Safety Regulation Group

Civil Aviation Authority

CAP 686

Corporate Code of Practice (Helicopters)

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Acronyms

Acronym	Meaning
AD	Airworthiness Directives
ADF	Automatic Direction Finder
AIC	Aeronautical Information Circulars
ALARP	As Low As is Reasonably Practicable
APS	Aircraft Prepared for Service (Mass)
ATCC	Air Traffic Control Centre
ATPL(H)	Airline Transport Pilot Licence (Helicopters)
ATS	Air Traffic Services
C of G	Centre of Gravity
CANPS	Civil Aircraft Notification System
CAVOK	Cloudbase & Visibility OK
CHIRPS	Confidential Human Factors Incident Reporting System
CPL(H)	Commercial Pilot Licence (Helicopters)
CRM	Crew Resource Management
CRS	Certificate of Release to Service
CVR	Cockpit Voice Recorder
DH	Decision Height
DOM	Dry Operating Mass
ETA	Estimated Time of Arrival
FATO	Final Approach and Take-Off (Area)
FDR	Flight Data Recorder
FOD	Foreign Object Damage
FTL	Flight Time Limiations
HF	High Frequency
HI/MI	High Intensity/Medium Intensity (Lighting)
HOM	Heliport Operating Minima
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
IFV	In-Flight Visibility
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
IR	Instrument Rating
IRE	Instrument Rating Examiner
LACC	London Area Control Centre
LLZ	ILS – Localiser only
LVP	Low Visibility Procedures
MAPt	Missed Approach Point

MDA.....Minimum Descent Altitude
MDH.....Minimum Descent Height
MEL.....Minimum Equipment List
METAR.....Meteorological Actual Report
MLS.....Microwave Landing System
MOCA .....Minimum Obstruction Clearance Altitude
MORA .....Minimum Off-Route Altitude
MORS.....Mandatory Occurrence Reporting Scheme
MSA .....Minimum Sector Altitude
MSA .....Minimum Safe Altitude
NDB.....Non-Directional Beacon
NOTAM .....Notices To Airmen
OCA.....Obstacle Clearance Altitude
OCH.....Obstacle Clearance Height
OPC.....Operator Proficiency Check
P & Ps.....Policies & Principles (SMS)
PAPI.....Precision Approach Path Indicator
PAR .....Precision Approach Radar
PF .....Pilot Flying
PIC.....Pilot-in-Command
PINS .....Pipeline Inspection Notification System
Plog .....Pilot Log
PNF.....Pilot Non-Flying
RA .....Risk Assessment
RVR .....Runway Visual Range
SAR .....Search and Rescue
SCUBA .....Self-Contained Underwater Breathing Apparatus
SMS.....Safety Management System
SRA .....Surveillance Radar Approach
SSA.....Sector Safety Altitude
STAR .....Standard Arrival (procedure)
TAF.....Terminal Aerodrome (met) forecast
TLOF .....Touch-down and Lift Off (Area)
TMA.....Terminal Area
TRE.....Type Rating Examiner
VDF.....Very High Frequency Direction Finding (System)
VFR.....Visual Flight Rules
VHF.....Very High Frequency
VMC .....Visual Meteorological Conditions
VOR.....VHF Omni directional Range

Preface

Users of this specimen Corporate Code of Practice should note the following:

1 It is the responsibility of the Operator to satisfy himself as to the suitability of each provision of the Corporate Code of Practice to his particular operation and to make any necessary amendments and additions.

2 Civil helicopter operations are governed by the requirements contained in The Air Navigation Order 2005 and the Rules of the Air Regulations 2007.

3 Corporate aviation is considered to be an air transport operation on behalf of a company in connection with the transport of passenger(s) or cargo for that company, or another member of the same group of companies, in the private category, where the crew members receive valuable consideration (i.e.remuneration) for their services as crew members.

4 The aim of the Code of Practice is to give guidance on owning and operating a helicopter for corporate purposes to those companies whose principle place of business is in the United Kingdom and the Channel Islands.

5 The Code of Practice is mainly intended to apply to the operation of multi-engine IFR equipped helicopters operating with less than nineteen passengers and normally flown by a single pilot: it has also been structured to be easily adjusted to cover any corporate or aerial work flight.

6 Part B (Helicopter Operating Matters – Type Related), and Part C (Route and Aerodrome Instructions and Information) should be composed by the Operator.

7 The Code of Practice has been produced in association with the British Helicopter Advisory Board, the trade association for the helicopter industry in the United Kingdom.

8 Operators and pilots are recommended to read the CAA guide to Public Transport and Aerial Work available at www.caa.co.uk/docs/122/summary_of_public_transport.pdf

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Part A General/Basic

Section 0 Administration and Control of the Code of Practice

1 Introduction

1.1 The Company code of practice is modelled on the requirements contained in JAR-OPS Part 3.

1.2 The code is for the use and guidance of all Company operating staff, who are to ensure that all flights are planned and executed in accordance with its policies and requirements.

1.3 The code is broadly sub-divided into the following Parts which may be supplemented by such other publications as the helicopter flight manual or pilots operating handbook, and commercially-produced route and airways manuals:

Part A General/Basic Information, Requirements and Operations

Part B Helicopter Type Operating Procedures and Requirements. (This Part may refer to, but not necessarily duplicate, information in the helicopter flight manual or pilots operating handbook.)

Part C Flight Guide (This Part will normally be a commercially-produced route guide/ airways manual.)

Part D Safety Management Systems and Risk Assessments

Part E Training Manual

1.4 Where necessary, specific terms are defined at the beginning of the sections to which they are appropriate.

1.5 For brevity, the pronoun he is used throughout. Where appropriate, the pronoun she should be inferred or assumed.

2 System of Amendment and Revision

2.1 **Amendment**

The code of practice is issued on the authority of the Company, and the chief pilot will authorise all amendments to it, as required by the Company. All proposed amendments should be made to him. Additional operational instructions and information will be made the subject of Flying Staff Instructions.

2.2 **Distribution**

Copies of the Code of Practice will be distributed as follows:

Copy No.	Name	Appointment
1 Master copy		Chief Pilot
2		
3		

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Section 1 Organisation and Responsibilities

(Should be prefaced with a map and co-ordinates of the operating region.)

1 Organisational Structure

A company organisation should cover the following areas of responsibility:

General Manager

Operations Manager

Flight Safety Officer

The responsibilities and duties of the above appointments should be detailed in the relevant paragraphs.

2 Nominated Post Holders

The names and contact telephone numbers of each nominated post holder responsible for flight operations, the maintenance system, crew training and ground operations should be listed here.

3 Responsibilities and Duties of Operations Management Personnel

The responsibilities and duties of personnel covered by paragraphs 1 and 2 above should be listed in this paragraph.

NOTE: The Responsibilities and Duties must give clear direction as to delegation procedure and should also take account of at least the following subjects where relevant:

Discipline

Monitoring operations for compliance with legislation

Delegation of responsibility

Accepting/signing for training/testing on behalf of the company

Training of staff other than flight crew members

Content and amendment of the Code of Practice

Preparation and monitoring the validity of:

- Heliport Operating Minima (HOM)
- Performance data
- Loading instructions and Dry Operating Mass (DOM) data
- Commanders flight briefs
- Operational flight plans
- Allowable deficiencies/MinimumEquipment List (MEL)
- Checklists

Training Standards:

- Overall responsibility for training
- Overall responsibility for the Safety Management Systems (SMS) and Risk Assessment (RA)

Flight Time Limitations (FTL) Scheme:

Overall responsibility for efficient operation of FTL Scheme

Interpretation

Checking returned documentation to ensure compliance

Processing commander's Discretion Reports

4 Authority, Duties and Responsibilities of the Helicopter Commander

4.1 The Company must nominate one of the pilots to be the helicopter commander for each flight or series of flights.

4.2 **General Responsibilities**

The commander shall take all reasonable steps to:

a) maintain familiarity with relevant United Kingdom and international air legislation and agreed aviation practices and procedures;

b) maintain familiarity with such provisions of the Company Code of Practice as are necessary to fulfil his function.

4.3 **Specific Responsibilities**

The commander shall:

a) be responsible for the safe operation of the helicopter and safety of its occupants and cargo during flight;

b) have authority to give all commands he deems necessary for the purpose of securing the safety of the helicopter and of persons or property carried therein, and all persons carried in the helicopter shall obey such commands;

c) have authority to disembark any person, or any part of the cargo which, in his opinion, may represent a potential hazard to the safety of the helicopter or its occupants;

d) not allow a person to be carried in the helicopter who appears to be under the influence of alcohol or drugs to the extent that the safety of the helicopter or its occupants is likely to be endangered;

e) have the right to refuse transportation of inadmissible passengers, deportees or persons in custody if their carriage poses any risk to the safety of the helicopter or its occupants;

f) ensure that all passengers are fully briefed on:

i) use of the seat belt or harness;

ii) the location and operation of emergency exits;

iii) the method of locating and jettisoning windows;

iv) the method of opening and emergency jettisoning of cabin doors;

v) the method of deploying life rafts and their subsequent operation;

vi) deployment and use of the radio beacon (as applicable);

vii) other type specific safety features;

viii) the need to read the passenger briefing card.

g) ensure that all operational procedures and checklists are complied with, in accordance with the Code of Practice;

h) ensure that the weather forecast and reports for the proposed operating area and flight duration indicate that the flight may be conducted without infringing Company operating minima;

i) decide whether or not to accept a helicopter with unserviceabilities allowed by the MEL;

j) take all reasonable steps to ensure that the helicopter, and any required equipment is serviceable;

k) in the absence of a qualified Company engineer, ensure that helicopter refuelling is supervised with particular attention being paid to:

the correct grade and amount of fuel;
fuel water checks;
fire safety precautions;
checking filler caps for security and correct replacement after refuelling.

l) take all reasonable steps to ensure that the helicopter mass and balance is within the calculated limits for the operating conditions;

m) confirm that the helicopters performance will enable it to safely complete the proposed flight;

n) take all reasonable steps to ensure that whenever the helicopter is taxying, taking off or landing, or whenever he considers it advisable (e.g. in turbulent conditions), all passengers are properly secured in their seats,and all cabin baggage is stowed in the approved stowages;

o) ensure that the documents and manuals in Section 7, paragraph 1.12 are carried and will remain valid throughout the flight or series of flights;

p) ensure that the pre-flight inspection has been carried out;

q) not permit:

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

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

r) maintain a high personal standard of discipline, conduct and appearance as a representative of the company.

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

4.5 The commander has the authority to apply greater safety margins including heliport operating minima (HOM) if he deems it necessary.

4.6 The commander must ensure that, in the event of third party maintenance being required while away from base, the procedures referred to in Section 7, paragraph 1.11.8 are followed.

4.7 The commander must ensure that a continuous listening watch is maintained on the appropriate radio communication frequencies at all times whenever the flight crew is manning the helicopter for the purposes of commencing and/or conducting a flight and when taxying.

Section 2 Operational Supervision and Control

1 Supervision of the Operation by the Company

The Company will appoint a manager or managers to control the numbers of personnel required to operate the numbers and types of helicopter involved. For a small operation, one manager may be capable of supervising the conduct of more than one department. Irrespective of the particular Company structure, the manager(s) must always be in a position to confirm that:

a) crew licences and qualifications are valid for the periods throughout which crew members are scheduled to fly;

b) crew members proficiency has been checked and found satisfactory at the specified intervals;

c) the requisite flight, personnel and maintenance records are being retained, analysed and stored for the statutory periods in order that the Company's established quality control procedures and SMS may be effectively implemented;

d) operations personnel are competent to perform their duties and that levels of competence are monitored.

It is recommended that this supervision form part of a Company Safety Management System which shall include Risk Assessments (see Part E – Safety Management Systems and Risk Assessments).

2 System of Promulgation of Additional Operational Instructions and Information

As stated in Section 0 paragraph 2.1, additional operational instructions and information will be made the subject of Flying Staff Instructions. These will be incorporated in the Code of Practice and brought to the attention of all crew members, and copies will be distributed to all departments on a need-to-know basis. Where internal publicity is required on matters which are not of an operational nature, Administrative Notices will be circulated as required.

3 Accident Prevention and Flight Safety Programme (SMS and RA)

A flight safety awareness programme will be fostered by the circulation of the latest accident reports, incident bulletins, General Aviation Safety Information Leaflets (GASILs) and flight safety literature. Incidents and accidents involving helicopter types or equipment operated by the company will be highlighted, and the appointed Flight Safety Officer will bring to the attention of the appropriate manager(s) any occurrences which indicate that the company's procedures may need revision in the interests of flight safety.

Copies of Mandatory Occurrence Report (MOR) and Airmiss Report pro-formae should be made readily available to all staff.

NOTE: The Flight Safety Officer's responsibilities should be described in Section 1 paragraph 3 and should include at least:

Flight Safety co-ordination;

Accident and Incident procedures;

MOR procedures;

Action on receipt of reports;

Feedback of action/circulation of results;

Processing pilot reports;

Dissemination of information to crews and staff on:

Aeronautical Information Circulars (AICs);
Airworthiness Directives (ADs) (operational aspects);
Notices to Airmen (NOTAMs);
Pipeline Inspection Notices (PINs);
Civil Aircraft Notification Procedures (CANPs)

4 Operational Control

This paragraph should contain a description of the procedures and responsibilities necessary to exercise operational control with respect to safe operations.

Section 3 Crew Composition

1 General

The minimum flight crew to be carried shall never be less than is stipulated in the helicopter's Certificate of Airworthiness and/or the helicopter Flight Manual.

1.1 IFR Operations

1.1.1 The commander and co-pilot (if carried) shall hold a valid instrument rating.

1.1.2 **Single-pilot Crew**

A single-pilot crew may be employed on IFR operations only in helicopters with a maximum approved seating configuration of nine passengers or less, provided that:

a) the pilot has been specifically trained in the single-crew role, with particular reference to cockpit management.

b) all current proficiency checks have been conducted in the single-crew role on the subject helicopter type.

c) the pilot must have the following minimum qualifications and experience prior to employment on an existing operation, or on an operation planned to take place in an environment similar to where item v) experience has been accrued.

i) a valid Commercial Pilot Licence (CPL);

ii) at least 700 hours flight time on helicopters;

iii) at least 300 hours flight time as pilot-in-command (PIC);

iv) at least 100 hours flight experience on helicopters flying by sole reference to instruments and 10 hours as PIC on the type of helicopter;

v) 25 hours total flight experience in the relevant operating environment;

vi) at least 5 IFR flights, including 3 instrument approaches in the single-pilot role on the helicopter type in the last 90 days.

d) helicopter equipment includes a serviceable, certificated autopilot with at least altitude hold and heading mode; a headset and boom microphone with control-column transmit button, and a conveniently-placed, illuminated chart holder.

1.2 Designation of Helicopter Commander

Irrespective of the number of crew carried, one pilot will be nominated to be the helicopter commander for a particular flight or series of flights.

2 Flight Crew Incapacitation

2.1 Where two pilots are carried, the recovery from a detected incapacitation of the handling pilot shall follow the following sequence:

a) The fit pilot must assume control and return the helicopter to a safe flight path.

b) The fit pilot must take whatever steps are possible to ensure that the incapacitated pilot cannot interfere with the handling of the helicopter. These steps may include involving passengers to restrain the incapacitated pilot.

c) The fit pilot must land the helicopter as soon as practicable to ensure safety of the occupants.

2.2 The 'Two Communication' rule of thumb should be invoked to assist in detecting incapacitation. This states that a flight crew member should suspect the onset of incapacitation any time when a pilot does not respond appropriately to a second verbal communication associated with a significant deviation from a standard operating procedure or flight profile.

3 Division of Duties

3.1 The duties of Pilot Flying (PF) and Pilot Non-flying (PNF) are to be divided such that the pilot flying a particular sector is to assume the responsibilities and duties of the PF. These will include making decisions affecting the routine operation of the helicopter and its systems. When the PF is not the commander he is to receive the commanders approval of these decisions before actioning them. In an emergency he should complete the Immediate Actions and call for the Subsequent Actions from the PNF. The commander retains overall responsibility for the helicopter whilst acting as PNF and may revert to PF at any time by taking control from the co-pilot in the normal way. Where two flight crew are carried brief instructions should be included addressing the positive handover of control.

Section 4 Qualification Requirements

1 Description of Licence, Qualification/Competency, Training, Checking Etc.

A description of the required licence, rating(s), qualification/competency (e.g. for routes and aerodromes), experience, training, checking and recency for operations personnel to conduct their duties. Consideration must be given to the helicopter type, the kind of operation and the composition of the crew.

2 Flight Crew

2.1 Commanders

The minimum qualification requirements for pilots to act as commander are:

a) successful completion of an appropriate command course if upgrading;

b) attainment of an operator specified minimum experience level for those pilots upgrading to commander from within the company or for those joining as direct entry commanders;

c) an Airline Transport Pilot's Licence (Helicopters) (ATPL(H));

or

a CPL(H); when operating under IFR as commander, the CPL(H) pilot must have:

i) 700 hours total flight time on helicopters;

ii) 300 hours flight time as PIC on helicopters, of which 100 hours must have been under IFR. The 300 hours as PIC may be substituted by co-pilot hours on a 2 for 1 basis provided these hours were gained within an established two pilot crew concept system described in this manual.

d) valid Instrument Rating (IR) when operating under IFR;

e) valid recurrent checks.

2.1.1 Recency

a) A minimum of 3 take-offs, 3 approaches and 3 landings as handling pilot, in a helicopter or an approved flight simulator of the type to be used, in the preceding 90 days.

b) The period at a) above may be extended up to a maximum of 120 days by line flying under the supervision of a nominated commander.

2.2 Co-Pilots (when applicable)

The minimum qualification requirements for pilots to act as co-pilot are:

a) An ATPL(H) or a CPL(H);

b) Valid IR when operating under IFR;

c) Valid recurrent checks.

2.2.1 Recency

A co-pilot may not carry out take-offs or landings unless he complies with the recency requirements of paragraph 2.1.1.

3 Training, Checking and Supervisory Personnel

3.1 The following personnel have a training, checking and supervisory function with respect to flight crew:

Flight Operations Director;
Chief Pilot;
Training Captains.

Section 5 Crew Health Precautions

1 Alcohol

1.1 Alcohol has been a contributory factor to a number of aircraft accidents. It is well established that even small amounts of alcohol in the blood produce a significant and measurable deterioration in the performance of skilled tasks. JAR-OPS specifies a maximum blood alcohol limit of 20 milligrams per 100 millilitres of blood. This is a quarter of the maximum UK legal driving limit. Alcohol is removed from the body at a relatively constant rate (approximately 15 milligrams per 100 millilitres, or one 'unit', each hour) regardless of the concentration present. Pilots should not commence duty for at least 8 hours after taking small amounts of alcohol and proportionally longer if larger amounts are consumed. It should also be remembered that alcohol can have delayed effects on blood sugar levels and the balance mechanism of the inner ear. The effects on the inner ear can be prolonged and increase susceptibility to disorientation and even motion sickness. It would be prudent for a pilot to abstain from alcohol for at least 24 hours before flying.

1.2 Attention is drawn to the following Sections in the Railways and Transport Safety Bill 2003:

a) **Section 89 Being unfit for duty**

(1) A person commits an offence if:

(a) he performs an aviation function at a time when his ability to perform the function is impaired because of drink or drugs.

(2) In this section 'drug' includes any intoxicant other than alcohol.

b) Section 90 Prescribed limit

(1) A person commits an offence if:

(a) he performs an aviation function at a time when the proportion of alcohol in his breath, blood or urine exceed the prescribed limit.

(2) The prescribed limit of alcohol is:

(a) in the case of breath, 9 micrograms of alcohol in 100 millilitres;

(b) in the case of blood, 20 milligrams of alcohol in 100 millilitres; and

(c) in the case of urine, 27 milligrams of alcohol in 100 millilitres.

1.3 Crew Members shall not consume alcohol while on standby or during the flight duty period.

1.4 Additional guidance is available in AIC 99/2004 (Pink 72) at www.ais.org.uk/aes/pubs/aip/pdf/aic/4P072.PDF

2 Narcotics and/or Drugs

The use of narcotics and/or drugs which have not been prescribed by a medical practitioner is expressly forbidden at any time. This guidance also applies to sleep inducing drugs.

3 Medication

Many medications may have adverse effects on the nervous system, which may be more marked in flight than on the ground. As a general rule, if a crew member finds it necessary to take,or has been prescribed some form of medication, his fitness to fly must be suspect, and he shall seek aero-medical advice before commencing or continuing with flying duties.

Additional guidance is available in AIC 99/2004 (Pink 72) at www.ais.org.uk/aes/pubs/aip/pdf/aic/4P072.PDF

4 Immunisation

Medical advice is to be sought concerning the period to be observed before returning to flying duties following immunisation.

5 Blood Donation

Crew members should not normally act as blood donors. If, for any reason, they have done so, they are to advise the Company immediately following each donation, and shall not undertake flying duties for at least 24 hours after they have given blood.

6 SCUBA Diving

Crew members whose sporting activities include SCUBA diving to a depth exceeding 10 metres shall not fly within 48 hours of completing such diving activity.

7 Meals

Sensible precautions should be taken to avoid the risk of food poisoning to reduce the possibility that both pilots could become incapacitated.

8 Sleep and Rest

Although the controls on flight and duty periods are intended to ensure that adequate opportunities are provided for crew members to obtain rest and sleep, individuals should ensure that proper advantage is taken of such opportunities. A crew member shall not perform duties in flight if he knows or suspects that he is suffering from fatigue, or feels unfit to the extent that the flight may be endangered.

9 Fitness

No individual shall act as a member of the crew of a Company helicopter if, for any reason, his physical or mental condition is such that it could endanger the safety of the helicopter or its occupants.

10 Surgical Procedures

Aero-medical advice should be sought prior to returning to flying duties following any surgical procedure.

Section 6 Flight Time Limitations (FTL)

1 General Principles Applied to Control of Flight, Duty and Rest Time

1.1 The prime objective of an FTL scheme is to ensure that crew members are adequately rested at the beginning of each flying duty period, and whilst flying are sufficiently free from fatigue so that they can operate to a satisfactory level of efficiency and safety in all normal and abnormal situations.

1.2 Planned schedules should allow for flights to be completed within the maximum recommended flying duty period. However, it is recognised that on occasion a planned flight may experience unforeseen delays. Other factors which should be considered when planning duty periods include:

a) the allocation of work patterns which avoid such undesirable practices as alternating day/night duties and the positioning of crews such that a serious disruption of established sleep patterns occur;

b) planning days off and notifying crews well in advance.

2 Definitions

a) **Adequate facilities** A quiet and comfortable place not open to the public.

b) **Duty period** A period which starts when the crew member is required by the company to report for a duty and ends when the crew member is free from all duties.

c) **Flight duty period** A period which commences when an operating crew member is required to report for a duty period that includes a flight and which ends at the end of the flight on the final flight on which the crew member is an operating crew member.

d) **Flight time** The time between a helicopter first moving from its parking place for the purpose of taking off until it comes to rest on the designated parking position until all engines and the rotor are stopped.

e) **Local night** A period of 8 hours falling between 2200 hrs and 0800 hours local time.

f) **Split duty** A flight duty period which consists of two or more duties separated by a break.

g) **Suitable accommodation** A suitably furnished bedroom, with single occupancy if required by the crewmember, which is subject to minimum noise, is well ventilated and should have the facility to control the levels of light and temperature.

3 Limitations

3.1 Flight time

3.1.1 A company should ensure that the total flight time on which an individual flight crew member is assigned as an operating crew member does not exceed:

a) 900 hours in any 12 consecutive months;

b) 100 hours in any 28 consecutive days.

3.2 Duty periods

3.2.1 A company should ensure that the total duty periods to which an individual flight crew member is assigned do not exceed:

a) 200 hours in any 28 consecutive days;

b) 60 hours in any 7 consecutive days.

3.3 Flight duty periods

3.3.1 The allowable flight duty period on the day should not exceed 12 hours for a two pilot crew or 10 hours for a single pilot crew.

3.3.2 Should a flight duty period encroach upon the window of circadian low, 0200 to 0500 hours, the allowable flight duty periods mentioned in paragraph 3.3.1 above should be reduced by two hours to 10 hours and 8 hours respectively.

3.4 Split duty credit

3.4.1 When a flight duty period consists of 2 or more duties separated by a break(s) the flight duty period may be extended by up to the length of the break(s) provided the total flight duty period does not exceed 20 hours.

3.4.2 Where a break is 6 hours or more suitable accommodation should be provided. In all other circumstances adequate facilities should be provided.

3.5 Rest requirements

3.5.1 Before the start of a flight duty period a crew member should have completed a rest period at least as long as the preceding duty period, or 11 hours, whichever is the greater.

3.5.2 Should it be necessary to reduce the rest below that specified in paragraph 3.5.1 above the reduced rest period should permit a minimum of 8 hours bed rest.

3.5.3 To allow recovery from an accumulation of fatigue over several days a flight crew member should be allowed an extended rest of either:

a) one 36 hour period including 2 local nights within 7 consecutive days; or

b) one 60 hour period including 3 local nights within 10 consecutive days.

In addition a flight crew member should have an average of at least 8 days off in each consecutive 28 days averaged over 3 such periods.

Section 7 Operating Procedures

1 Flight Preparation Instructions

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

i) the helicopter is airworthy;

ii) the expected weather conditions at the destination and any alternates will be at or above the applicable landing minima specified in paragraph 1.3.

iii) the instruments and equipment required for the flight to be conducted are available;

iv) the instruments and equipment are in operable condition except as provided in the MEL;

v) those parts of the code of practice which are required for the conduct of the flight are available;

vi) the documents, additional information and forms required to be available by paragraph 1.12 are on board;

vii) current maps, charts and associated documents or equivalent data are available to cover the intended operation of the helicopter including any diversion which may reasonably be expected;

viii) ground facilities and services required for the planned flight are available and adequate;

ix) the provisions specified in the code of practice in respect of fuel and oil requirements,minimum safe altitudes,heliport operating minima and availability of alternate heliports,where required,can be complied with for the planned flight;

x) the load is properly distributed and safely secured;

xi) the mass of the helicopter, at take-off, will be such that the flight can be conducted in compliance with paragraphs 1.1.2 to 1.1.9 inclusive and Part B Sections 4, 5 and 6; and

xii) any operational limitation in addition to those covered by sub-paragraphs ix) and xi) above can be complied with.

1.1 Minimum Flight Altitudes

1.1.1 General

When a helicopter is being operated the minimum altitude/flight level at which it is permitted to fly may be governed by national regulations, air traffic control requirements, or by the need to maintain a safe height above any significant terrain or obstacle enroute.Whichever of these requirements produces the highest altitude/ flight level for a particular route will determine the minimum flight altitude for that route.The procedures outlined in the following paragraphs are to be followed when calculating the minimum altitude for the safe avoidance of en route terrain and obstacles.

1.1.2 **Minimum Obstacle Clearance Altitude (MOCA) – KSS Formula**

1.1.2.1 MOCA is the sum of:

a) the maximum terrain or obstacle elevation, whichever is the higher, plus:

b) 1000 feet for elevations up to and including 6000 feet, or:

c) 2000 feet for elevations exceeding 6000 feet, rounded up to the next 100 feet.

1.1.2.2 The lowest IFR MOCA shall not be less than 2000 ft overland. For overwater operations, the lowest IFR MOCA shall not be less than 1500 ft, assuming that the highest known obstacle does not exceed 500 ft.

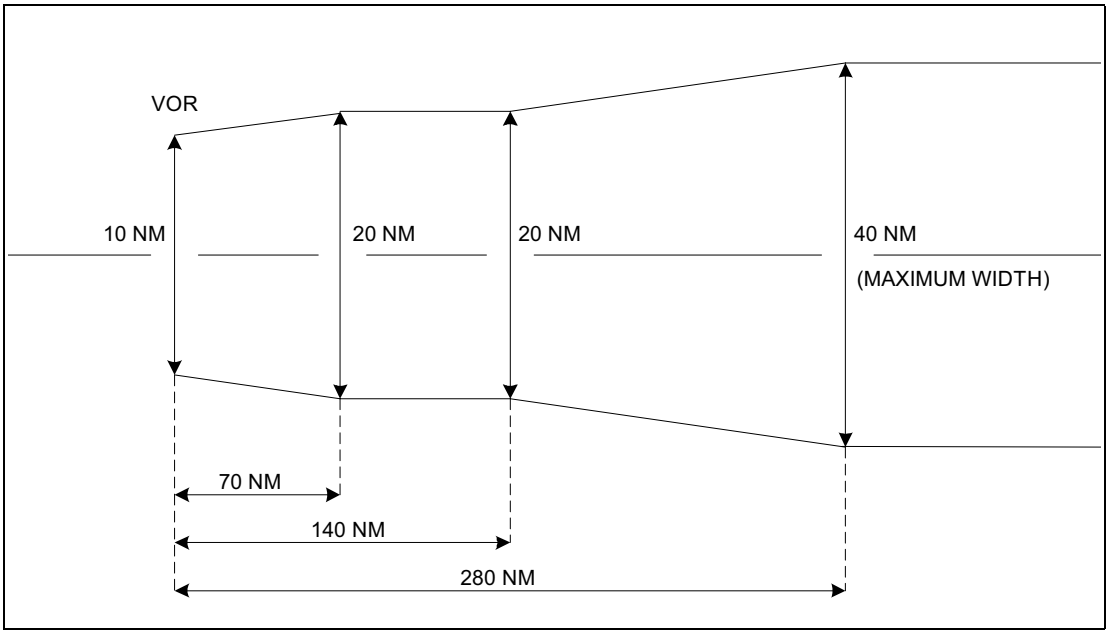
1.1.2.3 In relation to a VHF Omni directional Range (VOR) station, the corridor width within which terrain/obstacles must be considered is defined as:

a) starting 5 NM either side of the VOR, diverging 4 degrees from the centreline until a width of 20 NM is reached at 70 NM out;

b) a constant width of 20 NM from 70 NM out until 140 NM out;

c) diverging 4 degrees from 140 NM out until a width of 40 NM is reached at 280 NM out, then remaining constant at 40 NM.

Figure 1



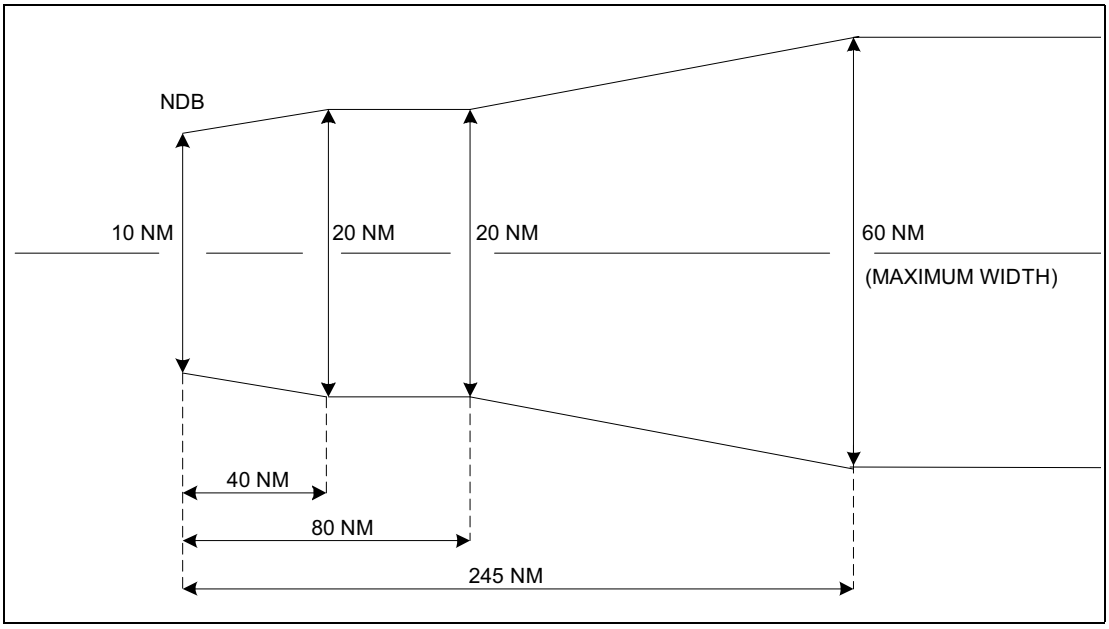
1.1.2.4 In relation to an NDB, the corridor width is:

a) starting 5 NM either side of the station, diverging 7 degrees until a width of 20 NM is reached 40 NM out;

b) a constant width of 20 NM from 40 NM out until 80 NM out;

c) diverging 7 degrees from 80 NM out until a width of 60 NM is reached 245 NM out, then remaining constant at 60 NM.

Figure 2



NOTE: Care should be taken to select the appropriate MOCA when corridors overlap.

1.1.3 Minimum Off-route Altitude (MORA)

MORA is calculated for an area bounded by every Lat/Long square on the Radio Facility Chart/Aeronautical Chart and for each square is the sum of:

a) the maximum terrain or obstacle elevation, whichever is the higher, plus:

b) 1000 feet for elevations up to and including 6000 feet, or

c) 2000 feet for elevations above 6000 feet.

1.1.4 Allowance for Wind Speed

When operating within 20 NM of terrain whose maximum elevation exceeds 2000 feet above mean sea level (a.m.s.l.), commanders are to increase the standard MOCA/MORA by the amounts given in the following table, according to the wind speed over the route:

Terrain Elevation	Wind speed in Knots			
	0 – 30	31 – 50	51 – 70	More than 70
2,000 –8,000 feet	+500 ft	+1000 ft	+1500 ft	+2000 ft
More than 8,000 feet	+1000 ft	+1500 ft	+2000 ft	+2500 ft

1.1.5 Temperature Correction

When the surface ambient temperature en route is well below the ISA value, minimum safe altitudes must additionally be corrected as follows:

Surface Temperature	Correction to MOCA/MORA
ISA – 16ºC to ISA – 30ºC	MOCA/MORA plus 10%
ISA – 31ºC to ISA – 50ºC	MOCA/MORA plus 20%
ISA – 51ºC or below	MOCA/MORA plus 25%

1.1.6 Performance General

Part B of the Operations Manual should cover, for the appropriate helicopter performance class or classes, the following:

a) applicability of performance classifications;

b) terminology with full coverage of these terms likely to be relevant to individual operations; and

c) restrictions to operations imposed by performance classification(s); such restrictions may include route, weather minima, allowable distance offshore, proposed destination exclusion (e.g. elevated heliport or helideck) and prohibition of night operations.

1.1.7 Helicopter Performance Classes

For performance purposes, helicopters are grouped into the following classes:

a) **Class1** A helicopter with performance such that, in case of critical power-unit failure, it is able to land on the rejected take-off area or safely continue the flight to an appropriate landing area, depending on when the failure occurs.

b) **Class 2** A helicopter with performance such that, in the case of critical power-unit failure, it is able to safely continue the flight, except when the failure occurs prior to a defined point after take-off or after a defined point before landing, in which case a forced landing may be required.

c) **Class 3** A helicopter with performance such that, in case of power-unit failure at any point in the flight profile, a forced landing must be performed.

1.1.8 Performance Classes 1 and 2

In addition to meeting the minimum flight altitude requirements already listed, helicopters operated in Performance Classes 1 and 2 must be capable of meeting the following performance requirements.

1.1.8.1 **En-route Critical Power Unit Inoperative**. The critical power unit inoperative en-route flight path, appropriate to the meteorological conditions expected for the flight shall comply with either sub-paragraph a) or b) below, at all points along the route:

a) when it is intended that the flight will be conducted at any time out of sight of the surface, the mass of the helicopter permits a rate of climb of at least 50 ft/min with the critical power unit inoperative at an altitude of at least 300 m (1000 ft) [600 m (2000 ft) in areas of mountainous terrain] above all obstacles along the route within 18.5 km (10 NM) on either side of the intended track. When it is intended that the flight will be conducted by day, Visual Meteorological Conditions (VMC) and in sight of the surface, the same requirement applies except that only obstacles within 900 m (½ NM) on either side of the route need be considered;

b) the flight path permits the helicopter to continue flight from the cruising altitude to a height of 300 m (1000 ft) above the heliport where a landing can be made in accordance with landing performance requirements. The flight path clears vertically, by at least 300 m (1000 ft) [600 m (2000 ft) in areas of mountainous terrain] all obstacles along the route within 18.5 km (10 NM) on either side of the intended track. The critical power unit is assumed to fail at the most critical point along the route. When it is intended that the flight will be conducted by day, VMC and in sight of the surface, the same requirement applies except that only obstacles within 900 m (½ NM) on either side of the route need be considered. Drift-down techniques may be used.

The following additional considerations apply:

c) account shall be taken of the effect of wind on the flight path;

d) fuel jettisoning is planned to take place only to an extent consistent with reaching the heliport with the required fuel reserves and using a safe procedure;

e) fuel jettisoning is not planned below 1000 ft above terrain;

f) when showing compliance with a) and b) the width margins may be reduced to 9.25 km (5 NM) if the required navigational accuracy can be achieved.

1.1.9 Performance Class 3

With all power units operating, the helicopter shall have the performance to continue along its intended route or to a planned diversion without flying at any point below the appropriate MOCA.

The following additional considerations apply:

a) flights should not be conducted when the ceiling is less than 600 ft above the local surface or the visibility is less than 800 m by day and 5 km at night and shall always be conducted in sight of the surface;

b) flights should not be operated overwater in a hostile environment beyond safe forced landing distance from land for more than 10 minutes at normal cruise speed in any one flight.

NOTE: The following definitions apply to b) above:

Hostile Environment. An environment in which a safe forced landing cannot be accomplished because the surface is unsuitable or the aircraft occupants cannot be adequately protected from the elements or search and rescue response/capability is not provided consistent with anticipated exposure or there is unacceptable endangering of persons or property on the ground. In any case, the following areas shall be considered hostile:

a) For overwater operations, the open sea areas North of 45N and South of 45S: and

b) Those parts of a congested area without adequate safe forced landing areas.

Non-hostile Environment. An environment in which a safe forced landing can be accomplished and the aircraft occupants can be protected from the elements; and search and rescue response/capability is provided consistent with the anticipated exposure. In any case, the following areas shall be considered non-hostile:

a) For overwater operations, any area of water other than an open sea area; and

b) Those parts of a congested area with adequate safe forced landing areas.

1.2 Criteria for Determining the Usability of Heliports

1.2.1 It is a requirement that all heliports which are selected as destinations or alternates are adequate and suitable in all respects for the types of helicopters which are intended to use them. In this context, adequate infers that the Final Approach and Take-Off area (FATO) dimensions and significant obstacles in the local area are such that the performance requirements for the nominated helicopter type will invariably be met at the weights at which the helicopter is planned to land and takeoff, and in the conditions which may be expected to exist at the time of operation. For night operations the pilot should have conducted a recce by day and must ensure that ground lighting is available to illuminate the FATO and any obstacles. An adequate heliport is one which is equal to or exceeds the following dimensions:

a) For VMC day operations:

i) when measured on the ground – FATO diameter should be at least 1.5D;

ii) when not measured on the ground – FATO diameter should be at least 2D.

b) For VMC Night operations:

i) when measured on the ground – FATO diameter should be at least 2D;

ii) when not measured on the ground – FATO diameter should be at least 4D.

NOTE: D is the overall length of the helicopter including the rotor blades.

1.2.2 For operations under Instrument Flight Rules, an approach procedure must be available for each destination and alternate heliport, with up-to-date copies of the approach plates available to each pilot. Specific heliport operating minima are similarly to be made available to the flight deck crew. These may be contained in the Companys standard en-route guide.

1.2.3 When arrival at/departure from a particular destination is intended to be carried out under visual flight rules, minimum operating visibilities and cloud base are to be clearly stated. Where a VFR flight is intended,this will imply compliance with the VFR minima stated in this operations manual. Any particular hazards such as gliding activities at an aerodrome, or free lane entries to a heliport surrounded by controlled airspace, are to be included in the flight preparation.

1.3 Methods for the Determination of Heliport Operating Minima for VFR and IFR Flights, Onshore and Over Water

1.3.1 VFR

a) Flights shall be conducted in accordance with visual flight rules. Flight visibility may be reduced to 800 m for short periods during daylight when in sight of land if the helicopter is manoeuvred at a speed that will give adequate opportunity to observe other traffic and any obstacles in time to avoid a collision.

b) Flights shall not be conducted overwater out of sight of land when the flight visibility is less than 1500 m during daylight and less than 5 km by night.

c) Special VFR flights shall not normally be commenced when the visibility is less than 3 km and not otherwise conducted when the visibility is less than 1.5 km.

d) A flight to a helideck or elevated heliport shall not operate when the mean wind speed at the helideck or elevated heliport is given as 60 kt or more.

1.3.2 **IFR**

1.3.2.1 Specific minima for particular combinations of approach aid, runway or FATO and lighting will normally be as contained in the Company route guide for the airfield or heliport concerned or, if required, as stated in the commanders flight brief.

1.3.2.2 Departure minima for a given heliport shall be not less than those for landing for the same heliport unless a take-off alternate heliport (not more distant than 1 hours flight time at normal twin engine cruising speed for flight in IMC) is available which meets all the relevant landing minima and performance requirements for the helicopter type. If there is a requirement to see and avoid obstacles on departure and/or for a forced landing, a cloud ceiling shall be specified in addition to the Runway Visual Range (RVR)/visibility. Minima must be high enough to ensure that there is sufficient guidance to enable the helicopter to be controlled in the event of both a take-off in adverse circumstances and a continued take-off after failure of the critical power unit.

1.3.2.3 For helicopters operating in Performance Class 1 (see paragraph 1.1.7 a)) the take-off minima may not be less than those given in Table 1, below:

Table 1 RVR/Visibility for Take-Off

Onshore heliports with IFR departure procedures	**RVR/Visibility**
Nil Facilities (Day)	250 m or the rejected take-off distance whichever is the greater
Nil Facilities (Night)	800 m
Unlit/unmarked defined runway/FATO	200 m
Runway edge/FATO lighting and centreline marking	200 m
Runway edge/FATO lighting, centreline lighting and RVR information	150 m
Onshore heliports without IFR departure procedures	800 m

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

1.3.2.4 For helicopters operating in Performance Class 2 (see paragraph 1.1.7 b)) the take-off minima shall be not less than 800 m RVR/visibility and helicopters shall remain clear of cloud during the take-off manoeuvre or until reaching Performance Class 1 capabilities.

1.3.2.5 For helicopters operating in Performance Class 3 (see paragraph 1.1.7 c)) the take-off minima shall be not less than 600 ft cloud ceiling and 800 m RVR/visibility.

1.3.2.6 Non-Precision Approaches. Non-precision approach procedures are based on the use of Instrument Landing System (ILS) without glideslope (Localiser only (LLZ)), VOR, Non-Directional Beacon (NDB), Surveillance Radar Approach (SRA) or VHF Direction Finding System (VDF). The minimum descent height on a non-precision approach shall not be less than the highest of:

a) the obstacle clearance height (OCH) or obstacle clearance limit (OCL) for the category of helicopter;

b) the system minimum, as contained in Table 2, below; or

c) any State minima, if applicable.

Table 2 System Minima for Non-Precision Approach Aids

Approach Aid	System Minimum (ft)
ILS (No Glide Path – LLZ)	250
SRA (terminating at ½ NM.)	250
SRA (terminating at 1 NM.)	300
SRA (terminating at 2 NM.)	350
VOR	300
VOR/DME	250
NDB	300
VDF (QDM and QGH)	300

1.3.2.7 Visual Reference

No pilot may continue an approach below Minimum Descent Height (MDH) unless at least one of the following visual references for the intended runway is distinctly visible to, and identifiable by the pilot:

a) elements of the approach light system;

b) the threshold, or its markings, lights or identification lights;

c) the visual approach slope indicator(s);

d) the touchdown zone, zone markings or zone lights;

e) elements of the runway lights.

1.3.2.8 Required Runway Visual Range (RVR-Metres)

For non-precision approaches by performance Class 1 and 2 helicopters, the minima given in Table 3 shall apply:

Table 3 Onshore Non-Precision Approach Minima

Onshore Non-Precision Approach Minima (5) (6) (7) (8)				
	Facilities (RVR --metres)			
MDH(ft)	Full (1)	Intermediate (2)	Basic (3)	Nil (4)
250-299	600	800	1000	1000
300-449	800	1000	1000	1000
450 and above	1000	1000	1000	1000

NOTES: 1) Full facilities comprise runway markings, 720 m or more High Intensity/Medium Intensity (HI/MI) approach lights, runway edge lights, threshold lights, end lights and runway markings. Lights must be in operation.

2) Intermediate facilities comprise 420-719 m HI/MI approach lights, runway edge lights, threshold lights, end lights and runway markings. Lights must be in operation.

3) Basic facilities comprise, < 420 m of HI/MI approach lights, or no approach lights, runway edge lights, threshold lights, end lights and runway markings or no lights at all.

4) Nil approach light facilities comprise runway markings, runway edge lights, threshold lights, runway end lights. Lights must be on.

5) The tables are only applicable to conventional approaches with a nominal descent gradient of less than 4°. Greater descent gradient will usually require that visual glideslope guidance, i.e. PAPI, is also visible at Minimum Descent Height.

6) The above figures are either reported RVR or met visibility converted to RVR using Table 4 below.

7) Where the missed approach point is within ½ NM of the landing threshold, the approach minima given for full facilities may be used regardless of the length of approach lighting available. However, runway edge lights, threshold lights, end lights and runway markings are still required.

8) For night operations ground lighting must be available to illuminate the FATO and any obstacles.

9) For single pilot operations the minimum RVR is 800 m or the Table 3 minima whichever is the higher.

Table 4 Converting Reported Met Visibility to RVR

Lighting Elements in Operation	RVR = Met Visibility X	
	Day	Night
HI Approach and Runway Lighting	1.5	2.0
Any Type of Lighting Installation Other than Above	1.0	1.5
No Lighting	1.0	N/A

NOTES: 1) Table 4 may not be used for calculating take-off minima.

2) Table 4 may not be used when a reported RVR is available.

1.3.2.9 Precision Approaches

For precision approach purposes, a Category 1 operation is one using ILS, Microwave Landing System (MLS) or Precision Approach Radar (PAR) with a Decision Height (DH) not lower than 200 feet, and a runway visual range (RVR) not less than 500 metres. The DH shall be not less than the highest of:

a) the OCH/OCL for the category of helicopter;

b) the minimum DH in the helicopter flight manual, if stated;

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

d) 200 feet; or

e) any State minima, if applicable.

1.3.2.10 Visual Reference

No pilot may continue a precision approach below a DH determined as in paragraph 1.3.2.9, above, unless at least one of the following visual references for the intended runway is distinctly visible to, and identifiable by the pilot:

a) elements of the approach lighting system;

b) the threshold, or its markings, lights or identification lights;

c) the visual approach slope indicator(s);

d) the touchdown zone, zone markings or zone lights;

e) elements of the runway lights.

1.3.2.11 **Required Visual Range (Metres)**

For Category 1 operations by Performance Class 1 and 2 helicopters the following minima shall apply:

Table 5 Onshore Precision Approach Minima --Category 1

Onshore Precision Approach Minima --Category 1 (5) (6) (7) (8) (9)				
	Facilities (RVR - metres)			
DH(ft)	**Full** (1)	**Intermediate** (2)	**Basic** (3)	**Nil** (4)
200	500	600	700	1000
201-250	550	650	750	1000
251-300	600	700	800	1000
301 and above	750	800	900	1000

NOTES: 1) Full facilities comprise 720 m or more HI/MI approach lights, runway edge lights, threshold lights, end lights and runway markings.

2) Intermediate facilities comprise 420–719 m of HI/MI approach lights, runway edge lights, threshold lights, end lights and runway markings.

3) Basic facilities comprise < 420 m of HI/MI approach lights, or no approach lights, runway edge lights, threshold lights, end lights and runway markings. Lights must be on.

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

5) The above figures are either reported RVR or met visibility converted to RVR using Table 4.

6) The above figures are only applicable to conventional approaches with a glideslope angle up to and including 3.54 degrees.

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

8) For night operations at least runway edge lights must be available.

9) For single pilot operations the minimum RVR for all helicopters are defined according to JAR–OPS but shall not be less than 800m, except when using a suitable autopilot coupled to an ILS, when Table 5 minima shall apply.

NOTE: The DH applied must not be less than 1.25 x minimum use height for the autopilot.

1.3.2.12 Commencement and Continuation of an Approach. An approach may be started irrespective of the RVR, but it may not be continued past the outer marker or equivalent position unless the reported controlling RVR or visibility is equal to or better than the specified minimum. Once past the outer marker or equivalent position, the approach may be continued to the landing irrespective of reported RVR/Visibility

provided that the required visual reference has been established at the DH/MDH, and is maintained.

NOTE: Where no outer marker or equivalent position exists, the pilot in command shall make the decision to continue or abandon the approach before descending below 1000 feet above the destination on the final approach segment. The equivalent position can be established by means of a Distance Measuring Equipment (DME) distance, a suitably located NDB or VOR, (SRA) or PAR fix or any other suitable fix that independently establishes the position of the helicopter.

1.3.2.13 Visual Manoeuvring (Circling)

Visual manoeuvring (circling) is the term used to describe the visual phase of an instrument approach required to position a helicopter for landing on a FATO which is not suitably located for a straight in approach. For circling, the specified MDH shall be not less than 250 ft, and the meteorological visibility shall not be less than 800 m.

NOTE: Visual manoeuvring with prescribed tracks is an accepted procedure within the meaning of this paragraph.

1.3.2.14 Visual Approach

The minimum RVR for a visual approach shall not be less than 800 metres.

1.4 En-route Operating Minima for VFR Flights or VFR Portions of a Flight

1.4.1 General

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

1.4.2 Single-Engined Helicopters

The performance rules require that, in case of power unit failure at any point in the flight profile,the commander must remain in sight of the surface,and be in a position to carry out a safe forced landing.

Flight "VFR-on-top" is not normally an acceptable procedure.

NOTE: Minima for a given route must therefore be selected and clearly stated in terms of a cloud ceiling and in flight visibility which will enable the pilot to select and navigate visually to a suitable site for a forced landing, from any point on the planned route.

1.5 Presentation and Application of Heliport and En-route Operating Minima

1.5.1 Presentation

Specific minima for a given heliport will normally be as shown in the commercial en-route guide used by the Company. If the guide does not contain such information for a particular heliport, the details will be included in the commanders flight brief. For precision approaches, minima are listed in terms of DH (or Decision Altitude (DA) when QNH is used as the landing altimeter setting) and RVR. For non-precision approaches, minima are listed in terms of Minimum Descent Height (MDH) (or Altitude for QNH settings) and RVR. For circling approaches, the MDH/Altitude will be shown together with a minimum in-flight visibility (IFV).

1.5.2 Application

A commander is not permitted to operate to minima which are lower than those published in the en-route guide, calculated in accordance with paragraphs 1.3 and 1.4,

above, or notified by the state which controls the heliport in question. A commander may nevertheless elect to operate to higher minima than those established by any of these means if he considers that under the circumstances of the flight to do otherwise might compromise the safety of his helicopter or its passengers. Once the flight has started, the commander must be prepared to amend the intended minima for any heliport he is scheduled to use, in order to take account of any change in status of the relevant approach aids which occurs during the flight.

1.6 Interpretation of Meteorological Information

1.6.1 All flight crew members are required to develop and maintain a sound working knowledge of the system used for reporting aerodrome and heliport actual and forecast weather conditions and of the codes associated with it. Some of the codes (e.g.for wind velocity) use the same figures as the values being reported; thus, a wind blowing from 280° at 15 knots is reported as 28015 kt. Some of the more important codes, however, use lettered abbreviations which can become particularly significant when flight crews are attempting to assess whether conditions at a particular destination or alternate will be above company minima at the planned time of arrival. Examples of aerodrome actual weather reports and forecasts are included as Appendices B and C respectively. The various codes are discussed briefly in the following paragraphs. (Heliport weather reports are similar.)

1.6.2 Routine actual weather reports (METARs) are compiled half-hourly or hourly at fixed times while the aeronautical meteorological station is open. They may include the following terms to clarify the codes used in reporting the various elements:

a) Horizontal Visibility

When there is no marked variation in the visibility by direction, the minimum is given in metres. When there is a marked directional variation, however, the reported minimum will be followed by one of the eight points of the compass to indicate its direction, e.g. 4000NE. If the minimum visibility is less than 1500 metres, and the visibility in another direction is more than 5000 metres, both the minimum and maximum values, and their directions will be given, e.g. 1400SW 6000N. A code figure of 9999 indicates a visibility of 10 km or more, while 0000 indicates that the visibility is less than 50 metres.

b) Runway Visual Range (RVR)

An RVR group has the prefix R followed by the runway designator, then an oblique stroke followed by the touch-down zone RVR in metres. If the RVR is assessed simultaneously on two or more runways, the RVR group will be repeated; parallel runways will be distinguished by the addition of L, C or R after the runway designator to indicate the left,central or right parallel runway respectively,e.g. R24L/1100R24R/1150.When the RVR is greater than the maximum value which can be assessed, or more than 1500 metres, the group will be preceded by the letter P, followed by the lesser of these two values, e.g. R24/P1500. When the RVR is less than the minimum value which can be assessed, the RVR will be reported as M followed by the minimum value that can be assessed, e.g. R24/M0050.

c) Cloud

Up to four cloud groups may be included, in ascending order of their bases. Each group consists of three letters to indicate the amount (FEW = 1 to 2 oktas, SCT (scattered) = 3 to 4 oktas; BKN (broken) = 5 to 7 oktas, and OVC (overcast) = 8 oktas) and three figures indicating the height of the base of the cloud layer in hundreds of feet above aerodrome level. Apart from significant convective clouds

(CB = cumulo-nimbus; TCU = towering cumulus) cloud types are not indicated. Cloud layers or masses are reported such that the first group represents the lowest individual layer of any amount; the second group is the next individual layer of more than 2 oktas; the third group is the next higher layer of more than 4 oktas, and the additional group, if any, represents significant convective cloud, if not already reported, e.g. SCT010 SCT015 SCT018CB BKN025.

d) CAVOK and SKC

CAVOK will replace the visibility, RVR, weather and cloud groups when the visibility is 10 km or more; there is no cloud below 5000 feet or below the highest Minimum Sector Altitude (MSA), whichever is the greater, and no cumulo-nimbus; and there is no precipitation, thunderstorms, shallow fog or low, drifting snow. If any of these conditions are not met, but there is no cloud to report, then the cloud group is replaced by SKC (sky clear).

e) Air Temperature and Dewpoint

The air temperature and dewpoint are shown in degrees Celsius, separated by an oblique stroke. A negative value is indicated by an M in front of the appropriate digits, e.g. 10/03 or 01/MOI

f) Pressure Setting

The QNH is rounded down to the next whole millibar and reported as a four-figure group preceded by the letter Q. If the QNH value is less than 1,000 Mbs, the first digit will be O, e.g. Q0993.

g) Recent Weather

Operationally significant weather which has been observed since the previous observation, but which was not current at the time of the present observation, will be reported using the standard present weather code preceded by the indicator RE, e.g. RETS.

h) Windshear

A windshear group may be included if windshear is reported along the take-off or approach paths in the lowest 1600 feet with reference to the runway in use. WS is used to begin the group as in the examples: WS TKOF RWY20, WS LDG RWY20.

i) Trend

A trend group is added when significant changes in conditions are forecast to occur during the two hours following the time of observation. The codes BECMG (becoming) or TEMPO (temporarily) are used, and may be followed by a time group (in hours and minutes Co-ordinated Universal Time (UTC)) preceded by one of the indicators FM (from), TL (until) or AT (at). These are followed by the expected change using the standard codes, e.g. BECMG FM 1100 250/35G50kt or TEMPO FM 0630 TL0830 3000 SHRA. Where no such significant changes are expected,the trend group will be replaced by the word NOSIG.

j) DENEB

The code word DENEB may be added to a METAR to indicate that fog dispersal operations are in progress. Information which is missing from the METAR may be indicated by the use of oblique strokes to replace the missing code figures/letters.

1.6.3 **Aerodrome and Heliport Weather Forecasts (TAFs)**

Aerodrome and heliport weather forecasts (TAFs) are usually issued to describe the forecast conditions at an aerodrome covering a period of 9 to 24 hours. The validity periods of many of the longer forecasts may not start for up to 8 hours after the time of origin and the forecast details only cover the last 18 hours. The 9-hour TAFs are updated and re-issued every 3 hours, and those valid for 12 and 24 hours, every 6 hours. Amendments are issued as and when necessary. A TAF may be sub-divided into two or more self-contained parts by the use of the abbreviation FM(from) followed by the time UTC to the nearest hour, expressed as two figures. Many of the groups used for METARs are also used in the TAFs but differences are noted below:

a) Validity Period

Whereas a METAR is a report of conditions at a specific time, the TAF contains the date and time of origin, followed by the start and finish times of the validity period in whole hours UTC, e.g. TAF EGLL 130600Z (date and time of issue) 0716 (period of validity 0700 to 1600 hrs UTC).

b) Horizontal Visibility

The minimum visibility only is forecast; RVR is not included.

c) Weather

If no significant weather is expected, the group is omitted. After a change group, however, if the weather ceases to be significant, the abbreviation NSW (no significant weather) will be inserted.

d) Cloud

When clear sky is forecast, the cloud group will be replaced by SKC (sky clear). When no cumulo-nimbus, or clouds below 5000 feet or clouds below the highest minimum sector altitude, whichever is the greater, are forecast, but CAVOK or SKC are not appropriate, the abbreviation NSC (no significant cloud) will be used.

e) Significant Changes

In addition to FM and the time (see paragraph 1.6.3, above) significant changes may be indicated by the abbreviation BECMG (becoming) or TEMPO (temporarily). BECMG is followed by a four-figure group indicating the beginning and ending of the period in which the change is expected to occur. The change in the forecast conditions is expected to be permanent, and to occur at an unspecified time within this period. TEMPO will similarly be followed by a four-figure time group; it indicates a period of temporary fluctuations in the forecast conditions which may occur at any time during the stated period. The TEMPO conditions are expected to last less than one hour in each instance, and in aggregate, less than half the period indicated.

f) Probability

The probability of a significant change occurring will be given as a percentage, but only 30% and 40% will be used. The abbreviation PROB will precede the percentage, which will be followed by a time group, or a change and time group, e.g. PROB 30 0507 0800FG BKN004, or PROB40 TEMPO 1416 TSRA BKN010CB.

g) Amendments

When a TAF requires amendment, the amended forecast will have AMD inserted between TAF and the aerodrome identifier, and will cover the remainder of the validity period of the original forecast.

1.7 Determination of the Quantities of Fuel, Oil and Water Methanol Carried

1.7.1 Fuel for IFR Operations

Based on the appropriate consumption figures for the stage of flight as contained in Part B of the manual for the specific helicopter type, the usable fuel on board at the start of each flight must be sufficient to cover the following elements:

a) taxying, and any necessary pre-departure power and systems checks;

b) take-off and climb to cruising altitude accounting for routeing;

c) cruise flight to top of descent;

d) descent via any required standard arrival procedure to the initial approach point at the destination;

e) approach and landing;

f) missed approach from DA/H or MDA/H, and diversion to the nominated alternate heliport calculated as in sub-paragraphs b) to e), above, but starting from a missed approach as opposed to a take-off;

g) holding for 30 minutes at 1500 feet a.m.s.l. in turbine-powered helicopters at holding speed, calculated with the estimated mass on arrival above the alternate;

h) contingency allowance representing 10% of the elements at b), to e), inclusive;

i) additional fuel at the commanders discretion to cover unexpected meteorological conditions and abnormal situations (e.g. air traffic control disruptions) for which the normal contingency allowance might not be sufficient.

1.7.2 Fuel for VFR Operations by Day

As a) to e) above inclusive, plus i), plus:

contingency allowance representing 5% of the trip fuel for VFR flights in a non-hostile environment, or 10% of the trip fuel for VFR flights in a hostile environment.

1.7.3 Fuel for VFR Operations when Navigating by Means Other than Reference to Visual Landmarks, or at Night

As a) to e) above inclusive, plus g), h) and i) as appropriate.

1.7.4 Final Reserve Fuel

1.7.4.1 As a general rule, an emergency exists when the fuel remaining is estimated to have reduced to an amount where an approach to land should be started without delay. The amount of fuel remaining at this stage (the Final Reserve Fuel) is at least the sum of:

a) for VFR flights navigating by day with reference to visual landmarks, 20 minutes fuel at best range speed;

b) for IFR flights or when flying VFR and navigating by means other than by reference to visual landmarks or at night, fuel to fly for 30 minutes at holding speed at 1500 ft (450 m) above the destination heliport in standard conditions calculated with the estimated mass on arrival above the alternate, or the destination when no alternate is required;

c) extra fuel, which should be at the discretion of the commander.

1.7.4.2 Operators are to specify for each type of helicopter what the final Reserve Fuel is to be and what action is to be taken by the commander:

a) when it appears likely that the Final Reserve Fuel will be reached; and

b) when the Final Reserve Fuel is reached.

1.7.5 **Isolated Heliport Procedure**

If operations to such a destination, for which an alternate does not exist, are required when flying IFR or VFR and navigating by means other than by reference to visual landmarks or at night, the amount of fuel at departure should include the following elements of paragraph 1.7.1:

a) to e) inclusive; h) plus:

Additional fuel to fly for two hours at holding speed, including final reserve fuel, plus:

Extra fuel at the discretion of the commander.

1.7.6 **Oil**

While the engine oil contents must obviously be sufficient to cover the same elements as those for the fuel, it will be sufficient for the commander to ensure before flight that the engine oil contents have been topped up in accordance with the manufacturers recommendations, and between flights that no excess oil consumption has taken place.

1.7.7 **Maintenance of Fuel and Oil Carriage and Consumption Records**

a) Fuel usage records will be passed to the maintenance department, and in addition retained with the flight paperwork and technical log sheets.

b) Oil usage will be recorded in the technical log and preserved with same.

1.8 **Mass and Centre of Gravity**

1.8.1 The mass and centre of gravity (C of G) of each Company helicopter must be established by actual weighing before it is used. All helicopters are to be reweighed thereafter at intervals not exceeding four years. A basic helicopter mass and CofG position will normally be noted on the weighing report, or mass and centre of gravity schedule, as produced by the manufacturer or approved maintenance organisation. These will be used by the Company to calculate a helicopter prepared for service (APS) mass and C of G, or a dry operating mass (DOM) and C of G for each helicopter. Details are contained in Part B for the particular helicopter type. If the helicopters are to be operated in a variety of roles, specific APS/DOM values for each role will be provided, and are to be used as the basis for all loading calculations.

1.8.2 For general application, actual values of mass are to be used for crew, passengers, baggage, freight and fuel. If the mass of the engine oil has not been included in the calculation of basic helicopter mass, it will be included in the APS or dry operating mass so that no further account need be taken of it for balance purposes. Whenever possible, the specific gravity of the fuel uplifted is to be used in calculating the mass of the fuel load. Alternatively, standard values of 7.2 lbs/Imp Gal (.718kg/litre)for Avgas and 7.9 lbs/Imp Gal (.799 kg/litre) for JP4 may be used. If, for any reason, notional weights are to be used, the appropriate values for crew, passengers and baggage are to be selected from the following tables. The standard mass values specified in the Tables below include the mass of any infant less than 2 years of age carried by an adult on one passenger seat. Infants occupying separate passenger seats are to be regarded as children.

Table 6

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

NOTES: 1) Hand baggage, if applicable, is 6 kg.

2) Where the number of passenger seats available is less than 6, the passenger mass may be established by a verbal statement by or on behalf of each passenger or by estimation. When asking each passenger on helicopters with less than 6 passengers for his/her mass (weight), a specific constant should be added to account for clothing. This constant should not be less than 4 kg.

Table 7 Mass Values for Crew

Crew Position	Standard Mass Including Hand Baggage
Flight Crew	85 kg

NOTE: Actual masses may of course be used.

1.8.3 Where a standard load plan is used, details are included, together with additional limitations On the permissible range of C of G travel on which the standard plan is based. Irrespective of whether a 'drop-line' mass and balance document, a standard plan, a load calculator, or a computer programme is used in establishing the helicopters mass and C of G position and must indicate whether standard or actual mass values have been used.

1.9 ATS Flight Plan

1.9.1 An ATS Flight Plan is to be submitted to the appropriate air traffic services unit for all flights except for those flights which will be conducted in accordance with the visual flight rules (VFR) and night visual contact flights.

1.9.2 Details of flights such as local area training flights or those involving air tests of helicopters or their systems are to be passed to the ATS unit (booking out) and the Company is to ensure that a nominated person on the ground is made responsible for monitoring the flight progress, and for alerting the emergency services if the helicopter has not returned within an hour of its estimated time of return.

1.9.3 The commander is responsible for ensuring that a plan has been filed or that the flight has been correctly booked out with ATS, and that he is fully aware of the details.

1.9.4 Alternative means of depositing information, which can include transmission of details after take-off, may be acceptable in lieu of formal ATS flight plan submission.

1.10 Operational Flight Plan

An Operational Flight Plan (navigation log, or Pilot's Log (Plog)) should be prepared and used for all flights in excess of 30 minutes flight time. Whereas the Company will normally issue a prepared plan for each flight, the flight crew may be required to produce their own plans, using the standard Company proforma, for one-off flights. The following information is to be recorded:

a) helicopter type, variant and registration;

b) date and identification of flight;

c) crew names and duty assignments;

d) places of departure and arrival;

e) commencement and termination of taxying (if applicable), take-off to landing and elapsed times for the locations at d) above;

f) type of operation (company, training etc.);

g) route and route segments with checkpoints/way points, tracks, distances, and still air times;time and tracks;

h) planned cruising speeds, estimated times between checkpoints, estimated and actual times overhead;

i) minimum safe altitudes, planned altitudes and flight levels;

j) fuel calculations, inc. ancillary equipment;

k) fuel on board at engine start and on shut-down after the flight;

l) alternate(s), including information as at g) to i) above;

m) initial ATS Flight Plan clearance and any subsequent re-clearance details;

n) relevant meteorological data received in flight;

o) any in-flight re-planning calculations.

1.10.1 Items which are readily identifiable in other documentation or from an alternative acceptable source or are irrelevant to the type of operation may be omitted from the operational flight plan.

NOTE: Appendices are examples only and should not be taken as final or definite documents. Individual variations may well be required.

1.11 Operators Helicopter Technical Log

1.11.1 The helicopter technical log is a system for recording defects and malfunctions discovered during the operation and for recording details of all maintenance carried out on the particular helicopter to which the helicopter technical log applies whilst that helicopter is operating between scheduled visits to the base maintenance facility. In addition, it is used for recording operating information relevant to flight safety and must contain maintenance data that the operating crew need to know.

1.11.2 The helicopter technical log system covers in five sections the necessary details although it is acceptable to further sub-divide where it is found that the information is so extensive that sub-sections are considered to be more appropriate:

a) **Section 1.** Contains details of the registered name and address of the operator, the helicopter type and the complete international registration marks of the helicopter.

b) **Section 2.** Contains details of when the next scheduled maintenance is due, including, if relevant any out of phase component changes due before the next maintenance check. In addition this Section contains the current Certificate of Release to Service (CRS), for the complete helicopter, issued normally at the end of the last maintenance check.

c) **Section 3.** Contains details of all information considered necessary to ensure continued flight safety. Such information includes:

i) The helicopter type and registration mark;

ii) The date and place of take-off and landing;

iii) The times at which the helicopter took-off and landed;

iv) The running total of flying hours, such that the hours to the next scheduled maintenance can be determined. The flight crew does not need to receive such details if the next scheduled maintenance is controlled by other means;

v) Details of any defect including emergency systems known to the commander; Provision is made for the commander to date and sign such entries, including, where appropriate, the nil state for continuity of the record. Provision is made for a CRS following rectification of a defect or any deferred defect or maintenance check carried out. Such a certificate readily identifies the defect(s) to which it relates or the particular maintenance check as appropriate;

vi) The quantity of fuel and oil uplifted and the quantity of fuel available in each tank, or combination of tanks, at the beginning and end of each flight; provision is made to show, in the same units of quantity, both the amount of fuel planned to be uplifted and the amount of fuel actually uplifted; provision for the time when ground de-icing and/or anti-icing was started and the type of fluid applied, including mixture ratio fluid/water;

vii) A Check A, the pre-flight inspection and pilots post-flight signatures.

1.11.3 In addition to the above it is necessary to record the following supplementary information:

a) the time spent in particular engine power ranges where use of such engine power affects the life of the engine or engine module. Maximum or Inter Contingency Power are two examples;

b) the number of landings where landings affect the life of a helicopter or helicopter component;

c) flight cycles or engine cycles where such cycles affect the life of a helicopter or engine.

1.11.4 Where Section 3 is of the multi sector 'part-removable' type then such 'part-removable' sections must contain all of the foregoing information where appropriate.

1.11.5 Section 3 is designed such that one copy of each page may remain on the helicopter and one other copy may be retained on the ground until completion of the flight to which it relates. If it is not reasonably practicable for the copy of the technical log to be kept on the ground it may be carried in the helicopter in a container approved by the Authority for that purpose.

1.11.6 Section 3 lay-out should be divided to show clearly what is required to be completed after flight and what is required to be completed in preparation for the next flight.

1.11.7 Section 4 contains details of all deferred defects that affect or may affect the safe operation of the helicopter and should therefore be known to the helicopter commander. Each page of this section must be pre-printed with the company's name and page serial number and provision is made for recording the following:

a) a cross reference for each deferred defect such that the original defect can be identified in the particular Section 3 Sector Record Page;

b) the original date of occurrence of defect deferred and time limit;

c) brief details of the defect;

d) details of the eventual rectification carried out and its CRS or a clear cross-reference back to the document that contains details of the eventual rectification.

1.11.8 Section 5 contains any necessary maintenance support information that the helicopter Commander needs to know. Such information includes data on how to contact maintenance engineering if problems arise whilst operating away from base.

1.11.9 The helicopter Technical Log System can be either a paper or computer system or any combination of both methods.

1.12 List of Documents, Forms and Additional Information to be Carried

1.12.1 The following documents or copies thereof belonging to the respective helicopter are to be carried on each individual flight:

a) Certification of Registration;

b) Certificate of Airworthiness;

c) Noise Certificate (if applicable);

d) Aircraft Radio Licence;

e) Third Party Liability Insurance Certificate(s);

f) A copy of the notified procedures to be followed by the PIC of an intercepted aircraft, and the notified visual signals for use by intercepting and intercepted aircraft.

1.12.2 Where practicable, each flight crew member shall, on each flight, carry a valid flight crew licence with the appropriate rating(s) for the purpose of that flight.

NOTE: It is accepted that it may not be practicable for flight crew members engaged in overwater operations to carry a licence.

1.12.3 The following Manuals are to be carried on each flight:

a) The current parts of the Code of Practice relevant to the duties of the crew;

NOTE: Those parts of the Code of Practice, which are required for the conduct of a flight must be easily accessible to the crew on board the helicopter.

b) The current Helicopter Flight Manual, unless Part B of this Code of Practice contains relevant data for the helicopter.

1.12.4 In addition to the above, the following information and forms, relevant to the type and area of operation, are to be carried on each flight:

a) Operational Flight Plan containing at least the information required in paragraph 1.10, where applicable;

b) Helicopter Technical Log containing at least the information required in paragraph 1.11;

c) Appropriate meteorological information;

d) Current maps and charts and associated documents as prescribed in paragraph 1 a) vii);

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

f) Forms to comply with the reporting requirements of the operator.

1.13 Personnel Safety Equipment

1.13.1 Crew members are responsible for briefing passengers and making themselves familiar with the method of use and contents of all safety equipment in the helicopter they operate.

1.13.2 **Lifejackets and Personal Locator Beacons** Lifejackets should be provided for all persons on board when helicopters are engaged in over water operations. Lifejackets worn by flight crew should be fitted with personal locator beacons. During an emergency rescue, the survivors beacon should remain selected to the emergency frequency. To optimise homing the 'Auxiliary' frequency if available should not be selected.

1.13.3 **Crew Survival Suits** (Text reflecting company policy on the wearing of crew survival suits should be inserted here, if applicable).

1.13.4 **Liferafts** Liferafts should be carried when operating a helicopter in Performance Class 1 or 2 on a flight overwater at a distance from land corresponding to more than 10 minutes flying time at normal cruising speed from land and at all times when operating in Performance Class 3.

2 Ground Handling Instructions

2.1 Fuelling Procedures

Under normal circumstances, it should not be necessary for refuelling to take place with passengers on board the helicopter. Circumstances may arise, however, when the commander considers it preferable for the passengers to remain on board while refuelling takes place, e.g. when the technical stop is solely for the purpose of refuelling; rotors running changes on oil rigs; the helicopter is parked remote from the terminal building; the weather is inclement and surface transport is not readily available for the passengers. The precautions to be taken during refuelling are given in the following paragraphs.

2.1.1 At Base

When operating from its main base, the commander is to confirm with operations that the fuel quantity ordered is sufficient to meet his calculated requirements for the flight, and during the pre-flight inspection is to ensure that he, or a flight crew member nominated by him, confirms that:

a) the correct type, grade and quantity of fuel has been loaded;

b) the fuel drains are operated to check for water content, and left properly closed;

c) where practical, a visual check of tank contents, or if specified in the checklists for smaller helicopters, a dipstick check reveals the correct amount of fuel on board to be within reasonable tolerances;

d) all fuel tank and pressure refuelling connector caps are properly secured;

e) the helicopter fuel gauges indicate that the tanks have been filled to the required levels; and

f) details of the fuel uplift have been correctly entered in the technical log, and a gross error check is carried out;

If an auxiliary power unit located within the fuelling zone or which has an exhaust efflux discharging in to the zone is stopped for any reason during a fuelling operation it should not be restarted until the flow of fuel has ceased and there is no risk of igniting fuel vapours.

2.1.2 En Route

When operating away from base, a flight crew member is normally to be nominated by the commander to be present during the refuelling, and in addition to confirming that the requirements of paragraph 2.1.1, above, are met, he is to ensure that:

a) particular care is taken in advising the refuelling agency of the type, grade and fuel quantity required, with special reference to the units of measurement quoted (litres, U.S. gallons, pounds etc.);

b) the bowser or other fuel installation is earthed to the helicopter structure before the hose is extended, and remains so earthed until refuelling is complete;

c) smoking is not permitted within 15 metres of the helicopter while refuelling is in progress;

d) the correct quantity of bacteriological control additive and/or anti-freeze additive is dispensed into the fuel where specified by the helicopter manufacturer.

e) the fuel bowser/installation readings at the start and finish of refuelling reflect accurately the fuel uplift as indicated on the helicopter gauges, and a gross error check is carried out.

NOTE: When refuelling with Avgas or wide cut fuels the helicopter electrical supply should be switched off before refuelling starts, and remain off until refuelling ceases and the hoses have been removed.

2.1.3 Passengers on Board

When, exceptionally, passengers are to be allowed to remain on board during refuelling, either rotors stopped or rotors turning, the following additional precautions are to be observed:

a) air traffic control, the airport fire services and if applicable the rig helicopter landing officer, are to be advised that refuelling will be taking place with passengers on board;

b) passengers are to be briefed to remain seated, but with seat belts/harnesses unfastened, until the refuelling has been completed;

c) door(s) on the refuelling side of the helicopter shall remain closed, where possible;

d) door(s) on the non-refuelling side of the helicopter shall remain open, weather permitting;

e) one suitably qualified pilot must remain, strapped in, at the controls at all times if the rotors are turning;

f) a crew member is to be stationed at the main exit door to assist in the evacuation if an emergency should occur;

g) the position of the fuel bowser/installation relative to the helicopter is to be such that it will not impede the rapid exit of passengers if an emergency evacuation becomes necessary;

h) however notwithstanding the foregoing an operator shall ensure that no helicopter is re/defuelled with Avgas or widecut fuel (e.g. Jet B or equivalent) or when a mixture of these types of fuel might occur, when passengers are embarking, on board or disembarking;

i) if the presence of fuel vapour is detected inside the helicopter, or any other hazard arises, refuelling/defuelling must be stopped immediately.

2.1.4 Fuelling procedures and guidance are contained in CAP 748 'Aircraft Fuelling and Fuel Installation Management' available at www.caa.co.uk/CAP748.

2.2 Helicopter Passenger and Cargo Handling Procedures Related to Safety

All personnel who are to be made responsible for ground handling of the Company's helicopters, including the loading and offloading of both passengers and freight, are

to be given detailed guidance in the completion of their duties in respect of each helicopter type for which they may be responsible. Such personnel include flight crews and the Company's own ground personnel. In the event of usage of non-Company ground personnel it is the responsibility of the commander to ensure that those personnel are adequately briefed.

2.2.1 Passengers

a) There may be a wide variation in the circumstances in which passengers are accepted and conveyed to a helicopter, depending on the place of departure, the type of helicopter and its crew composition, the use of a check-in desk or rendezvous point, the availability of a courtesy vehicle and the proximity of the parked helicopter to the exit from the terminal building. Irrespective of the circumstances however, passengers are to be either taken to the helicopter in approved transport, or escorted by a crew member, nominated Company employee or representative of the appointed handling agent, as appropriate, from the terminal building to the helicopter.

b) Similarly, prior to arrival at destination, passengers are to be advised whether they are to leave the helicopter with rotors turning or with the rotors and engines stopped. If the former, it is essential that competent persons escort passengers by a safe route until outside the rotor disc. Every care is to be taken to ensure that they remain in a unified group, refrain from smoking, and are kept well clear of main and tail rotors, and jet engine intake and exhaust danger areas while on the helicopter movement area. Disabled or handicapped passengers should not be seated adjacent to the normal/emergency exits so that they will not delay the evacuation process in case of emergency.

c) Once the passengers are seated, a flight crew member is to close the helicopter door(s) and/or confirm by inspection that it has been properly closed and secured.

d) In addition to having their attention drawn to the safety cards, passengers are to be carefully briefed on their contents, as detailed in paragraph 3.14.2. Emphasis should be placed on the operation of the normal/emergency exits, the use of safety belts/harnesses, the position of seat backs during take-off and landing, and the general requirements for cabin safety security at all times.

2.2.2 Baggage and Freight

a) Cabin baggage capable of stowage in the various locations provided will normally be restricted to handbags, briefcases, cameras, outdoor coats, and other items which can reasonably be stowed in approved stowages, unless the carriage in the cabin of other items had been cleared with the Company at the time of booking.

b) Hold baggage is to be stowed and secured only in those areas and compartments which are designated for its carriage, and subject to the floor loading limitations of the particular area. It may be necessary to restrict the type of luggage carried in particular areas or to restrict the weight carried for balance purposes rather than structural considerations.

c) The commander is to ensure that all personnel who may be responsible for loading the helicopter are made aware of such additional restrictions. Freight is not to be carried unless the particular helicopter has been cleared for operations in the freight role, and the appropriate spreader boards, freight lashings, nets and anchor points are available and approved. For such approved helicopters, details of the freight configuration(s)and loading restrictions will be found in Part B for the helicopter type. If the Company holds a permission for the carriage of dangerous goods, additional instructions will be included in Part B.

2.2.3 Ground Operations

a) Whenever a helicopter is to be positioned on the ramp, whether under tow or under its own power, the assistance of marshallers should be obtained if there is any doubt about the clearances available for manoeuvring. Once on the hardstanding, positioning of the helicopter should represent the best available compromise between the requirements of the heliport and/or air traffic control authorities,the prevailing wind direction, and the proximity to buildings and other aircraft.

b) Once the helicopter has been parked, ground support vehicles should be stationed clear of the rotor disc and parallel to the fuselage so that in the event of brake failure they will not collide with the helicopter itself. Ground equipment should also be positioned so that inadvertent movement will not endanger the helicopter structure. In all cases, free access to the helicopters main exit must be preserved.

c) When departing from the ramp, local procedures for start-up and taxy clearance are to be followed. Engine start and rotor engagement is normally not to be initiated until all passengers or freight have been loaded, the helicopter doors and hatches have been closed, and all ground equipment, except for a ground power unit when used, has been removed from the vicinity of the helicopter. As for the arrival, the assistance of marshallers should be arranged when manoeuvring in relatively confined or crowded areas of the apron, if applicable.

d) Ground staff must have been briefed on all aspects of ramp safety with particular reference to fire prevention, the dangers from main and tail rotors particularly during rotor engagements, downwash effects and the need to be constantly alert to secure loose objects and other debris.

2.3 Procedures for the Refusal of Embarkation

2.3.1 The commander has the statutory authority to refuse entry to his helicopter of anyone whose presence in flight could represent a hazard to the safety of the helicopter or its passengers. Such persons could include those suspected of being under the influence of alcohol or drugs to the extent that the safety of the helicopter or its occupants is likely to be endangered, or of suffering from any form of mental or physical illness which could put the remaining passengers at risk. In the case of those suffering from known or declared illnesses, arrangements may be made for such persons to be carried if prior medical approval has been given, and qualified nursing personnel accompany the patient(s).

2.3.2 In order to assist the commander in the proper exercise of this authority, all Company personnel engaged in passenger handling and loading, including other crew members, handling agents and check-in personnel, should alert the commander if at any time they consider that the condition of particular passengers could jeopardise the safety of a proposed flight.

2.3.3 If difficulty is encountered in dealing with such passengers, particularly those who may require physical restraint, the assistance of the airport or local police should be requested.

2.4 De-icing and Anti-Icing on the Ground

2.4.1 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 helicopters 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.

3 Flight Procedures

3.1 VFR/IFR Policy

3.1.1 The ATC flight plan is always to indicate clearly whether the flight is to be conducted under IFR or VFR. In cases where the rules governing the flight are expected to be changed en route, the change from IFR to VFR, or vice versa, is to be annotated on the flight plan, as is the position at which the change is planned to take place. If circumstances such as an unforecast deterioration in weather conditions indicate the need for a revised clearance, this is to be requested immediately from the appropriate ATC unit. Flight in visual meteorological conditions is to be maintained until the IFR clearance is received.

3.1.2 When conducting non-approved letdowns under IMC the minimum descent altitude should not be lower than the Minimum Safe Altitude.

3.2 Night Flying

3.2.1 **General** Company pilots not in possession of an Instrument Rating and required to operate a visual contact flight at night should be required to conduct a night Operator Proficiency check (OPC). In addition, the normal OPC should include training and testing in recovery from unusual attitudes. This check should be conducted by an Instrument Rating Examiner (IRE) or a Type Rating Examiner (TRE) under conditions of VMC and the pilot under test should be under simulated instrument flight conditions. These conditions may be simulated by appropriate screens, goggles or hood.

3.2.2 **Minimum Height** Helicopters operated at night under Rule 33 of the Rules of the Air 2007 flying a visual contact flight, clear of cloud and in sight of the surface, should not be operated en-route at less than 1000 feet above the highest obstacle within 5 NM each side of track.

3.2.3 **Forecast and actual weather conditions** The latest forecast and actual weather conditions for the route to be flown should indicate that no cloud will be present below a height of 500 feet above the visual contact flight minimum en-route height and that the in-flight visibility will not be less than 5 km.

3.2.4 **En-route weather deterioration** The company operations manual should contain instructions for pilots on how to terminate a flight on encountering adverse weather conditions.

3.2.5 **Heliport lighing** For night operations some ground lighting should be available to illuminate the FATO and any obstacles adjacent to the site.

3.2.6 **Non-approved let downs under IMC** The company operations manual should include instructions to preclude descent below the Minimum Safe Altitude on instrument approaches conducted under IMC unless such procedures are published or approved as discrete procedures.

3.3 Navigation Procedures

3.3.1 Company helicopters may be fitted with a variety of navigation equipment. Irrespective of the particular fit, however, the general principal for all operations should be that all such equipment is checked for serviceability and normal operation before each flight. Once in flight, equipment which is not directly required for navigation along the selected route should be tuned to ground stations within range whose indications will enable the accuracy of the primary aids to be verified, or from which the bearing and distance indications will enable ground-speed checks or Estimated Time of Arrival (ETA) adjustments to be made. The routine use of all fitted equipment will ensure that errors in performance or faulty operation may be detected, and rectification arranged at an early stage.

3.3.2 Reliance should not be placed on information derived from ground beacons until the appropriate coded signal has been identified and, in the case of two-pilot crews, confirmed by both pilots. When equipment other than VOR, ADF and DME, with cockpit computer and keyboard installations are in use, particular care is to be taken in ensuring that the correct numerical sequences are programmed when entering data from the navigation log (Plog) into the installation. In two-pilot crews, one pilot should read aloud the co-ordinates, tracks or distances while the other pilot operates the keyboard and reads back the figures he has programmed as a cross-check of their accuracy. For single-pilot operations, a conscientious system of self-monitoring should be adopted to minimise the risk of errors. In flight, other available navigation equipment should be selected and used to confirm the accuracy of the primary aid, and to be readily available for use if the primary equipment gives indications of inaccuracy or malfunction. Above all, flight crew members must remain alert to the possibility of errors in programming or performance, and be prepared to revert to the use of raw data provided by such standard VOR, ADF and DME equipments as are available.

3.3.3 Navigation logs should be comprehensively completed en route, except when operating in Busy terminal areas at lower altitudes,and ETAs should be kept amended to take account of significant changes. Note should be made of any diversion from the planned route, whether initiated by the commander or requested by air traffic control, with a brief description of the circumstances, the time the alteration was made, and any fuel re-planning calculations which were necessary. If difficulties are encountered in following a particular route,the more information which is recorded to assist a possible post-flight investigation, the greater will be the chances of overcoming the problems on future flights over the same route.

NOTES: 1) 3.3.3 above may be accomplished with two pilot crews or by a single pilot in a helicopter with a serviceable autopilot when the pilot can take his hands off the controls.

2) For single pilot VFR operations in simple unstabilised helicopters where it is impracticable to maintain a written Plog, the pilot should check fuel, frequencies etc, on a frequent and regular basis.

3.4 Altimeter Setting Procedures

3.4.1 Serviceability Checks

Altimeters are to be checked during the pre-flight phase as follows:

a) both altimeters are to be set to the airfield QFE when available; they should indicate within 50 feet of zero, and the readings should be within 50 feet of each other;

b) with No.1 altimeter on QFE and No.2 on aerodrome QNH, the difference between the readings should be equivalent to the aerodrome altitude above mean sea level, to within 50 feet;

c) set both altimeters to aerodrome QNH and check that they indicate within 50 feet of the aerodrome elevation, and within 50 feet of each other;

NOTE: The altimeters are numbered such that No.1 is the handling pilots primary instrument and the No.2 is the secondary, and not necessarily within the pilots normal instrument scan.

3.4.2 Setting Procedures

Altimeters are to be set, and cross-checked whenever a new setting is applied, in accordance with the following table.

Table 8

Flight Stage	No.1	No.2	Remarks
Before Take-off	QNH	QNH	Aerodrome setting
Climb and Cruise above 500 ft	QNH	QNH	If remaining below Transition Altitude. See Note 1.
Climb En Route below Transition Altitude	1013.2 QNH	QNH	Up to 2000ft prior to passing Transition Altitude.
En route above Transition Altitude	1013.2	QNH	See Note 1.
Descent	1013.2	QNH	When cleared to intermediate Flight Levels
Descent	QNH	QNH	When cleared to an altitude
Initial Approach	Aerodrome QNH	Aerodrome QNH	See Note 2. A cross-check between Nos. 1 & 2 altimeters should be made to ensure correct aerodrome elevation set.
Final Approach	Aerodrome QNH	Aerodrome QNH	See Note 2
Missed Approach	Aerodrome QNH	Aerodrome QNH	

NOTES: 1) When en route, the QNH used should be the appropriate Regional value, unless operating below a Terminal Area (TMA) when the Zone QNH, or Aerodrome QNH of an associated airfield should be set.

2) As an alternative procedure, the airfield QFE may be used on the final approach, in which case it should be set on the No.1 altimeter for single-pilot operations, and on both altimeters in the two-crew case.

3) For single crew operations, the No.2 altimeter may remain on the relevant QNH.

4) When a third altimeter is fitted this must be set to the relevant QNH when at or below MOCA or MORA.

3.5 Policy and Procedures for Inflight Fuel Management
(VFR/IFR as applicable)

3.5.1 The commander must ensure that fuel checks are carried out at frequent and regular intervals throughout the flight. At each check, the total fuel quantity remaining is to be calculated and recorded where possible as a means of:

a) comparing actual consumption with planned consumption;

b) confirming that the fuel remaining will be sufficient to complete the flight; and

c) assessing the amount of fuel remaining on arrival at the destination.

NOTE: Recording of fuel usage is not required in single pilot VFR unstabilised helicopters. Continuous monitoring of consumption is required as for a), b) and c).

3.5.2 If any of the fuel checks indicate that the fuel remaining at an onshore destination will be less than the diversion fuel plus final reserve (i.e. holding) fuel, the commander is normally to divert to a nominated alternate. If, however, there are two separate, suitable TLOF areas available at the destination, and the weather conditions there comply with the planning minima at paragraph 1.3/1.4 above, the commander may use the diversion fuel before landing at the destination.

3.5.3 If the destination is an isolated heliport and fuel has been calculated in accordance with paragraph 1.7.5 above, and a fuel check reveals that the expected fuel remaining at the point of last possible diversion is less than the sum of:

a) fuel to divert to a heliport selected in accordance with paragraph 1.2 above;

b) contingency fuel; and

c) final reserve fuel;

the commander must divert or proceed to the destination provided that, at onshore destinations, two suitable TLOF areas are available at the destination and the expected weather conditions at that destination comply with those specified for planning, namely, at ETA, a cloud ceiling and RVR that are 200 ft and 400 m respectively above the specified operating minima.

3.6 Adverse and Potentially Hazardous Atmospheric Conditions

3.6.1 Thunderstorms

Because of the heights at which they operate, helicopters may be exposed to the effects of thunderstorms including the possibility of encountering lightning strikes,heavy rain,hail and turbulence.

Weather radar should be used to help plan routeing to avoid areas of potentially severe weather build up. This will involve intermittently monitoring long ranges on radar to avoid getting into situations where no alternative remains but the penetration of hazardous areas.

If the helicopter is not equipped with radar or it is inoperative, any storm that by visual inspection is tall, growing rapidly or has an anvil top should be avoided.

3.6.1.1 Recommended Practices for Operations Near Areas of Thunderstorm Activity

a) Air Traffic Control Considerations

A pilot intending to detour round observed weather when in receipt of an Air Traffic Service which involved ATC responsibility for separation, should obtain clearance from or notify ATC so that separation from other aircraft can be maintained. If for any reason the pilot is unable to contact ATC to inform the controller of his intended action, any manoeuvre should be limited to the extent necessary to avoid immediate danger and ATC must be informed as soon as possible.

b) Take-off and Landing

The take-off, initial climb, final approach and landing phases of flight in the vicinity of thunderstorms may present the pilot with additional problems therefore:

i) do not take-off if a thunderstorm is overhead or in the take-off flight path;

ii) at destination hold clear if a thunderstorm is overhead or in the approach/ missed approach flight path. Divert if necessary.

c) Ground Precautions

Operators should ensure that their helicopters are adequately secured on the ground when severe thunderstorm activity is forecast or present if it is inevitable to leave aircraft in the open.

3.6.1.2 Use of Weather Radar for Thunderstorm Detection - Guidance to Pilots

Flight Altitude (ft)	Echo Characteristics			
	Shape	**Intensity**	**Gradient of Intensity***	**Rate of Change**
0-20,000	Avoid by 10 miles echoes with hooks fingers, scalloped edges or other protrusions	Avoid by 5 miles echoes with sharp edges or strong intensities	Avoid by 5 miles echoes with strong gradients of intensity	Avoid by 10 miles echoes showing rapid change of shape, height or intensity

*Applicable to sets with Iso-Echo or a colour display. Iso-Echo produces a hole in a strong echo when the returned signal is above a pre-set value. Where the return around a hole is narrow, there is a strong gradient of intensity.

NOTES: 1) If the helicopter is not equipped with radar or it is inoperative, avoid by 10 miles any storm that by visual inspection is tall, growing rapidly or has an anvil top.

2) Intermittently monitor long ranges on radar to avoid getting into situations where no alternative remains but the penetration of hazardous areas.

3) Avoid flying under a cumulo-nimbus overhang. If such flight cannot be avoided, tilt antenna full up occasionally to determine, if possible,whether precipitation (which may be hail) exists in or is falling from the overhang.

3.6.2 Icing Conditions

Pitot head, static vent and fuel vent heaters should be selected ON for all flights through icing conditions, and other equipment used for anti-or de-icing according to the prevailing conditions and as recommended in the flight manual. (See paragraph 2.4.)

3.6.3 Turbulence

If the weather conditions, cloud structure and route forecast indicate that turbulence is likely, the cabin crew should be pre-warned, and the passengers advised to return to, and/or remain in their seats, and to ensure that their seat belts/harnesses are securely fastened. Loose equipment should be stowed and secured until it is evident that the risk of further turbulence has passed. Helicopters would normally experience geographical or thermal turbulence at typical operating altitudes.

3.6.4 Windshear

Pilots must remain alert to the possibility of windshear, and be prepared to make relatively harsh control movements and power changes to offset its effects. Immediately after take-off, the pilots choices of action may be limited, since he will

normally have high power applied. If the presence of shear is indicated by rapidly fluctuating airspeed and/or rate of climb/descent, ensure that full power is applied and aim to achieve maximum lift and maximum distance from the ground. Similarly, if the shear is encountered during the approach, positive application of the power and flying controls should be used to keep the speed and rate of descent within the normal limits; if there is any doubt, the approach should be abandoned and action taken as in the after take-off case above. Whenever windshear is encountered, its existence should be reported to Air Traffic Control as soon as possible.

3.6.5 Rain, Snow and Other Precipitation

On the ground, manoeuvring may require the use of slower taxying speeds to allow for the reduction in braking performance in snow, slush or standing water. At the same time, higher power settings may be required to overcome the drag caused by such contaminants, and great care should be taken to avoid rotor downwash from blowing unsecured ground equipment or contaminants into nearby aircraft. When taxying, account may need to be taken of banks of cleared snow and their proximity to tip path planes and tail rotor discs. Greater distances should be observed between successive taxying helicopters to avoid damage from downwash.

3.7 Wake Turbulence/Rotor Downwash

3.7.1 The physical characteristics of aircraft are such that their passage leaves an area of disturbed air in their wake. This wake turbulence tends to increase with the size and performance of the aircraft, and can reach dangerous proportions in relation to smaller, following aircraft. The dangers are obviously greatest during the critical stages of flight on take-off or landing, and all commanders are reminded of the need to allow adequate interval between their own and preceding heavier aircraft for any such turbulence to dissipate.

3.7.2 Aeroplanes generate their vortices at the wing tips as a consequence of producing lift and the heavier the aircraft and the slower it is flying, the stronger the vortex. Vortices are especially persistent in calm conditions.

3.7.3 Hazardous wake vortices begin to be generated by aeroplanes when the nosewheel lifts off the runway on take-off and continues until the nosewheel touches down on landing.

3.7.4 Although Air Traffic Controllers will normally warn departing or arriving aircraft of the need to observe particular intervals when following aircraft of a higher wake turbulence category, all commanders are reminded of the need to allow adequate intervals between their own and preceding heavier aircraft for turbulence to dissipate.

3.7.5 Rotor downwash is the form of wake turbulence produced by helicopters. While the effects of downwash are generally well appreciated by helicopter pilots, care should be taken not to generate downwash close to parked aircraft of any type while air taxying or manoeuvring. Hovering close to runway thresholds is potentially hazardous to airborne light aeroplanes in light/nil wind conditions.

Downwash also creates dust storms and can lift even quite heavy objects into the air instantly presenting foreign object damage (FOD) hazards to engines, main and tail rotor blades. Plastic bags or packaging sheets are a form of FOD hazard common in offshore support operations.

Generally speaking, the larger the helicopter the greater the potential downwash danger. Still air conditions permit the resulting vortices to persist and travel considerable distances.

3.8 Crew Members at their Stations

3.8.1 Flight Crew

Flight crewmembers are to occupy their assigned duty stations from the time the helicopter first starts engines until the helicopter is stationary at the end of each sector. During rotors running turnrounds one suitably qualified pilot must remain, strapped in, at the controls at all times.

3.9 Use of Passenger Safety Belts/Harnesses

a) The commander shall ensure that each person on board is briefed before take-off on how to fasten and unfasten his safety belt/harness.

b) Before take-off and landing, and whenever he considers it necessary in the interests of safety, the commander shall ensure that each passenger on board occupies a seat with his safety belt/harness properly secured.

c) Multiple occupancy of helicopter seats is not permitted other than by one adult and one child less than two years of age who is properly secured by a child restraint device.

3.10 Admission to Cockpit

3.10.1 Where the crew compartment is separate from the passenger cabin, passengers are not normally to be permitted to move to the flight crew area, except in the single-pilot case noted at paragraph 3.11.1, below. At the commanders discretion and in suitable atmospheric conditions in level flight cruise, individual passengers may be allowed to move forward and view the cockpit. Pilot(s)must remain seated at the controls and have harnesses fastened at all such times.

3.10.2 Provided only that the safety of the helicopter will not be compromised, authorised inspectors from the Competent Authority are permitted to enter and remain in the cockpit in flight when suitable facilities exist (e.g. unoccupied second pilots seat or jumpseat), for the performance of his official duties.

3.10.3 The commander will ensure that:

a) all persons carried in the cockpit are made familiar with the relevant safety and operational procedures;

b) admission to, and carriage in, the cockpit does not compromise safety.

3.10.4 The commander has the absolute authority to refuse admission to and/or carriage in the cockpit for whatever reason.

3.11 Use of Vacant Flight Crew Seats

3.11.1 For single-pilot operations in helicopters fitted with two pilot seats and dual controls, the second pilots seat may be occupied by a person who is not a member of the operating crew provided that:

a) under no circumstances should the passenger be embarked or disembarked in the co-pilots position with rotor and/or engines running;

b) the commander is satisfied that the person is briefed prior to embarkation on the use of the full harness, the requirement to keep it fastened, door emergency operation, safety procedures and equipment, and on the necessity for avoiding contact with any of the controls and switches;

c) the passenger remains strapped in with the safety harness locked at all times when the rotor is turning. This is to avoid any fouling of the controls should the passenger be incapacitated for any reason;

d) the persons stature is such that he is able to remain clear of all the flying controls while seated in a normal position;

e) when appropriate, the passenger wears a lifejacket at all times during flight.

NOTE: The commander has nevertheless an absolute right to refuse provision of a second pilots seat for passenger use if a set or part of a set of dual controls is installed.

3.12 Incapacitation of Flight Crew Members

3.12.1 The following procedures are to be used if a pilot suffers any medical symptoms in flight which might impair his ability to handle the helicopter such that, if he were in a two pilot crew, he would hand over control. These symptoms include severe pain (especially sudden severe headache or chest pain), dizziness, blurring or partial loss of vision, disorientation, vomiting or diarrhoea. The procedures must be followed even if the pilot has apparently recovered, as temporary symptoms are often a warning of more severe illness to follow, and self diagnosis is notoriously unreliable. It is very important that a single pilot should react early to any illness in flight before it becomes severe enough to affect his handling of the helicopter and an immediate radio call is essential. The first consideration must be for the safety of the helicopter and passengers, therefore, the availability of medical assistance must carry less weight when choosing the nearest suitable diversion.

3.12.2 **Effect of Flickering Light** Bright flickering light can cause epileptic-type fits in susceptible individuals. This can be induced by sunlight shining through rotor blades. Helicopter passengers sitting on the sunny side of the cabin have been known to suffer from this effect.

Premonitory symptoms of mental unease or discomfort may exist for some minutes before an actual fit occurs but this is not always the case. One corrective measure is to wear sunglasses, but if the symptoms persist in the case of a pilot, the helicopter should be turned out of the sun if possible and diverted to the nearest suitable landing place.

Epileptic fits are not harmful, but the patient should be restrained and a soft gag, such as a rolled-up handkerchief placed between the teeth to prevent the tongue being bitten.

AIC 75/2001 (Pink 23) 20 September 2001 gives further guidance.

3.13 Cabin Safety Requirements

3.13.1 Depending on the helicopter type and crew composition, a member of the flight crew will be responsible for cabin safety from the time the aircraft is accepted for flight, until all the passengers have been offloaded at the end of the flight.

3.13.2 Refuelling

If circumstances require that refuelling or defuelling operations take place while passengers are embarking, are on board, or are disembarking, the procedures detailed in paragraph 2.1.3 are invariably to be followed.

3.14 Passenger Briefing Procedures

The commander is responsible for ensuring that all the passengers are given the appropriate briefing, or equipment demonstration, for the various stages of flight, as outlined in the following paragraphs.

3.14.1 Pre-Board Briefing Concerning Dangerous Goods

Dangerous goods must not be carried in or as passenger or crew checked or carry-on baggage. Security type attaché cases with built in dangerous goods, e.g. lithium batteries or pyrotechnic material, are totally forbidden.

3.14.2 Pre-Take-off Briefing

Passengers attention is to be drawn to the briefing cards, which they should be advised to read, and they are in any case to be verbally briefed on:

a) restrictions or ban on smoking, as appropriate;

b) position of seat-backs if applicable;

c) location and use of emergency exits;

d) location and use of emergency exit illumination systems, where fitted;

e) stowage of carry-on baggage;

f) restrictions on the use of portable electronic devices.

3.14.3 Pre-Take-off Demonstration

The following items are to be demonstrated:

a) the use, fastening and unfastening of safety belts/harnesses;

b) the location and use of the life-jackets if any part of the take-off or approach path will be over water. This demonstration can take place prior to boarding the aircraft.

3.14.4 In Flight

Passengers are to be advised as necessary throughout the flight whenever conditions require the fastening of seat belts or the cessation of smoking.

3.14.5 Before Landing

Before landing, passengers are to be advised that:

a) all cigarettes etc., should be extinguished;

b) carry-on baggage should be secured;

c) seat backs should be returned to the upright position, if applicable;

d) seat belts/harnesses should be fastened;

e) for offshore flights, local orders concerning use of immersion suit hoods should be observed.

3.14.6 After Landing

After landing, passengers are to be instructed to remain seated, with safety belts/ harnesses fastened until the helicopter has come to rest, and to refrain from smoking until they have entered a clearly defined smoking area.

3.14.7 Depending on the helicopter type and passenger complement, the in-flight and pre-landing briefings may be given by a cabin crew member, by the use of illuminated cabin warning signs, or verbally by a member of the flight crew where the other two options are not available.

3.14.8 If an emergency occurs during flight the passengers are to be briefed on such emergency action as may be appropriate to the circumstances.

4 All Weather Operations

4.1 Non-precision and Category 1 Operations

4.1.1 Operating Minima

Operating minima shall be determined as detailed in paragraph 1.3 and presented as detailed in paragraph 1.5.

4.1.2 Definitions

a) Non-precision Approach and Landing Operations – An instrument approach and landing which does not utilise electronic glide path guidance.

b) Precision Approach and Landing Operations – An instrument approach and landing using precision azimuth and glide path guidance with minima as determined by the category of operation.

c) Category 1 (Cat 1) Operation – A precision instrument approach and landing using ILS, MLS or PAR with a decision height of not lower than 200 ft and with an RVR not less than 500 m (helicopters).

d) Final Approach – That part of an instrument approach procedure which commences at the specified final approach fix or point, or where such a fix or point is not specified:

   i) at the end of the last procedure turn, base turn or inbound turn of a racetrack procedure, if specified; or

   ii) at the point of interception of the last track specified in the approach procedure;

   and ends at a point in the vicinity of an aerodrome or heliport from which:

      A) a landing can be made; or

      B) a missed approach procedure is initiated.

e) Circling Approach – Circling is the term used to describe the visual phase of an instrument approach to bring a helicopter into position for landing on a FATO which is not suitably located for a straight in approach.

f) Minimum Descent Altitude/Height (MDA/H) – A specified altitude/height in a non-precision approach or circling approach below which descent may not be made without visual reference.

g) Decision Altitude/Height (DA/H) – A specified altitude/height (A/H) in the precision approach at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.

h) Cloud Base – The lowest reported cloud level (reported as FEW)

i) Cloud Ceiling – 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 one half of the sky.

NOTES: 1) Decision altitude (DA) is referenced to mean sea level (MSL) and decision height (DH) is referenced to the threshold elevation.

2) The Required Visual Reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the helicopter position and rate of change of position, in relation to the desired flight path.

j) Visual Reference, Non-precision Approach. A pilot may not continue an approach below MDA/H unless at least one of the following visual references for the intended runway or FATO is distinctly visible and identifiable to the pilot:

i) elements of the approach light system;

ii) the threshold;

iii) the threshold markings;

iv) the threshold lights;

v) the threshold identification lights;

vi) the visual glideslope indicator;

vii) the touchdown zone or touchdown zone markings;

viii) the touchdown zone lights;

ix) runway edge lights; or

x) other visual references accepted by the Authority.

k) Visual Reference, Category 1 Approach. A pilot may not continue an approach below the Category 1 DA/H unless at least one of the visual references described in 1.3.2.10 inclusive for the intended runway or FATO is distinctly visible and identifiable to the pilot.

l) Missed Approach Point (MAPt). That point in an instrument approach procedure at or before which the prescribed missed approach procedure must be initiated in order to ensure that the minimum obstacle clearance is not infringed.

m) Obstacle Clearance Altitude/Height (OCA/H). The lowest altitude (OCA), or alternatively the lowest height (OCH) above the elevation of the relevant runway or FATO threshold or above the aerodrome or heliport elevation as applicable (OCH), used in establishing compliance with appropriate obstacle clearance criteria.

n) Obstacle Clearance Limit (OCL). The height above aerodrome or heliport elevation below which the minimum prescribed vertical clearance cannot be maintained either on approach or in the event of a missed approach.

o) Runway Visual Range (RVR). The range over which the pilot of a helicopter on the centreline of a runway or FATO can see the runway or FATO surface markings or the lights delineating the runway or FATO for identifying its centreline.

p) Reported RVR. The RVR communicated to the commander of a helicopter, by or on behalf of the person in charge of the aerodrome or heliport.

q) Visual Approach. An approach by an IFR flight when either part or all of an instrument approach procedure is not completed and the approach is executed in visual reference to terrain.

NOTE: An Operator shall not use an RVR of less than 800 metres for a visual approach.

r) Approach Ban (commencement and continuation of approach).

i) A pilot-in-command may commence an instrument approach regardless of the reported RVR/Visibility but the approach shall not be continued beyond the outer marker, or equivalent position (see Note below), if the reported RVR/ Visibility is less than the applicable minima.

ii) Where RVR is not available, the pilot-in-command may derive an RVR value by converting the reported visibility in accordance with paragraph 1.3.2.8 Table 4 for non-precision and Category 1 approaches only.

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

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

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

NOTE: The equivalent position referred to in (i) above can be established by means of a DME distance, a suitably located NDB or VOR, SRE or PAR fix or any other suitable fix that independently establishes the position of the helicopter.

4.1.3 **Operating Procedures**

4.1.3.1 **Take-off Briefing**. Before every take-off, a briefing will be given to cover all the relevant aspects of that take-off and subsequent departure. Full details of this briefing are to be found in Part B - Helicopter Operating Matters, Type Related.

4.1.3.2 **Monitoring of Radio Aids**

a) Cross monitor possible. i.e. the ability to use one radio aid to cross-check the information from another when multiple aids are available such as ILS with NDB/VOR etc. All radio aids are to be identified by at least one pilot and the primary aid is to be identified by all operating flight deck crew members.

b) No cross monitor possible. When one radio aid alone is used then it must be identified by all operating flight deck crew members and the call sign must be monitored or re-identified as follows:

i) ILS The call sign must be re-identified:

A) when the helicopter is established on the localizer;

B) whenever warning flags have appeared and cleared;

C) whenever indications are in doubt.

NOTE: Presence of an ILS call sign does not confirm the integrity of the glideslope signal.

ii) VOR The call sign must be re-identified:

A) when established on the inbound radial or when on final approach;

B) whenever warning flags have appeared and cleared including passing an indicated overhead;

C) whenever indications are in doubt.

iii) NDB The call sign is to be monitored by one operating flight deck crew member throughout the approach, and missed approach when relevant.

4.1.3.3 Even if a stopwatch timing facility is not obligatory for the type of approach being conducted It must be remembered that timing provides useful navigational information and can be used as a gross error check.

4.1.3.4 Missed Approach. An instrument approach must be discontinued if visual reference has not been attained or cannot be maintained and:

a) warning flags indicate a failure;

b) the call sign of the primary aid ceases;

c) indications are in doubt;

d) the helicopter is displaced vertically and/or laterally beyond pre-determined limits;

e) on an SRA or PAR approach if communications cease.

4.1.3.5 Warning Flags. It ispossible during certain ground station malfunctions for warning flags not to appear when the main signal is invalid. This emphasises the need for cross-monitoring when possible and being alert at all times to helicopter anomalous behaviour, e.g. abnormal headings and rates of descent for the type of approach flown and current wind velocities.

4.1.3.6 Descent for Approach. A helicopter must not descend below the appropriate safety altitude except:

a) by using an Instrument Approach procedure; or

b) when under positive radar control and the helicopter commander is satisfied with the flight profile; or

c) when in continuing visual contact with the ground and able to ensure adequate clearance from all obstacles affecting the intended flight path.

NOTE: Descent when using ILS glideslope information as the sole means of vertical guidance must not be made below the relevant safety altitude until the helicopter is established on the ILS localiser and is within 10 NM of touchdown.

4.1.3.7 The position of the helicopter must be positively established prior to commencing descent and re-confirmed prior to descending below the relevant safety altitude.

4.1.3.8 Except in an emergency, or when there has been a significant change in reported weather conditions, no more than two successive approaches to an aerodrome or heliport may be carried out where both approaches have resulted in go-around.

4.1.3.9 Approach and Landing Briefing. This must be given by the handling pilot or helicopter commander before the helicopter commences its initial descent for approach and should cover at least the following items:

a) initial descent point navigational fix;

b) any aerodrome or heliport special briefing;

c) safety altitudes, MOCA, MORA and Sector Safety Altitude (SSA) and Minimum Safe Altitude (MSA) from approach plate (See Note below);

d) the Standard Arrival (STAR) or arrival route including transition level, holding facility, minimum holding altitude and speed restrictions, where appropriate to helicopter operations;

e) the Instrument Approach Plate (Chart) covering procedures, radio aids, and approach minima;

f) the aerodrome chart covering touchdown elevation, QNH/QFE millibar/ hectapascal difference if relevant, expected visual cues on contact, runway/FATO conditions and expected runway exit;

g) helicopter operation covering anti-icing, approach speed and wind additives, continuous ignition, wipers, landing lights, and wheel brake/tail wheel, requirements;

h) planned alternate aerodrome or heliport and fuel requirement;

i) any additional items; and

j) questions.

NOTE: Non-approved let downs under IMC. The company operations manual should include instructions to preclude descent below the Minimum Safe Altitude on instrument approaches conducted under IMC unless such procedures are published or approved as discrete procedures.

4.1.3.10 All pre-landing checks should be completed before the helicopter descends below 1000 ft above the runway/FATO threshold excepting only type specific and/or late phase items such as landing lights,windscreen wipers etc. This is in order that the final stages of the approach can be adequately monitored.

4.1.3.11 During all approaches the helicopters descent path must be carefully monitored. This is of particular relevance when conducting non-precision approaches where altitude/ height versus range/fix checks are to be strictly observed.

4.1.3.12 For operations to heliports where there are neither navigational aids nor published procedures, specific instructions are detailed in Part C.

4.2 Low Visibility Operations

4.2.1 **Low Visibility Procedures (LVPs)** These are ground procedures at the aerodrome or heliport designed to prevent the entry of ground vehicles and taxying aircraft into areas protected for take-off and landing. In addition they protect the sensitive areas of the aerodromes ILS or MLS transmissions and regulate the flow of air traffic on the approach. ATC at the aerodrome or heliport will ensure these procedures have been implemented by the time:

a) the cloud ceiling is 200 ft or less; or

b) the RVR has dropped to 600 m or less.

4.2.2 **Cloud Ceiling** The height of the base of cloud at the aerodrome or heliport which is sufficient to obscure more than half of the sky visible.

5 Use of the Minimum Equipment Lists

5.1 Unserviceabilities

Occasions arise when certain items of installed helicopter equipment may be unserviceable without adversely affecting the helicopters fitness for a particular flight,or the required level of safety. The Company holds an acceptance from the Competent Authority which allows its helicopter(s) to operate with such items unserviceable, subject to the requirements of its MEL. The MEL is based on, but may not be less restrictive than the Master MEL which has been produced for the type by the helicopter manufacturer, and approved by the Authority.

5.2 MEL

As its name implies, the MEL lists all the equipment, systems and installations which must be serviceable before a particular flight is undertaken. Items which may be unserviceable are indicated, together with any additional limitations which may apply to flights with such items inoperative. The MEL provides the commander with the authority to operate the helicopter(s) with specified items of equipment unserviceable, but it must be emphasised that, irrespective of the provisions of the MEL, he is not obliged to operate with a particular defect or defects if in his opinion these unserviceabilities could adversely affect the safety of a proposed flight. Further, the MEL must take into account the area of operation including whether the helicopter is being despatched from base or an outstation.

5.3 Specific MEL

MELs for those types of Company helicopters for which acceptances are held are contained in Part B, Section 9 for the specific type.

6 Oxygen Requirements

6.1 Non-pressurised Helicopters

Helicopters shall not be operated at altitudes exceeding 10,000 feet unless supplemental oxygen is provided to meet the following requirements:

a) supply for all members of the flight crew for the entire flight time above a pressure altitude of 10,000 feet;

b) supply for all required cabin crew members for the entire flight time at pressure altitudes above 12,000 feet and for any period exceeding 30 minutes at pressure altitudes above 10,000 feet but not exceeding 12,000 feet;

c) supply for all passengers for the entire flight time above a pressure altitude of 13,000 feet;

d) supply for 10% of the passengers for the entire flight time after 30 minutes above a pressure altitude of 10,000 feet but not exceeding 13,000 feet.

NOTE: Cabin crew members carried above the minimum number required shall be considered as passengers for the purpose of oxygen supply.

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Section 8 Sporting Weapons

1 Conditions Under Which Sporting Weapons May Be Carried

1.1 Sporting weapons and ammunition for such weapons may be carried provided they are stowed in a place on the helicopter which is inaccessible to passengers during flight and, in the the case of firearms, unloaded. All reasonable measures must be taken to ensure the operator is made aware of the intended carriage of sporting weapons and ammunition.

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Section 9 Handling of Accidents, Incidents and Occurrences

1 Accident

1.1 Definitions

1.1.1 **Accident:** The following is the International Civil Aviation Organization's (ICAO) definition of an Accident and also the definition of a UK Reportable Accident.

An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked therefrom, in which:

a) a person suffers a fatal or serious injury as a result of:

i) being in or upon the aircraft;

ii) direct contact with any part of the aircraft, including parts which have become detached from the aircraft; or

iii) direct exposure to jet blast, except when the injuries are from natural causes, self inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

b) the aircraft sustains damage or structural failure which:

i) adversely affects the structural strength, performance or flight characteristics of the aircraft; and

ii) would normally require major repair or replacement of the affected component;

except for engine failure or damage, when the damage is limited to the engine, its cowlings or accessories; or for damage limited to propellers, wing tips, antennas, tyres, brakes, fairings, small dents or puncture holes in the aircraft skin; or

c) the aircraft is missing or is completely inaccessible.

1.1.2 **Serious Injury:** Serious injury means an injury which is sustained by a person in an accident and which:

a) requires hospitalisation for more than 48 hours, commencing within seven days from the date the injury was received;

b) results in a fracture of any bone (except simple fractures of fingers, toes or nose);

c) involves lacerations which cause severe haemorrhage, nerve, muscle or tendon damage;

d) involves injury to any internal organ;

e) involves second or third degree burns or any burns affecting more than five per cent of the body surface;

f) involves verified exposure to infectious substances or injurious radiation.

1.2 **Pilot Post Accident Procedures** Immediately after an accident on land, or a ditching, and following the evacuation of the passengers to either a sheltered location upwind of the aircraft, or in to the liferaft,the pilot should carry out, or delegate the following duties to either a crew member or a selected passenger:

a) Subject to safety and the prevailing situation the aircraft should be left in a safe condition with fuel off and aircraft batteries disconnected and equipment such as first aid kits, survival packs and fire extinguishers removed.

b) A headcount should be made to account for all persons on board at the time of the accident. In the event of a person, or persons being unaccounted for, action should be taken to recover them or locate their whereabouts.

c) The needs of any injured person should be administered to as far as is possible - such persons should be made as comfortable as is practicable.

d) The bodies of any victims should be decently set apart and covered.

e) Activate the distress beacon and establish feasibility of using aircraft radio equipment. Prepare pyrotechnics for immediate use. Select, mark and prepare a rescue helicopter landing site. If a site is not available, lay out appropriate search and rescue signals.

f) If people, dwellings, or communications facilities are very close to the scene of the accident, consider sending for assistance, having regard to the local situation, distress messages, transmitted and received, and the local Search and Rescue (SAR) facilities.

g) If rescue is likely to be delayed for reasons of distance, or failing daylight, prepare suitable shelters, distribute necessary rations of food and water. If necessary, ascertain the availability of fresh water in the immediate vicinity of the accident.

h) Subsequent to rescue and subject to the location of the accident, the police should be informed and assistance sought in the placing of guards on the aircraft. Alternatively, consideration should be given to hiring local watchmen.

1.3 **Aircraft Accident Reporting** Following an accident or incident involving Company aircraft the Captain shall complete the Company Accident Report, in addition to complying with the laws and regulations of the country of registration and the country in which the accident or incident occurred. Aircraft accidents and incidents are classified by the Aircraft Accident Investigation Branch (AAIB), for reporting purposes, in accordance with the definitions as detailed in this Section.

1.3.1 **Accident Reporting Procedures** Whenever an accident occurs, the following sequence of reporting actions must be followed:

a) Fax or Telex the Company immediately using the prefix ACCIDENT, in accordance with the format prescribed below.

b) If appropriate, telephone the Company in accordance with the requirements detailed below.

c) Where necessary notify the competent authority of the country in which the accident occurs and/or in which the aircraft is registered. The accident message should indicate whether such notification has been made or is intended. Instructions regarding the required notification will be found in the appropriate local Regulations, for example in the United Kingdom:

The Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 1996 and the Civil Aviation (Investigation of Military Air Accidents at Civil Aerodromes) Regulations 2005.

The relevant parts of the Regulations and requirements (including Fax and Telex addresses and telephone numbers) are to be reproduced in the Operations Base Instructions.

d) Complete and despatch the Company Accident Report form as soon as possible but in any case within 72 hours of the accident. Where items of the report cannot be completed due to lack of information, they should be marked to be completed and the missing information forwarded when obtained, rather than delaying the report.

e) Where appropriate, a second copy of the Accident Report should be submitted to the Area Manager or the Managing Pilot, who should in any case be notified simultaneously with a) and b) above.

1.3.2 **Responsibility for Accident Reporting** After any accident, it is the responsibility of the pilot involved and of the Unit Chief Pilot, or the senior staff member on site, to ensure that the accident is reported to the AAIB without delay. Accidents must be notified to the Company via the quickest means, which may or may not involve routing through the Area Manager's office.

The Area Manager (or Chief Pilot) will issue to each unit standing instructions regarding any requirement to notify the appropriate and local authorities. A copy of these instructions should be incorporated in the Base Instructions.

In the United Kingdom and for British registered aircraft, and for aircraft of British manufacture, the AAIB will be notified by the Company.

1.3.3 **Reporting by Fax/Telex:** When reporting accidents to the Company by Fax or Telex, the following numbers should be used:

Fax:

Telex:

The message should be in the standardised form as follows:

AA for accidents the identifying abbreviation ACCID, for serius incidents INCID;

BB manufacturer, model, nationality and registration marks, and serial number of aircraft;

CC name of owner, operator and hirer, if any, of the aircraft;

DD name of the PIC;

EE date and time (local time or UTC) of the accident or serious incident;

FF last point of departure and point of intended landing of the aircraft;

GG position of the aircraft with reference to some easily defined geographical point and latitude and longitude;

HH number of crew and passengers; aboard, killed and seriously injured; others killed and seriously injured;

II nature of the accident or serious incident and the extent of damage to the aircraft so far as is known;

JJ an indication to what extent the investigation will be conducted or is proposed to be delegated by the State of Occurrence;

KK physical characteristics of the accident or serious incident area; and

LL identification of the originating authority

1.4 **Follow-up Information**

In view of postal uncertainties and possible delay in the arrival of the Accident Report, the person responsible shall provide the Operations Director with follow-up information either by telephone, Fax or Telex. This should include:

a) Additional information which may come to light or updating earlier information already sent.

b) Any apparent mechanical failure discovered.

c) The form of investigation which may be taking place and aspects which are receiving special consideration.

d) Recommendation regarding the pilots return to duty as prescribed in 'Flying after an Accident' below.

It is emphasised that this follow-up procedure is an essential requirement to enable the Operations Director to decide on what further action is appropriate.

Follow-up messages addressed to the Company on matters concerning accidents incidents shall be prefixed 'Re Accident .....' or 'Re Incident ....' followed by the aircraft registration to which the information refers.

1.5 **Reporting by Telephone** In the event of an accident in which fatalities or serious injuries are sustained or persons are missing or where grave political or international embarrassment or serious adverse publicity may result, the local Area Manager and the Company must be informed, day or night, without delay.

Telephone number ..... during the following hours:

0800 --1900 MONDAY to FRIDAY.

Outside these hours an ANSAFONE service provides additional information.

1.6 **Completing the Accident Report Form** All sections of the report shall be completed. Appendices I, II and III should be completed if appropriate. Statements need not be restricted simply to the questions which are suggested therein.

1.7 **Accident Report Distribution (see also paragraph 5)** All Accident Reports shall be addressed to the Operations Department (Flight Safety) with a copy held on file on the Unit. Where appropriate, a copy shall be supplied by the Unit to the Area Manager or Managing Pilot.

1.8 **Flying After an Accident** After being involved in an accident as defined at the beginning of this paragraph, the crew shall not carry out further flying duties.

Crew members shall remain on site, unless to undergo medical treatment or examination, and may not be scheduled for flying duties until authorised by the Operations Department after the preliminary findings of the investigation are known or apparent.

In order to expedite a crew member's return to normal flying duties, the Chief Pilot or similarly authorised person may, as a result of the preliminary investigation, recommend to the Operations Director that, in his own carefully considered judgement, the actions of the crew member were in no way a contributory cause of the accident, nor, commensurate with the average ability of an alert, well-trained crew member, contributed to any subsequent damage.

2 Incident

2.1 Definition

2.1.1 **Incident** An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation:

Examples:

a) A precautionary or forced landing without subsequent substantial damage to the aircraft or third parties, nor serious injury to the crew, passengers or other persons.

b) An engine failure or stoppage which does not consequently result in substantial damage nor serious injuries.

c) A tail rotor control failure in flight which does not consequently result in substantial damage nor serious injury.

d) An external part of the aircraft becoming detached in flight, not causing substantial damage nor serious injury to a third party.

e) Instances of contaminated fuel. Absence of fuel quality control.

f) A forced, unscheduled, change of flight plan caused by the failure of aircraft instruments, navigation aids or other technical failure.

g) Obstruction on rig landing platform or other landing site.

h) Loss of external load, with no third party claim.

i) Bird strikes, Airprox, In-flight Icing.

It must be realised that an Incident Report is not required to apportion blame but to prevent a similar incident recurring when the consequences might be more serious. The Company however, would take a very serious view of any failure to report any incident which subsequently came to light.

2.1.2 **Serious Incident** An incident involving circumstances indicating that an accident nearly occurred.

Example:

a) The safety of passengers, crew or aircraft has been jeopardised and narrowly avoids being an accident (by good handling, good luck, etc)

b) Has serious potential technical or operational implications, or

c) May result in formal disciplinary action against aircrew or engineers.

The decision to classify an Incident as 'Serious' will normally be made by the senior person on the operation. This decision must be made as soon as possible after the event and before the crew or aircraft fly again.

The Chief Pilot of Area Manager is to relieve the crew from flying duties until theyhave been interviewed and assessed fit for duty. Any such action would be principally to preserve the crews recollection of the incident or to ensure their fitness for duty rather than for disciplinary reasons.

If, following a serious incident, the aircraft lands away from base a replacement Cockpit Voice Recorder (CVR) or Flight Data Recorder (FDR), if appropriate, is to be installed before the aircraft flies again and the records installed at the time of the incident returned to base for action. If the crew or engineers attending the incident know or suspect that an incident may be classified as serious they should ensure that any CVR or FDR, if fitted, is disabled after shutdown to prevent any relevant data being overwritten when power is re-applied to the aircraft.

2.2 Incident Investigation

The purpose of Incident reporting is to improve the safety and reliability of aircraft and their operation and thereby to avoid accidents and serious incidents. It is not the purpose of the incident reporting scheme to apportion blame, but it must be appreciated that where there is clear evidence of serious negligence or incompetence, the Company has a duty to take any action that may be necessary to ensure the future safety of its aircraft and their occupants.

All incidents must be investigated if the purpose of the incident reporting scheme is to be served; the depth of the investigation required depending upon the seriousness of the incident. It is important that all incident reports should include sufficient information for the incident to be fully assessed by the Companys Flight Safety staff. The Chief Pilot is to ensure that both Aircrew and Engineering sections give a full account of the incident, its causes and its consequences both actual and potential.

The investigation of all incidents is a joint Operations/Engineering task and is to be carried out as a co-ordinated exercise by the Chief Pilot and Chief Engineer or delegated to a suitably qualified Captain and Licensed Engineer. In the case of Serious Incidents, as defined above, the investigation is to be conducted formally and both the Operations and Engineering investigators are to be senior members of the operation (e.g. Training Captain, Deputy Chief Engineer). Both investigators should be present at all interviews, component inspections etc and their report should be jointly produced.

2.3 Incident Reporting Procedures

The pilot involved is to complete the Incident Report Form within three days of the occurrence. The Chief Pilot and Chief Engineer should add the report of their local investigation together with their comments and recommendations stating any immediate preventative action which may have been taken.

Chief Pilots should anticipate that certain incidents may be subject to an insurance or warranty claim and will therefore need to complete page 7 of the Accident Report 'Details Required for Insurance Purposes' in addition to the Incident Report. Instances of this would be for any major component change, or the loss of an external load. In the latter case, it would be necessary to report whether the lost load had subsequently been recovered and whether repairable or not.

The completed Incident Report should be despatched to the Operations Department (Flight Safety) within 5 days of this occurrence.

3 Local Assessment

In order that Accident and Incident Reports can be more readily assessed, it is extremely important that chief Pilots should give careful consideration to the circumstances of the event before the report is forwarded to the Company. Their comments and recommendations are a very necessary part of the report and should include opinion as well as any relevant background information which may not be otherwise apparently from the text of the Pilots or Chief Engineers report.

Failure on the part of the Chief Pilot to do this may result in an erroneous or incomplete assessment of the incident which in turn can give rise to protracted correspondence before the file on the event can finally be closed.

4 Supporting Information

Where they may be relevant, the following documents and information should accompany Accident or Incident Reports:

Photographs of the aircraft and area
Position of cockpit controls and switches
Sketch map of the area
Passenger/eye witness report
Post accident medical reports in respect of crew and passengers
Copy of the Standard or Multiple Sector Load Sheet
Any relevant extracts from local legislation and/or Base instructions.
Weather Report
Passenger seat plan in the aircraft
Extract from radio log
Engine power checking data for the 30 days preceding the accident or incident
Post accident procedures carried out.

5 Accident and Incident Report Distribution

5.1 All Accident and Incident Reports shall be addressed to the Operations Department (Flight Safety) with a copy held on file on the Unit. Where appropriate, a copy shall be supplied by the Unit to the Area Manager or Managing Pilot.

5.2 The Sections comprising the Accident Report must be kept intact and not separately posted to the respective department heads. Likewise supporting information should be attached to the Accident or Incident Report and sent under the same cover, if possible. A receipt will be returned to the Unit by the Flight Safety Department giving a reference number to the Accident or Incident which should be used in any further correspondence.

5.3 The reports will, on receipt, be subject to immediate internal distribution and will, in summary form, be distributed to all Units on a monthly basis. The monthly Incident/ Accident Summaries should be made available to all pilots and engineers but they are not to be copied or shown to non-Company personnel and are to be treated as confidential documents.

5.4 An accident file can only be closed by the Operations Director and any disciplinary measure which may arise from such events can only originate from or be authorised by him.

6 Mandatory Occurrence Reporting Scheme

6.1 The Civil Aviation Authority Mandatory Occurrence Reporting Scheme (MORS) relates to all British registered public transport aircraft. Occurrences should be reported to the Flight Safety Officer who will forward the MOR to:

The Research and Analysis Department
Civil Aviation Authority
Aviation House
Gatwick Airport South
West Sussex
RH6 0YR

Tel: 01293 573220
Fax: 01293 573972

Occurrences to non-British registered Company aircraft will be reported by overseas operations if they relate to an aircraft type operated by the Company on the British register, or of British manufacture.

6.2 **Objectives of the Scheme**

a) To ensure that the CAA is advised of hazardous or potentially hazardous incidents and defects, referred to as 'Occurrences'.

b) To ensure that knowledge of these occurrences is disseminated so that other persons and organisations may learn from them.

c) To enable an assessment to be made by those concerned, of the safety implications of each occurrence, both in itself and in relation to previous similar occurrences, so that they may take or initiate any necessary action.

The overall objective of the MORS is to use the reported information to improve the level of flight safety and not to attribute blame.

6.3 **Definition of a Reportable Occurrence** A reportable occurrence in relation to an aircraft means:

a) any incident relating to such 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 person and

b) any defect in or malfunctioning of any facility on the ground used or intended to be used for purposes of or in connection with the operation of such an aircraft, being a defect or malfunctioning endangering, or which if not corrected would endanger, such an aircraft or its occupants.

6.4 **Informing Base of Occurrences**

a) The following is intended as guidance to aircraft Commanders experiencing a technical malfunction or other occurrence away from base.

b) In all cases where the nature or extent of a problem is such that the flight cannot be continued normally, advise shall be sought from Managerial and Engineering staff at the operating base. Whenever possible, the first point of contact should be with the duty Operations Co-ordinator who will then alert the appropriate personnel for consultation.

c) Whilst it is difficult to formulate a hard and fast rule to cover every possible situation, the general principle shall apply that unless the aircraft is judged serviceable to public transport standards it shall not be ferried back to base until the problem has been fully researched.

d) It follows that a return to base without passengers will not normally be undertaken and then only when specifically authorised by Managerial staff at Base and with the concurrence of the aircraft captain who will retain at all times the ultimate NO-GO decision.

e) Because of the attendant risk of misunderstanding due to poor communications, crews stranded away from base should arrange to discuss their problem by a radio/ telephone link call if possible having alerted the relevant base personnel to standby through High Frequency (HF) radio.

f) In the case of crews experiencing in-flight unserviceability which in the opinion of the Captain can be rectified on return to base, the symptoms must still be reported on VHF or HF radio. This will also enable the Engineering Department to prepare themselves to rectify the defects when the aircraft lands.

g) It is mandatory that crews inform their operating base of occurrences such as birdstrikes, minor illnesses etc. as well as technical defects before continuing the flight, and if it is impractical, as soon as possible after take-off.

7 Airprox, Birdstrike and Lightning Strike Reports

7.1 Because of the specialist and detailed nature of the information required for Airprox, Birdstrike and Lightning strike occurrences, they are to be reported on the Specialised Report Form CA 1282 or the Lightning Strike Report Form. Copies of these forms are to be held on each operation and may be obtained from the Company Operations Department.

7.2 The address to which the completed forms should be sent is printed on each form. In the case of birdstrikes, damage photographs should be submitted if possible. A duplicate copy is to be sent to the Operations Department (Flight Safety) attached to a Company Incident Report.

7.3 The submission of Airprox or Birdstrike and Lightning Strike reports constitutes compliance with the MORS. The CAA will, by internal arrangements, ensure that the information, where appropriate, is incorporated into the Mandatory Occurrence Database.

7.4 It should be noted that certain items of information following an Airprox should immediately be reported by radio to the ATS unit being worked. If this is not possible, this initial report should be made immediately after landing by telephone to any UK Air Traffic Control Centre (ATCC). Additionally, a telephone report to the London Area Control Centre (LACC), Swanwick will enable radar tracing action to be initiated.

7.5 The initial report should be confirmed within seven days by submitting the completed Form CA 1094. The CAA is obliged to issue a press statement following any Airprox involving a public transport aircraft. This press statement is initiated by the initial report to the ATS unit and not by submission of Form CA 1094. It is therefore important that, if on reflection or in the light of further knowledge, it is decided not to proceed with an Airprox report,the ATS unit to which the initial call was made must be informed of this as soon as possible.

8 Wake Turbulence

8.1 Reports of wake turbulence encounters at any stage of flight should be reported immediately to ATC by radio and then sent to the Wake Vortex and Radar Analysis Incidents, Air Traffic Management Development Centre, NATS Ltd, Swanwick. Tel: 01489 615813. Form CA 1673 should be used for the report.

9 Confidential Human Factors Incident Reports (CHIRPS)

9.1 Reports of incidents or occurrences involving human factors and/or errors which the reporter wishes to remain confidential should be sent to CHIRP (Freepost – G13439) Building Y20E, Room G15, Cody Technology Park, Ively Road, Farnborough, Hants GU14 0LX. Tel: 01252 395013 Fax: 01252 394290

10 Investigation/Rectification Away From Base

10.1 There are occasions following a warning or minor malfunction offshore or away from base where a pilot may carry out an investigation or minor rectification under the instructions of base engineers, e.g. examination and cleaning of a magnetic plug following a chip warning.

In such cases the Air Navigation Order 2005, Article 16(3)(b) requires details to be given to the CAA within 10 days. To enable the Company to comply with this, the following details are to be sent by telex or fax to . . . . . for the attention of the Chief Inspector and copied to the Flight Safety Officer, as soon as possible after return to base:

Date and time of occurrence
Type and registration of helicopter
Name of aircraft Commander
Location at which inspection/rectification was carried out
Brief details of defect and action carried out
Brief details of engineering action following flight to maintenance base.

11 Confidentiality

Staff are not to discuss circumstances concerning any accident/occurrence with anyone outside the Company other than authorised investigators.

Section 10 Rules of the Air

Refer to Rules of the Air Regulations, 2007, S.I. No. 2005/1970 amended by S.I. No. 2007/274 in CAP 393, available at www.caa.co.uk/CAP393 or from the CAA's publishers whose details are available on the inside cover of this publication.

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Part B Provided by the Operator

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Part C Provided by the Operator

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Part D Safety Management Systems (SMS) and Risk Assesssments (RA)

Section 1 Aerial Work Aircraft - Legislation

The following ANO references apply to aerial work aircraft:

Article 11	Prohibitions on the use of Permit aircraft.
Article 14	Requirement for a CMR.
Article 15	Requirements for a Technical Log.
Article 26	Prohibition of student pilots.
Article 81(3)(a)(i)	Definition of "Flight Time".
Article 84	Flight Time Limitations (FTL).
Article 88(2)(d)	Requirement for carriage of documents.
Article 140	Requirement for DfT Permit for foreign registered aircraft.
Schedule 4	Requirement for carriage of equipment.
Schedule 8	Licence privileges.

Section 2 Safety Management Systems and Risk Assessments

NB: The use of a Safety Management System (SMS) is not mandatory for corporate helicopter operators but its use is highly recommended. The completion of Risk Assessments (RA) is compulsory under the Health and Safety Workplace Regulations 1999. If there are 5 or more employees then these RA must be in written form.

2.1 What are RA?

RA are nothing more than a careful examination of what, in your operation, could cause harm to people, so that you can weigh up whether you have taken enough precautions or should do more to prevent harm. This assessment will be subjective and should reflect the individual nature of each operation, covering both ground and air risks.

2.2 Core definitions for RA

Hazard - anything that can cause harm.

Risk - the chance, high or low, that someone or something, may be harmed by a hazard.

So the Risk = the Hazard x the Likelihood of Occurrence.

The detailed RA should not be listed in the Operations Manual, as this would require an amendment to the Operations Manual for every change to the RA. The RA should be in a separate document, which is referenced within the Operations Manual.

2.3 Why must RA be carried out?

2.3.1 The HSE produce a document entitled Health and Safety Regulation - A Short Guide - HSC13 rev 1, which states:

The main requirement on employers is to carry out a risk assessment.

2.3.2 The Management of Health and Safety at Work Regulations 1999 (Statutory Instrument No. 3242) states that:

Every employer shall make a suitable and sufficient assessment of -

a) the risks to the health and safety of his employees to which they are exposed whilst they are at work; and

b) the risks to the health and safety of persons not in his employment arising out of or in connection with the conduct by him of his undertaking, for the purpose of identifying the measures he needs to take to comply with the requirements and prohibitions imposed upon him by or under the relevant statutory provisions.

Thus the Government mandates the requirement for an employer to conduct RA.

2.3.3 An employee is anyone who assists in carrying out the business of the company, whether paid or unpaid.

2.3.4 There is also one significant caveat:

Where the employer employs five or more employees, he shall record the arrangements referred to in the above paragraph.

This means that if a person employs five or more employees he must document his RAs but if employing less than five employees, though the RAs must still be carried out, they do not have to be written down. Best practice is to write RA even where this is not a legal requirement.

2.3.5 The CAA recommendation remains that it is in the interests of every operator to minimise exposure to unnecessary personal and business risk. Writing down RAs forms an integral part of this process. If an operator were unfortunate to be sued by an employee, a parachutist or a member of the general public, it might be more difficult to prove that the appropriate "duty of care" had been exercised without such supporting documentation.

3 How do I carry out RA?

3.1 General guidance on the completion of RA can be obtained from the following web sites:

3.1.1 5 steps to RA - www.hse.gov.uk/pubns/indg163.pdf

3.1.2 Health & Safety Legislation – a Short Guide - www.hse.gov.uk/pubns/hsc13.pdf

3.1.3 Health and Safety Law – What You Should Know – www.hse.gov.uk.pubns/law.pdf

3.2 More detailed guidance, for those who may require it, on specific areas is available as follows:

3.2.1 Driving at Work - www.hse.gov.uk/pubns/indg382.pdf

3.2.2 Manual Handling - www.hse.gov.uk/pubns/indg143.pdf

3.2.3 Manual Handling Assessment Charts - www.hse.gov.uk/pubns/indg383.pdf

3.3 Someone who is aware of the risks associated with the activity must undertake the assessment process using sound judgement and expert knowledge. The assessor should also be aware that, in the event of a subsequent accident or incident, their RA process might be challenged.

3.4 An integral part of RA is that the process is not a "one-shot" event but is reviewed at suitable intervals. These intervals must be stated in the Operations Manual and the whole process adequately documented. One system would be to have an annual

meeting where RA are reviewed and amended as necessary. Further RA action during the season would be required if, for example, there were significant changes to company personnel, practices or equipment. The use of significantly larger aircraft or a change from piston to turbine engines, for example, should trigger a review.

4 Safety Management Systems (SMS)

4.1 The use of SMS by a corporate helicopter operator is not mandatory but it is strongly recommended by the CAA. There is no recognised standard in aviation for defining a typical SMS but the CAA has drawn up a number of SMS Policies and Principles (P&Ps) aimed at providing a simple SMS framework supported by clear definitions.

4.2 The P&Ps define the components of an organisation's SMS. These have been derived from the lessons learned from a wide variety of disastrous accidents where management failures were cited as a significant contributory cause (factors which made the accident more likely to occur). The P&Ps could be considered as a hazard checklist for identifying the potential risks of management failures causing or contributing to an accident. The adoption of an effective formal SMS could be considered as a risk reduction exercise to minimise such failures as far as is reasonably practicable. Common-sense is required in interpreting the P&Ps for application within an organisation because every organisation is different, as are their safety cultures.

4.3 SMS Policy Statements

The Managing Director must approve and support the safety policy which is likely to contain some or all of the following statements:

4.3.1 The intent about maintaining or improving current safety performance.

4.3.2 The intent to minimise the risks of an accident occurring - probably with the 'as far as is reasonably practicable' (ALARP) caveat.

4.3.3 The intent to implement an effective formal SMS, including RA.

4.3.4 Individual and management responsibilites for safety performance.

4.3.5 The priority ascribed to flight safety relative to commercial, operational, environmental and working practice pressures.

4.3.6 Compliance with safety standards and regulatory requirements.

4.3.7 Ensuring sub-contractors meet company safety standards and requirements.

4.4 Typical Safety Management Principles

Safety management principles define the components or scope of a Safety Management System and will include, where applicable:

4.4.1 Published safety accountabilities of managers and key staff/appointments.

4.4.2 Arrangements to conduct internal safety incident investigations and implement remedial action.

4.4.3 Arrangements for recording and monitoring the overall safety standards of the organisation (usually a record of significant safety incidents).

4.4.4 Arrangements to report (internally and externally) the results of investigations, ie the lessons learned.

4.4.5 Arrangements to carry out regular safety audits, reviews or surveys within the organisation and for ensuring that agreed actions are implemented.

4.4.6 Arrangements for ensuring staff are adequately trained and competent for the job they are required to do.

4.4.7 Supervision arrangements for early detection of deviations from intended practices or procedures that degrade safety.

4.4.8 Arrangements for monitoring any deterioration in performance of safety significant equipment or systems.

4.4.9 Arrangements enabling staff to communicate significant safety concerns to the appropriate level of management for resolution.

4.4.10 Arrangements to identify and address potential risks arising from changes in operations, systems, procedures and staff associated with safety significant functions or activities.

Additional guidance is available in a short SMS guidance leaflet available at:

www.caa.co.uk/smsguidanceleaflet

A more comprehensive document CAP 712, SMS for Commercial Air Transport Operations, is available at :

www.caa.co.uk/CAP712

5 Safety Management Checklist

The idea of the checklist system is to allow operators to individually assess whether their organisation has a positive safety management culture. Affirmative answers indicate a positive situation. Negative responses always suggest that corrective action is needed. The validation questions also provide a suggested method of how the effectiveness of a Safety Management culture can be internally assessed.

(NB: Not all questions will apply to all organisations.)

General Validation Questions	Action (during audit)
Is the need for a SMS accepted as essential by all?	Ask company personnel.
Is safety accepted as the highest priority by all?	Ask company personnel.
Is there a safety policy statement, made by an accountable manager, in operating manuals?	See statement.
Are safety responsibilities detailed?	See responsibility breakdown.
Are all personnel aware of their responsibilities?	Ask company personnel.
Are safety procedures documented?	See records.
Is it clearly stated that safety issues must be resolved immediately in priority order?	See statement.
Is there a procedure for resolving safety issues?	Procedure demonstrated.
Is SMS regularly internally audited/checked?	Procedure demonstrated and records checked.
Is there a robust, mandatory, internal occurrence reporting system? (In addition to MOR System.)	Procedure demonstrated and records checked.
Are personnel encouraged to contribute safety ideas?	See evidence.
Is safety literature widely available to all?	See evidence.
Is there a safety training programme for new personnel?	Records checked.
Are training responsibilities clear?	Checked.
Are staff safety training needs regularly reviewed?	Records checked.

Safety Standards Questions	Action (during audit)
Are safety standards clearly defined?	Read definitions.
Are safety standards reflected in operating procedures?	Check examples.
Is there a procedure for amending operating procedures to reflect changing safety procedures?	Procedure demonstrated and records checked.
Is there a procedure for ensuring amendments are incorporated?	Procedure demonstrated and records checked.
Is there a procedure for ensuring amendments are read by personnel?	Check by asking company personnel.
Are operations and procedures regularly reviewed in relation to risk/hazard?	See review.
Is the introduction of change accepted as a risk/hazard?	Check by asking company personnel.
Are risk/hazards considered before changes are implemented?	Check by asking company personnel.
Is there a process for reviewing the impact of environmental/work-place change on safety?	Procedure demonstrated and records checked.
Is risk/hazard management understood?	Check by asking company personnel.
Is there a procedure for managing risks/ hazards?	Procedure demonstrated and records checked.
Are the limits for safe operation defined?	Check.
Are the limits for safe operation accepted by all?	Check by asking company personnel.
Are the limits for safe operation adhered to by all?	Check by asking company personnel.
Is the safety reporting system used?	Check records
Are safety reports recorded?	Check records
Is there a procedure to ensure action is taken as a result of safety reports?	Procedure demonstrated and records checked.
Is the competence and performance of personnel responsible for implementing safety measures checked?	Procedure demonstrated and records checked.

5.1 SMS Risk Assessment Matrix

a) This simple procedure should suit the needs of most corporate helicopter operators. If you require advice on risk assessment please contact Flight Operations Inspectorate (General Aviation), Safety Regulation Group, CAA on 01293 573528.

b) The assessment process must be undertaken by someone who is aware of the risks associated with the activity being assessed and who will use sound judgement in the preparation of the assessment. The assessor should also be aware that, in the event of a subsequent accident or incident, their risk assessment process may be challenged.

Risk = The Severity of the Hazard x The Likelihood of Occurrence

5.2 Types of Hazard

The following list provides examples of corporate helicopter operator hazards. It is not exhaustive but merely an example of the types of hazard that should be considered:

Wire Strike; Unexpected/Forecast Change in Weather; Fire in the Air; Hard Landing;

Landing Resulting in Third Party Casualties or Damage; Landing in Unsuitable Terrain;

Pilot Incapacitation in the Air; Fuel Exhaustion; Water Landing; Lightning Strike; Structural Failure; Control Failure; Fire on the Ground; Contaminated Fuel; Loose Articles in Aircraft;

5.3 Assessment

Assessment of the likelihood and severity of a hazard is subjective and is based on personalexperience of the activity under assessment or statistical evidence when available.

5.4 Severity of Hazard

The severity of a hazard should be assessed under the following headings, depending on the possible outcome should the hazard become a reality, and allocated a score:

Injury	Trivial	Minor Injury	Serious Injury	Single Fatality	Multiple Fatality
Score	1	2	3	4	5

5.5 Likelihood of Occurrence

The likelihood of the hazard occurring should be assessed against the following headings and again allocated a score:

Probability	Highly Unlikely	Possible	Quite Possible	Likely	Highly Likely
Score	1	2	3	4	5

5.6 Matrix Production

Once Severity and Likelihood levels have been decided they should be entered in the matrix.

Hazard	Severity	Likelihood	Rating	Mitigation	Mitigation Factor	Final Rating
Controlled Flight Into Terrain	5	3	15	Recce, map study,weather limits, local area knowledge, TAWS	- 2	5
Refuelling Fire	4	3	12	Bonding, no smoking, fire extinguishers, training, no passengers on board during refueling.	- 2	4

The content of the above table is for example only and does not imply or infer a risk level.

5.7 **Risk Rating**

The Risk Rating is the figure obtained when the severity assessment is multiplied by the likelihood assessment.

A resultant figure of less than 6 indicates a low risk; a figure between 6 and 15 a medium risk; and a figure greater than 15 a high risk.

High risk ratings should generally be deemed unacceptable and mitigation sought to reduce the rating to an acceptable level – medium or lower.

5.8 **Mitigation**

Mitigation action should be taken whenever possible to reduce risk ratings even when the risk is low.

5.9 **RA Audit Trail**

Organisations should record and retain the details of their RA process.

6 Summary

6.1 RA are mandatory and if the operation has 5 employees or more they must be written down. Best practice is to write down RA even if this is not a legal requirement.

6.2 RA should be reviewed regularly as required.

6.3 A suitable qualified and experienced person should carry out RA.

6.4 The use of SMS is not yet mandatory for corporate helicopter operators but is strongly recommended as part of a process of mitigating both personal and business risk.

6.5 The process of RA and SMS should be fully documented.

6.6 An employee is anyone who assists in carrying out the business of the company, whether paid or unpaid.

Part E Training

This Part is to contain instructions and information relating to training.

Page No.

SECTION 1 TRAINING SYLLABI AND CHECKING PROGRAMMES – GENERAL

SECTION 2 TRAINING SYLLABI AND CHECKING

2.1 Flight crew E–2–1

SECTION 3 PROCEDURES

3.1 Procedures for training and checking E–3–1

3.2 Procedures to be applied in the event that personnel do not achieve or maintain required standards E–3–1

3.3 Procedures to ensure that abnormal or emergency situations are not simulated during normal passenger flights E–3–1

SECTION 4 DOCUMENTATION AND STORAGE

Appendices

A Operator Proficiency Check

B Emergency and Safety Equipment Check

C Line Check

D Pilots Personal Record

E Summary of Ground and Flying Training

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Section 1 Training Syllabi and Checking Programmes

1 General

This part of the Manual is intended primarily for the use and guidance of the Company's appointed training staff. Each member of the training staff shall be issued with a personal copy of this Part of the Manual.

2 Amendment

Amendments may be made as recommended by members of the training staff or as required by the Authority. In all cases, the amendments will be issued by, or on behalf of the chief pilot, whose authorisation will be required for each issue. Revisions will be issued in the form of complete pages, each containing the issue number and date, and with vertical marginal lines, as illustrated, to indicate those portions of the text which have been amended. Copy holders will be responsible for keeping their manuals up-to-date.

3 Distribution

Copies of Part E – Training, will be distributed as follows:

Copy No	Name	Appointment/Employer*
1 Master copy		Chief Pilot
2		
3		

*For non-company personnel

4 Responsibilities

Training staff are responsible to the chief pilot for ensuring that all the conversion training and testing requirements specified below are invariably met as appropriate to the experience level of the pilot being trained or tested. The aim should be to encourage the development of high standards of professional knowledge, aeroplane handling and operating skills. Emphasis should be placed on the use of standard drills and procedures and on the need to adhere closely to the recommended operating techniques.

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Section 2 Training Syllabi and Checking

1 Flight Crew

1.1 Conversion Training

1.1.1 A flight crew member should complete a conversion course before commencing unsupervised line flying:

a) when changing to a helicopter for which a new type rating is required;

b) when changing operator.

NOTE: 'Operator' is defined in article 155 of the ANO 2005 as "the person who at the relevant time has the management of that aircraft".

1.1.2 The object of conversion training is to give the new pilot a full working knowledge of the helicopter type and its systems, and to enable him to fly it to a satisfactory standard. He will then be required to pass the Authoritys type rating test with an Authorised Examiner (TRE). When all parts of the test, both air and ground, have been completed satisfactorily,the pilots licence and application forms should be submitted to the Flight Crew Licensing (FCL) branch of the Authority for the type to be endorsed in Part 1 of this licence.

1.1.3 The conversion course should contain:

a) ground training and checking including aircraft systems, normal, abnormal and emergency procedures;

b) emergency and safety equipment training and checking which must be completed before aircraft training commences;

c) Crew Resource Management training;

d) helicopter training and checking; and

e) line flying, under supervision, and line check.

1.1.4 The conversion course should be conducted in the order set out in paragraph 1.1.3 above.

1.1.5 The ground and air syllabus mentioned in paragraph 1.1.3 a) and d) above should be as for a Type rating test as contained in Sections 5 and 8 of Form CA1179, and copied at Appendix A to this Part. Each of the manoeuvres noted in Section 5 is to be repeated until a satisfactory standard of performance has been reached. Pilots should be provided with the necessary company and manufacturers publications (Owners Manuals, Pilots Operating Handbooks, Flight Manuals etc.) and given the opportunity for guided study until they have achieved the necessary standard of technical knowledge to pass the formal oral tests in the subjects covered by Section 8 of Form CA 1179.

1.1.6 When a flight crew member has not previously completed an operators conversion course, he should in addition to paragraph 1.1.3 above undergo general first aid training and, if applicable, ditching procedures training using the equipment in the water.

1.2 Differences Training and Familiarisation Training

1.2.1 Differences Training

A flight crew member should complete differences training when:

a) operating another variant of a helicopter of the same type; or

b) a change of equipment and/or procedures on types or variants currently operated, requires the acquisition of additional knowledge.

1.2.2 **Familiarisation Training**

A flight crew member should complete familiarisation training when:

a) operating another helicopter of the same type or variant; or

b) a change of equipment and/or procedures on the type or variant currently operated;

requires the acquisition of additional knowledge.

1.2.3 This paragraph should contain a clear statement as to when such differences training or familiarisation training is required.

1.3 **Recurrent Training and Checking**

1.3.1 **Recurrent Training**

Recurrent training should comprise:

a) ground and refresher training;

b) helicopter training;

c) emergency and safety equipment training; and

d) Crew Resource Management training.

1.3.1.1 **Ground and Refresher Training**

The ground and refresher training should include;

a) helicopter systems;

b) operational procedures and requirements; and

c) accident/incident and occurrence review.

1.3.1.2 **Helicopter Training**

Helicopter training should ensure that:

a) all major failures of helicopter systems and associated procedures should have been covered in the preceding 3 year period;

b) when engine-out manoeuvres are carried out, the engine failure is simulated; and

c) helicopter training may be combined with the operator proficiency check.

1.3.1.3 **Emergency and Safety Equipment Training**

The emergency and safety equipment training programme:

a) may be combined with emergency and safety equipment checking and should be conducted in an aeroplane or a suitable alternative training device;

b) should include every year the following:

i) actual donning of a life jacket, where supplied;

ii) actual handling of fire extinguishers;

iii) instruction on the location and use of all emergency and safety equipment carried on board;

iv) instruction on the location and use of all types of exits; and

v) security procedures.

c) should include every three years;

i) actual operation of all types of exits;

ii) actual fire fighting using equipment representative of that carried in the aeroplane on an actual or simulated fire except,that with Halon extinguishers,an alternative method acceptable to the Authority may be used;

iii) the effects of smoke in an enclosed area and actual use of all relevant equipment in a simulated smoke filled environment;

iv) actual handling of pyrotechnics, real or simulated, where fitted; and

v) demonstration in the use of life rafts, where fitted.

1.3.1.4 **Crew Resource Management Training**

CRM training should be designed to reflect the nature of company operations, and non-assessable elements of recurrent training are to be provided annually for all crew members, so as to cover the major elements of the full initial course over a four year cycle. An appropriate plan of the arrangements for this is to be included in the Training Manual.

Company base and line checks are to include comment on CRM skills. Records should be maintained of all pilots initial and recurrent training.

1.3.2 **Recurrent Checking**

Recurrent checking should comprise:

a) operator proficiency checks;

b) emergency and safety equipment checks; and

c) line checks.

1.3.2.1 **Operator Proficiency Check**

Where applicable, operator proficiency checks should include the manoeuvres detailed in Appendix B.

1.3.2.2 **Emergency and Safety Equipment Check**

The emergency and safety equipment check should include the items detailed in Appendix C.

1.3.2.3 **Line Check**

Line checks should establish the ability to perform satisfactorily a complete line operation including pre-flight and post-flight procedures and use of the equipment provided. A check proforma is at Appendix D.

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Section 3 Procedures

1 Procedures for Training and Checking

1.1 When a pilot is selected for company duties, the Chief Pilot should ensure that a training folder is opened for him. It will contain a personal record sheet giving details of his licence, qualifications and previous experience, together with all the training and test forms that are relevant to his training requirements. A specimen personal record sheet is at Appendix E.

1.2 Whenever any training is to be carried out, the training captain should be given a folder as a guide to the pilots requirements, and should complete the relevant form(s) at the end of every detail. In addition to the training and check forms already discussed, this should include a summary of ground and flying training and test record which will readily indicate the pilots progress if there has been a break in training or a change in training captain.

1.3 When the final line check has been satisfactorily carried out, and Appendix F has been completed, the Chief Pilot should confirm that all the requisite training and testing has been completed, and that the pilot is considered by the company to be competent to carry out the duties for which he has been selected.

2 Procedures to be Applied in the Event that Personnel do not Achieve or Maintain the Required Standards

2.1 If at any stage of training, or as a result of a test, it is evident that the pilot has not reached the necessary standards, the training captain should refer the case to the Chief Pilot for a decision on whether further training should be given, or whether it should be discontinued until the pilot has accumulated more flying experience.

3 Abnormal or Emergency Situations

3.1 Procedures to ensure that abnormal or emergency situations requiring the application of part or all of abnormal or emergency procedures and simulation of IMC by artificial means, are not simulated during normal passenger flights

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Section 4 Documentation

1 The following information/documentation should be stored in an acceptable form, for the periods shown in the following table:

Flight crew records	
Conversion training and checking	3 years
Recurrent training and checking	3 years
Recent experience	15 months

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Part E, Appendix A Operator Proficiency Check

1 The following is a proposed schedule for items that should be included in an Operators Proficiency Check.

Schedule

Section A – Emergency Procedures

1 Engine fire
2 Fuselage fire
3 Emergency operation of undercarriage
4 Fuel dumping
5 Engine failure and relight (see Note 1)
6 Hydraulic failure
7 Electrical failure
8 Engine failure during take-off before decision point]
9 Engine failure during take-off after decision point (see Note 1)] covering all profiles
10 Engine failure during landing before decision point (see Note 1)]
11 Engine failure during landing after decision point]
12 Flight and engine control system malfunctions (see Note 1)
13 Recovery from unusual attitudes
14 Landing with one or more engines inoperative
15 IMC auto-rotation techniques
16 Auto-rotation to a designated area
17 Pilot incapacitation; and
18 Directional control failures and malfunctions

For pilots required to engage in IFR operations the operator proficiency check should include the following additional abnormal/emergency procedures:

1 Precision instrument approach to minima with, in the case of multi-engine helicopters, one engine inoperative
2 Go-around on instruments from minima with, in the case of multi-engine helicopters, a simulated failure of one engine (see Note 1)
3 Non-precision approach to minima
4 Landing with a simulated failure of one or more engines (see Note 1); and
5 Where appropriate to the helicopter type, approach with flight control system/flight director system malfunctions, flight instrument and navigation equipment failures

Section B – Oral

1 Operations Manual amendments and Crew Notices
2 Technical discussion
3 Winter operations
4 Use of anti-icing equipment
5 Emergency radio procedures
6 CRM

The above items are subjects on which the pilots knowledge of current practice should be examined by discussion.

Section C – General Procedures

1 Pre-flight checks
2 Knowledge and use of normal checklist
3 Crew co-ordination and briefing
4 Starting and taxying including checks
5 Knowledge and use of radio equipment

The assessment of flight crew performance in this section should be based upon the general conduct of the flight and in particular adherence to Standard Operating Procedures and Flight Deck management.

Section D – Instrument Flight

1 Instrument climb out
2 Height and speed control
3 Tracking
4 Altimeter settings
5 Use of radio aids
6 Conforming to ATC clearance
7 Liaison with ATC
8 Intermediate approach
9 Flight Director malfunctions
10 Non-precision approach to minima

This section of the Operator Proficiency Check which demands an element of Instrument Flying will be judged by Instrument Rating Renewal standards.

Section E – Emergency Manoeuvres

1 Engine failure before and after decision point
2 Single engine precision approach to minima
3 Single engine missed approach on instruments from minima
4 Landing with one engine inoperative (For single engine helicopters an autorotative landing is required)
5 Flying control malfunction

NOTES:

1 When engine-out manoeuvres are carried out in a helicopter, the engine failure must be simulated.

2 The requirements of FCL must be completed every 12 months and may be combined with the operator proficiency check.

3 For a pilot operating VFR only, the checks prescribed in Section D, paragraph 10 and Section E, paragraphs 2 and 3 above may be omitted except for an approach and go-around in a multi-engine helicopter with one engine inoperative.

4 Operator proficiency checks must be conducted by a TRE.

5 Because of the unacceptable risk when simulating emergencies such as rotor failure, icing problems, certain types of engine failure (e.g. during continued take-off or go-around), total hydraulic failure etc, or because of environmental considerations associated with some emergencies (e.g. fuel dumping) these emergencies should preferably be covered in an approved flight simulator. If no approved flight simulator is available these 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.

Part E, Appendix B Emergency and Safety Equipment Check

Name ..... **Licence No** .....

Aircraft Type .....

Part 1 Initial Test Only, if applicable (see Part E, Section 2, paragraph 1.3.2.2)			
Item		**Completion Date**	**Examiner's Signature**
(a)	Wet lifejacket drill.		

Part 2 Initial Test and Every 3 Years			
Item		**Date**	**Examiner's Signature**
(a) (b)	Actual removal of emergency exits if applicable to type. Actual use of fire extinguisher on a fire.		
Part 3 Initial and Recurrent			
Item		**Date**	**Examiner's Signature**
(a) (b) (c) (d) (e)	Operation of normal and Emergency exits. Emergency escape procedures. Location, contents and use of first aid kit and knowledge of handbook. Type(s), operation and serviceability checks of fire extinguishers. Location, donning, inflation and use of lifejackets, where fitted.		

Part 4

I certify that the above-named pilot has satisfactorily completed all the appropriate Parts as indicated, and is competent in the use of the emergency and life-saving equipment carried, and in the completion of his duties in an emergency.

Signed ..... Date.....
Chief Pilot

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Part E, Appendix C Line Check

Name ..... **Licence No.** .....

Aircraft Type ..... **Date of Test** .....

Check Captain ..... **Flight Duration** .....

Part 1 Pre-Flight	**Pass/Fail**	**Remarks**
(a) Weather, flight planning, use of AIS (b) Fuel planning (c) Loading, C of G, load sheet as required (d) Tech. log and CMR (e) Passenger briefing		
Part 2 Departure (a) External and Internal Checks (b) Starting (c) Use of Check Lists (d) R/T procedure and liaison with ATC (e) After start checks and taxying (f) Power and pre-take-off checks (g) Take-off and climb		
Part 3 Cruise (a) Normal cruise, power settings, general handling for pleasure flights and standard route(s) if used. (b) Slow-speed flight, use of flap, handling and positioning for photography (c) R/T procedure and use of nav aids (d) Pilot navigation (e) Fuel checks (f) Awareness of minimum altitude requirements (g) Practice diversion (selection of alternate, and initiation only)		

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Part E, Appendix D Pilot's Personal Record

Name (in full) ..... Date of Birth .....

Address .....

.....

.....

Telephone Number .....

Next of Kin ..... Relationship .....

Address .....

.....

.....

Telephone Number .....

Date Joined Company .....

Licence Type ..... No ..... Expiry Date .....

Medical Expiry Date .....

Aircraft Types in Part 1 .....

Total Hours Flown ..... Total Hours P.1 .....

OtherQualifications .....

Previous flying experience and appointments.....

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Part E, Appendix E Summary of Ground and Flying Training

Name ..... **Aircraft Type**.....

Items	Flying Hours	Date Completed	Training Captains Signature
1 Emergency/Survival Training and Test 2 'Wet' drill, if applicable 3 Helicopter Type ground Training and Test			
4 Conversion Flying on Type 5 Type Rating Test 6 Base Training 7 Operator Proficiency Check 8 Line Training 9 Line Check and Area Clearance			
10 Mandatory Landings (3 in last 3 months, 1 in last 28 days, on type).			
Total Hours			

Training Captain's Certificate: I certify that the above named pilot has completed all the appropriate training and tests as indicated above, and is recommended for unsupervised flying duties as commander on ..... type aircraft.

Chief Pilot's Certificate: Having examined the above report, and checked the pilots licence and medical validity dates, I certify that the above-named pilot is cleared for unsupervised flying duties as commander on ..... type aircraft.

Signed .....Date .....
Chief Pilot

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