a climb should be recovered to level flight, and those of a descending nature should be recovered to the climb.

The method of practice in a simulator may vary from the above in that no simulation of ground level is necessary and the inducing of an unusual attitude can be carried out by either pilot on his fellow crew member. The exercise can also be carried out under IMC.

2.3.8.2 **Loss of Visual Contact**

In order to practise the transition from visual references to instruments at a critical stage of flight, the following IF take-off procedure is to be utilised during IF training and checks in an aircraft:

- a) The Training Captain will lift the helicopter to the hover and then hand over control to the pilot flying who may use lateral references to maintain a steady position;
- b) The Training Captain will complete hover checks and monitor the profile throughout;
- c) The pilot flying will initiate a vertical take-off from the hover and on inputting forward cyclic will then transfer his scan to the instruments and continue the departure.

2.3.8.3 **Emergency Let Down Procedure Following Inadvertent Entry into Cloud**

During recurrent training, inadvertent entry into cloud should be discussed and emergency let down procedures practised.

Procedures, which take into account local factors, shall be contained in the appropriate section of the Operations Manual.

2.4 **Recurrent Checking**

2.4.1 **General**

A flight crew member will undergo recurrent checking relevant to the type or variant of aircraft on which he is certificated to operate. Line Checks, area and role competency and recent experience requirements are intended to ensure the crew member's ability to operate under normal conditions, whereas other checks, and emergency and safety equipment training, are primarily intended to prepare the crew member for emergency procedures.

The Line Check is performed in the aircraft. All other training and checking will be performed in the aircraft, an approved flight simulator or, in the case of Emergency and Safety Equipment training, in a suitable alternative training device. The type of equipment used for training and checking should be representative of the instrumentation, equipment and layout of the aircraft type operated by the crew member.

The Emergency and Safety Equipment training programme may be combined with emergency and safety equipment checking and shall cover the location and use of all emergency and safety equipment carried on the aircraft.

The Training Captain or Authorised Examiner will always be in command during the course of a LPC/OPC. He may assume the function of the pilot not flying in a multi-pilot aircraft. Where possible the Training Captain should occupy the jump seat or a passenger seat, in order to observe a crew performance during a line check.

2.4.2 **Operator Proficiency Check**

Each flight crew member shall undergo the Operator Proficiency Check as part of a normal flight crew complement to demonstrate competence in carrying out normal and emergency procedures. Part of the check will be conducted without external visual reference when the flight crew member is required to operate under IFR or at

night. It is a requirement for pilots to demonstrate all certified take-off and landing profiles relevant to the operation during Operator Proficiency Checks.

In addition to the checks prescribed above, the requirements of JAR-FCL must be completed every 12 months (Type Rating and Instrument Rating combined renewal) and may be combined with the OPC. The OPC must be conducted by a Type Rating Examiner. The TRE must occupy a pilot's seat when conducting an OPC in an aircraft.

2.4.3 **Line Check**

The Line Check (Appendix B) is considered a particularly important factor in the development, maintenance and refinement of high operating standards, and can provide a valuable indication of the usefulness of training policy and methods. The requirement is for a test of ability to perform satisfactorily a complete line operation from start to finish, including pre-flight and post-flight procedures, use of the equipment provided and for an involvement of an overall assessment of the ability to perform the duties required. The task chosen shall be such as to give adequate representation of the scope of a pilot's normal operations. The Line Check is not intended to determine competence on any particular task. Each flight crew member shall undergo a Line Check on the aircraft to demonstrate his competence in carrying out normal line operations as described in the Operations Manual. The crew will be assessed on their CRM skills.

For Police Operations, if a pilot flies more than one aircraft type, he shall be required to pass the line/area competency check in only one of those where the types are considered similar. Successive checks should use each type in turn. Accepted similar types, as assessed by the CAA, shall be set out in the appropriate part of the Operations Manual.

When appropriate (e.g. in transit) pilots should be encouraged to make full use of the upper modes of the autopilot and their ability to manage the autopilot should be examined during the Line Check. Operators are to establish SOPs covering the use of autopilot upper modes for aircraft fitted with such systems. The method of use of the upper modes shall be set in the appropriate part of the PAOM Part 2 SOPs.

2.4.4 **Failure to Attain the Required Standards**

2.4.4.1 **Pilot**

- a) A Pilot who has failed a periodic flying test or ground examination shall not carry out an operational flight until he has passed a subsequent test.
- b) The Chief Training Captain shall decide what further training and testing is required by a pilot who has failed a periodic flying test or ground examination, or is making inadequate progress during training.

2.4.4.2 **Police Observer**

- a) An observer who has failed a periodic flying test or ground examination shall not carry out an operational police flight until he has passed a subsequent test.
- b) The observer training officer shall consult the UEO to decide what further training and testing is required by an observer who has failed a periodic flying test or ground examination, or is making inadequate progress during training.

Appendix A Operator Proficiency Check (OPC)

1 General

The purpose of the OPC is twofold. Firstly, it fulfils the legal requirement for flight crew to be tested on a regular basis and their continued competence to be verified and recorded. Secondly, it provides flight crew with the opportunity to demonstrate competence in carrying out normal, abnormal and emergency procedures which rarely arise in normal operations.

The OPC may be completed on one or more flights and may involve the use of a simulator. **All elements must be completed within a period of 28 days.**

The applicant shall pass all elements of the OPC. Failure in more than five items will require a retest. An applicant who fails not more than five items shall take the failed items again. Failure in any item of the retest will require the applicant to take the entire test again.

Further training may be required after a failed check. Failure to achieve a pass in all items in two attempts shall require further training as determined by the examiner. There is no limit to the number of checks that may be attempted.

Items with a periodicity of more than six months are to be included in the OPC on a rotational basis. Training Captains should refer to the previous record of checks on a pilot's file in deciding the contents of a check and select suitable drills and procedures. The objective is for each pilot to accomplish all listed items at sensible time intervals and in a conscientious manner. The Operator Proficiency Check File Form is to be held on every pilot's file to record check content.

All type certificated profiles are to be covered in the emergency procedures for take-off and landing. Engine failure manoeuvres carried out in a helicopter must be simulated.

The requirements of JAR-FCL must be completed every 12 months and may be combined with the OPC.

The OPC must be conducted by a TRE.

For a pilot operating VFR only, an approach and go-around with one engine malfunctioning in a multi-engine helicopter, is required.

For pilots operating IFR, an engine malfunction is to be included on either the precision approach or the non-precision approach. The OPC file form is to be annotated with the appropriate confirmation and comment.

Where screens are used for the purpose of IFR training and/or checking, the Training Captain must have an unobstructed view or a third pilot will be required to enhance lookout. Screens are not necessary for the tracking exercise.

It may not be possible to complete an OPC in one flight. Aircraft unserviceability, unavailability, weather and ATC may cause limitations and restrictions. The OPC is not complete until all elements have been achieved. It may be necessary to consult the notes above concerning failed items during the Check, and the pilot may not be able to exercise the privileges of his licence until further training is given.

It may be necessary to change Training Captains during an OPC and it is essential for a thorough hand-over to be completed as follows:

The first Training Captain is to tick those items of the Check that have been satisfactorily completed and sign to that effect in the remarks column of the OPC File Form. The second Training Captain is to indicate the remaining items completed. He will then complete the OPC Form at the conclusion of the check.

Tracking replaces the term 'Airways'. The tracking element may be carried over from one aircraft type to another. The date of tracking validity will automatically be that of the completion of the OPC/LPC. Under JAR-FCL, Airways flight will not form part of the Initial IR or the IR renewal skill test. Tracking will be assessed during approaches using VOR or NDB beacons.

The date of validity of an OPC will be calculated from the date of completion of the final element of the check, which includes the Questionnaire.

Engine-off landings must be completed satisfactorily on alternate OPCs in single engine helicopters. Where impractical, the check can be considered valid if suitable emphasis is placed on autorotations with power recoveries. The check form should be annotated accordingly.

The following schedule indicates items to be included in the OPC.

2 Schedule

2.1 Section A Emergency Procedures and Manoeuvres

	Procedure	Periodicity	Periodicity for Police Operations
1	Engine failure	6 months	6 months
2	Hydraulic system failure, approach and land	6 months	6 months
3	Engine failure during take-off before decision point	6 months	6 months
4	Engine failure during take-off after decision point*	6 months	6 months
5	Engine failure during landing before decision point*	6 months	6 months
6	Engine failure during landing after decision point	6 months	6 months
7	Autopilot control system malfunction*	6 months	6 months
8	Autorotation and power recovery* (rotary)	6 months	6 months
9	Engine bay fire*	12 months	12 months
10	Instrument and cockpit light failure – approach and landing at night	12 months	12 months
11	Engine re-light*	18 months	18 months
12	Ditching and crash procedures	18 months	18 months
13	Engine control system malfunctions – approach and landing	18 months	18 months
14	Electrical system failures*	18 months	18 months
15	Fuel system failures*	18 months	18 months
16	Oil system failures*	18 months	18 months
17	Airframe or electrical fire*	36 months	36 months
18	Undercarriage system failures*	36 months	36 months
19	Main gearbox failure* (rotary)	36 months	36 months
20	Flying control malfunctions*	36 months	36 months
21	Tail rotor and yaw system failures (rotary)	36 months	36 months
22	Pitot/static system failures*	36 months	36 months

Additional Items for Police Operations

23	Engine Failure in the high hover (rotary)	N/A	6 months
24	Engine Failure (appropriate flap extended) whilst turning in the low speed configuration (aeroplanes)	N/A	6 months

NOTE: Items marked * may be completed in IMC or simulated IMC.

For unrated helicopter pilots engaged in night operations the OPC will further include the following procedures in IMC or simulated IMC:

		Periodicity	Periodicity for Police Operations
1	Emergency let down procedure	6 months	6 months
2	Climbing and descending turns on to specified headings	6 months	6 months
3	Level flight, control of heading, altitude and speed	6 months	6 months
4	Level turns with 30 degrees bank, 180 to 360 degrees left and right	6 months	6 months
5	Recovering from unusual attitudes	6 months	6 months

NOTE: The precision approach may include an engine malfunction.

2.2 Section B Written/Oral

1	Type technical	6 months
2	Limitations	6 months
3	Aircraft equipment	6 months
4	Operations Manual amendments and Circulars	6 months

The above subjects are to be covered by questions and discussion and an overall pass mark of 70% is to be achieved. Completed answer sheets are to be assessed by the Training Captain and retained in the individual's file until the next OPC. It is acceptable to complete an oral check provided a written check is completed at the next OPC.

2.3 Section C General Procedures

1	Pre-flight checks and inspection	6 months
2	Knowledge and use of normal checklists and procedures	6 months
3	Crew co-ordination and briefings	6 months
4	Starting and shut down procedures	6 months
5	Taxi and hover taxi	6 months
6	Hover manoeuvres including crosswind	6 months
7	Use of aircraft equipment	6 months
8	Basic flying accuracy and smoothness	6 months
9	Steep turns	6 months
10	Climbing and descending turns to specific headings (SP)	6 months
11	Take-offs – various profiles (SP)	6 months

SP – Single pilot, single and multi-engine aircraft.

Where appropriate, items should be flown with and without the use of autopilot or other stability enhancing equipment. The assessment of flight crew performance should be based on the general conduct of the flight, adherence to standard procedures and Crew Resource Management.

2.4 Section D Instrument Flight (Rated Pilots)

1	Navaid and instrument checks	6 months
2	Instrument departure	6 months
3	Basic flying, accuracy and smoothness	6 months
4	Altimeter setting procedures	6 months
5	ATC liaison	6 months
6	Conforming to ATC clearances	6 months
7	Use of anti-icing equipment	6 months
8	Non-precision approach to minima	6 months
9	Approach with malfunction of flight control/FD system (Where installed)	6 months
10	Recovery from unusual attitudes	6 months
11	Precision approach to minima (Instrument LPC Only)	6 months
12	Go around on instruments from minima with one engine malfunctioning (Instrument LPC Only)	6 months
13	IMC autorotation (rotary)	6 months
14	Tracking	12 months
15	Holding procedure	12 months
16	Aborted take-off (SP)	12 months
17	Radio, navaid and instrument failure	36 months

SP – Single pilot, single and multi-engine aircraft.

NOTE: The non-precision approach may include an engine malfunction.

Appendix B Line Check and Line Training

1 Introduction

A Line Check shall be conducted by a Line Training Captain. It consists of four sections as follows:

2 Content of Check

- a) **Section A** Pre-flight, including:
 - i) Weather assessment and minima
 - ii) Flight planning and fuel/load computation
 - iii) Load and balance and performance calculations
 - iv) Route diversion and destination appraisal
 - v) External checks and pre-flight procedures.
- b) **Section B** Handling, including:
 - i) Start-up, ground procedures and taxi (as relevant to type)
 - ii) Take-off and departure procedures
 - iii) Cruise procedures and fuel management
 - iv) Arrival procedures
 - v) Approach and landing techniques
 - vi) Site procedures.
- c) **Section C** General, including:
 - i) Adherence to ATC
 - ii) Use of checklists
 - iii) Use of radios
 - iv) Altimeter settings
 - v) Anti-ice and turbulence procedures
 - vi) Meteorology and alternates
 - vii) Briefings and crew supervision
 - viii) Operational decisions
 - ix) Documentation
 - x) CRM
 - xi) Use of area navigation aids
 - xii) Route Manual charts and procedures
 - xiii) Passenger/freight management.
- d) **Section D** Area and role competence, including:
 - i) Knowledge of special areas and procedures

- ii) Adherence to appropriate rules and navigation procedures
 - iii) Situational awareness
 - iv) Climatic characteristics including performance criteria.
- e) **Section E** Area and role competence for Police Operations shall include:
- i) Handling
 - ii) Map reading
 - iii) Police role equipment
 - iv) Low flying
 - v) Search techniques
 - vi) In-flight door opening
 - vii) Landing sites (Landing site directory and Ad Hoc)
 - viii) Cockpit Resource Management
 - ix) Special seating*
 - x) Hover emplane and deplane*
 - xi) Casevac role change*
 - xii) Carriage of dogs*
 - xiii) Carriage of weapons and munitions*
 - xiv) Thermal and video cameras*
 - xv) Searchlight*
 - xvi) Airborne public address*
 - xvii) Tracker*
 - xviii) Downlink/Retractable aerals*
 - xix) Aerial photography*

NOTE: * May be completed either by a theory or practical check.

Sections A, B and C constitute Part 1 of the check and Sections D and E (where appropriate), Part 2. An annual Line Check will cover Parts 1 and 2 of the Line Check form.

For pilots who hold a valid type Line Check and are detached to a different area of operations it is permissible for a Training Captain or Chief Pilot on site to validate the Part 2 – Area Competence section, only. This can be in the form of either a flight, where the nature of the operation is significantly different to that at the pilot's base, or simply a thorough ground brief, when the operation is of a straightforward nature. A Line Check form will be required irrespective of how the Part 2 is completed. In either case, validity of the Line Check will be from the date of the Part 1, when a complete check will be required for revalidation purposes.

The Line Check form **must** show a Night section date for recency purposes, otherwise the pilot will be restricted 'Day Only'. The date of a valid Night section from another current type is acceptable and may be entered.

3 Line Training Sequences (Including Initial Line Training)

3.1 Introduction

Pilots undergoing line training may be totally unfamiliar with their new operating environment, or they may be experienced in a role and be simply undergoing type conversion. Training Captains should adapt the syllabus accordingly.

Pilots will have completed the following requirements before line training begins:

Approved conversion course including Operator Proficiency Check

Inclusion of aircraft type in the appropriate licence.

3.2 Ground Syllabus

The following subjects will be covered:

Landing sites	<ul style="list-style-type: none"> Heliport dimensions Identification of sites Landing and take-off techniques Obstacle clearances Sloping ground landings Emergency area dimensions Crash and rescue equipment Lighting requirements Aircraft operating weight
Overland operations	<ul style="list-style-type: none"> Nature of task Standard routes Global Positioning System (GPS, area navigation and flight planning) Map preparation and reading Nature of terrain Manoeuvring and limited power technique Power assessment Diversions, bad weather and safe routes Let down aids and procedures Weather minima and forecasting Minimum heights Position reporting Radio and nav procedures Freight handling Standard fuel loads and reserves Autorotation techniques Rescue organisation

Aircraft equipment	<ul style="list-style-type: none"> Radio and navaid installations Emergency packs Emergency locator beacons Load configurations Passenger handling including PA and visual signals Crash procedure and evacuation Cargo tie-downs Particle separators Aircraft blanks Gust locks Tie downs
Aircraft performance	<ul style="list-style-type: none"> Local climate and topography Prediction of performance Limitations of temperature and height Relevance of avoid curve areas FOD, dust and debris Compressor washing Power assurance procedures Topping and acceleration checks
Practical instruction	<ul style="list-style-type: none"> Fuel testing Air/ground distress signals Fire, smoke and light signals Survival techniques Aircraft overnight security Documentation Calculating payloads/load sheets

For specialist roles, variations will be covered in the appropriate part of the Operations Manual.

4 Initial Line Training and Initial Line Check

The initial line training is carried out on a flight, with only CAA approved passengers. It is mainly concerned with the operational role including landing and take-off techniques and practice at sites which afford restricted access and space and with significant obstacles. The conduct of route flying which involves knowledge of topography is also essential and will include emergencies such as engine failure and autorotation. The instruction should include the following:

Departure from base	<ul style="list-style-type: none"> Standard take-off techniques Conforming with track and altitude conventions ATC liaison
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En route	Use of radio, nav aids and maps Position reporting and Communications Appreciation of weather and wind CRM
Destination	Visual let down Approach and landing techniques Manoeuvring and obstacle clearance ATC liaison Take-off techniques Limited power techniques Confined area techniques Fuel uplifts Departure procedures
Return to base	Let down procedures including bad weather Parking areas Documentation and security

A trainee pilot must complete a round trip, representative of the routine task, as a minimum requirement. The Training Captain responsible must use his judgement to include those elements which are considered essential for the initial Line Check and to decide on the appropriate number of sectors flown. He will take into account the variety and nature of the likely destinations that the pilot will experience.

4.1 **Police Operations**

Pilots new to police operations will require Initial line training in the use of the aircraft for particular operations such as pursuits and surveillance, also in the operation of standard police role equipment such as thermal imaging/T.V. systems, searchlights and public address systems. This training shall be of not less than 3 hours duration of which not less than 1 hour shall be at night, this period may include the Initial Line Check. Line consolidation flying consisting of four sectors (normally of not less than 40 minutes in length), should then follow, the last of these sectors may constitute the Final Line/Area Competency Check.

Pilots new to units with operating areas containing unfamiliar environments such as mountainous terrain, or airspace with complex ATC structures, shall require a period of line consolidation training prior to commencing operational flying at the unit, the nature and extent of the training will depend on the individual pilot's background and experience.

4.2 **GPS**

A pilot must undergo training in the use of GPS equipment before operating an aircraft that is equipped with GPS. This training will consist of:

- i) The theory of how GPS works
- ii) The practical use of the aircraft equipment

The theory lecture will cover:

- The derivation of position information
- A review of the errors in the system
- How these errors can be reduced
- An explanation of differential GPS

The practical lecture will cover:

- Use of the equipment and controls
- The information available to the operator
- How the databases are accessed
- How to add/amend waypoints and routes

Appendix C Periodic Training and Testing – Police Observers

1 Line/Area Competency Check

A Police observer shall pass a Line/Area Competency Check in the aircraft operated by, and in the area of operations of, the unit to which the observer is attached on completion of initial training and local procedures courses. The check will include the operation of police role equipment normally fitted to the aircraft. The observer shall be required to pass a further check following completion of a period of supervised continuation training or within 6 months of the first check, whichever is the earlier. The period of validity of a Line Check/Area Competency Check shall be 12 calendar months, in addition to the remainder of the month of issue. The Line Check form must show a night section where the observer is required to operate at night. The date of a valid night section from another current type is acceptable for this purpose.

Where, in the course of normal operations, a police observer flies in more than one aircraft type, he shall be required to pass the Line/Area Competency Check in only one of these where the types are considered similar; successive checks should use each type in turn. Where the aircraft types are considered dissimilar, the police observer shall undergo a test in each type at normal intervals. The check shall be carried out by an observer training officer and may be combined with a pilot Line/Area Competency Check. It shall be recorded on a proforma. The test of the observer training officer shall be carried out by another observer training officer, the UEO (if a qualified police observer) or a Line Training Captain or TRE of the unit.

The examiner shall pay particular attention to the use of role equipment and associated operating procedures, when such are set out in the PAOM Part 2, as applicable between the pilot(s), observers and other task specialists.

CAA-agreed passengers may be carried.

2 Emergency and Survival Procedures Check

An observer shall be required to pass the operator's Emergency and Survival Procedures Check prior to commencing initial training and local familiarisation and procedures courses. The period of validity of an E & S Check shall be 12 calendar months, in addition to the remainder of the month of issue.

The test shall be carried out by either an observer training officer or a training captain and shall consist of oral, written and practical examinations. The test of the observer training officer shall be carried out by another observer training officer, the UEO (if a qualified police observer) or a Line Training Captain or TRE of the unit.

A copy of the questions and answers that relate to each written examination shall be preserved for at least three years.

For each aircraft type, the record, content and period of validity of the check are identical to those that apply to a pilot.

Additionally, the examiner shall pay attention to the quality of the observer's briefing to passengers and his regard for the in-flight safety of passengers.

The Triennial E & S shall be conducted on a three year basis as specified in paragraph 1.2.3.4 of Part D.

3 Certificate of Special Operational Competency

A police aircraft is likely to operate at times in roles that involve the use of special equipment and techniques, including winching, carriage of underslung loads and flights making use of equipment such as night vision goggles. Before being declared able to undertake such roles, an observer shall complete an appropriate course of training and pass the test for a Certificate of Special Operational Competency. The training and test shall be conducted by the observer training officer, a Line Training Captain or TRE of the unit. The test of the observer training officer shall be carried out by another observer training officer, the UEO (if a qualified police observer), a Line Training Captain or TRE of the unit. The certificate shall remain valid for 12 months.

4 Reserve and Part Time Air Observers

Police air observers who have received initial training but are not full time members of an air support unit (i.e. acting in a reserve role or in a force which has yet to establish a permanent air support unit), shall be subjected to the same Line/Area Competency Checks, Emergency and Survival Procedures Checks and tests for a Certificate of Special Operational Competency as detailed for full time air observers. They shall receive appropriate and sufficient training in preparation for the checks and tests.

5 Police Observer

5.1 Initial Training

On completion of the Initial Air Observers Training Course the observer shall be required to pass a ground examination.

5.2 Ground Examinations

The operator shall preserve each completed examination paper for a period of at least two years.

5.3 Type Conversion

The observer training officer shall ensure that the observer under training is familiar with the basic passenger briefing and emergency procedures and has passed the Emergency and Survival Procedures Check prior to starting training in an operational role.

NOTE: The training syllabus contained in the Police Air Observers Manual of Guidance should be followed, although it may be modified to suit local requirements.

5.4 Special Operations Training

As for a pilot, an observer requires training in special operational roles such as flight operations using NVG, winching or the carriage of underslung loads. The observer training officer shall arrange for suitable training and testing to take place and be recorded on a Certificate of Special Operations Competency.

The training/testing syllabus shall be set out in the PAOM Part 2.

6 Police Observer Training Officer

6.1 Minimum qualifications:

Three months' experience as an observer on police air operations.

6.2 Responsibilities:

- a) Preparation of a course of ground and flying training for each aircraft type. The syllabus shall be included in the PAOM Part 2.
- b) Line/Area Competency Check (Observer);
- c) Emergency and Survival Procedures Check (Observer);
- d) Role equipment training;
- e) Training in care of passengers;
- f) Special Operations Check (Observer);
- g) Maintenance of observer training records.

Item	Remarks	Required by	Validity	Reference
OPC	Alternate day and night sections	All pilots	6 months + remainder of the month of issue. If issued within final three months of validity of previous OPC, valid for 6 months from expiry date of previous OPC.	JAR-OPS 3.965
Licence Proficiency Check (LPC)	Day or night	All pilots	12 months plus remainder of month of issue. If issued within the final three calendar months of the validity of a previous LPC, valid for 12 months from expiry date of previous LPC.	JAR-FCL Subpart F
Instrument Rating	Type specific (to be combined with LPC)	All pilots operating IFR flights	12 months plus remainder of month of issue. If issued within the final three calendar months of the validity of a previous check, valid for 12 months from the expiry date of previous check.	JAR-FCL Subpart E
Line Check	Type specific Night validates day. Initial must be non-operational	All pilots and observers	12 months plus remainder of the month of issue. If issued within final three months of validity of previous Line Check, valid for 12 months from expiry date of previous Line Check.	JAR-OPS 3.965
Emergency and Safety Equipment	E & S	All pilots and observers	12 months plus remainder of the month of issue. If issued within final three months of validity of previous E & S Check, valid for 12 months from expiry date of previous E & S check.	JAR-OPS 3.965
Life-raft Fire Extinguisher Smoke Emergency Exit Jettison/Certificate of Release to Service		All pilots and observers	36 months plus remainder of the month of issue. If issued in the final three months of validity of previous checks then valid for 36 months from the expiry date of previous checks.	Appendix 1 to JAR-OPS 3.965
Special Competence Check		All pilots and observers so qualified	12 months plus remainder of the month of issue. If issued within the final three months of validity of previous check, valid for 12 months from expiry date of previous check.	