INSTALLED EQUIPMENT

GENERAL

|  |  |
| --- | --- |
| Company name: |  |
| Physical address: |  |
| Telephone: |  |
| Facsimile: |  |
| AOC #: |  |
| Airport: |  |
| Aircraft Registration: |  |
| Aircraft Serial Number: |  |
| Aircraft Type: |  |
| CAR OPS-3 Subpart K & L issue date : |  |

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| --- |
| **THIS COMPLETE AIRCRAFT LIST IS AUTHORISED BY** |
| **Name:****Title:** | **Signature:** | **Date:** |
| This UAE CAR’s subpart K & L compliance list has been analysed and found to fulfil the CAR OPS 3.630 thru CAR OPS 3.865 requirements.  |
| **NO REVISION MAY BE INSERTED INTO THIS K & L LIST UNLESS APPROVAL IS GRANTED BY THE GCAA** |

OPERATOR CERTIFICATION STATEMENT

This list to meet the requirements of CAR-OPS Sub Part K & L, the recommendations of the airframe, engine and equipment manufacturers have been evaluated and have been fully incorporated.

This list, lists the Instruments, Equipment, Communication and Navigation equipment, which form the basis for the aircraft to be approved to fly under CAR OPS-3.

The data contained in this program will be reviewed for continued validity at least annually in the light of operating experience.

It is accepted that the Subpart K & L list does not prevent the necessity for complying with any new or amended regulation published by GCAA from time to time where these new or amended regulations may override elements of this program.

It is understood that compliance with the Subpart K & L list does not release the applicant from the need to ensure that the Subpart K & L list reflects the actual Status of the aircraft, such that continued safe operation can be assured. It is further understood that the GCAA reserves the right to suspend, vary or cancel approval of the Subpart K & L list if the GCAA has evidence that requirements of the Subpart K & L list are not followed or standards not upheld.

|  |  |
| --- | --- |
| Owner/Accountable Manager’s Name: |  |
| Signature: |  |
| Date: |  |

LIST OF EFFECTIVE PAGES

The list below identifies the Subpart K & L list and shows the number of pages as well as the date and issue status of each Page.

Revisions carried out on any page/s will result in the complete Subpart K & L list being raised to the next Issue Number. A vertical line that appears in the right hand column of the page will indicate the changes that have occurred and any text changes will appear in *italicised text* with a revision bar in the RH column.

A new list of effective pages will be issued with each revision in order to provide a means for the manual holder to check that their manual is at the correct issue status.

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LIST OF EFFECTIVE PAGES (RESERVED)

RECORD OF REVISIONS

The list below indicates the issue number of the Aircraft Maintenance program and shows the date and briefly describes the amendment carried out.

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| **Issue No.** | Issue Date | **Amendment** |
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LIST OF ABBREVIATIONS TERMS AND DEFINITIONS

All significant terms and abbreviations used within this program are defined in accordance with the Type Certificate holder’s definitions, current CAR and GCAA definitions

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| **Requirement** | **Compliance** | **Means of Compliance** |
| CAR-OPS 3.630 - General Introduction |
| 1. An operator shall ensure that a flight does not commence unless the instruments and equipment required under this Subpart are
	1. Approved, except as specified in sub-paragraph (c), and installed in accordance with the requirements applicable to them, including the minimum performance standard and the operational and airworthiness requirements; and
 |  |  |
| * 1. In operable condition for the kind of operation being conducted except as provided in the MEL (CAR-OPS 3.030 refers).
 |  |  |
| * + 1. Instruments and equipment minimum performance standards are those prescribed in the applicable Technical Standard Orders unless different performance standards are prescribed in the operational or airworthiness codes. Instruments and equipment complying with design and performance specifications on the date of CAR-OPS implementation may remain in service, or be installed, unless additional requirements are prescribed in this Subpart. Instruments and equipment that have already been approved do not need to comply with a revised TSO or a revised specification, unless a retroactive requirement is prescribed.
 |  |  |
| * + 1. The following items shall not be required to have an equipment approval:
1. Electric torches referred to in CAR-OPS 3.640 (a)(4);
 |  |  |
| 1. An accurate time piece referred to in CAR-OPS 3.650(b) & 3.652(b);
 |  |  |
| 1. Chart holder referred to in CAR-OPS 3.652(n).
 |  |  |
| 1. First-aid kits referred to in CAR-OPS 3.745;
 |  |  |
| 1. Megaphones referred to in CAR-OPS 3.810;
 |  |  |
| 1. Survival and pyrotechnic signalling equipment referred to in CAR-OPS 3.835(a) and (c); and
 |  |  |
| 1. Sea anchors and equipment for mooring, anchoring or manoeuvring amphibians on water referred to in CAR-OPS 3.840.
 |  |  |
| * 1. If equipment is to be used by one flight crew member at his station during flight It must be readily operable from his station. When a single item of equipment is required to be operated by more than one flight crewmember it must be installed so that the equipment is readily operable from any station at which the equipment is required to be operated
 |  |  |

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| * 1. Those instruments that are used by any one flight crew member shall be so arranged as to permit the flight crew member to see the indications readily from his station, with the minimum practicable deviation from the position and line of vision, which he normally assumes when looking forward along the flight path. Whenever a single instrument is required in a helicopter operated by more than 1 flight crew member it must be installed so that the instrument is visible from each applicable flight crew station
 |  |  |
| CAR-OPS 3.640 – Helicopter Operating Lights |
| An operator shall not operate a helicopter unless it is equipped with:1. For flight by day under VFR:
	1. Anti-collision light system;
 |  |  |
| * + 1. For flight under IFR or by night, in addition to equipment specified in paragraph (a) above:
			1. Lighting supplied from the helicopter’s electrical system to provide adequate illumination for all instruments and equipment essential to the safe operation of the helicopter; and
 |  |  |
| * 1. Lighting supplied from the helicopter's electrical system to provide illumination in all passenger compartments; and
 |  |  |
| * 1. An electric torch for each required crew member readily accessible to crew members when seated at their designated station; and
 |  |  |
| * 1. Navigation/position lights; and
 |  |  |
| 1. Two landing lights of which at least one is adjustable in flight so as to illuminate the ground in front of and below the helicopter and the ground on either side of the helicopter; and
 |  |  |
| 1. Lights to conform with the International regulations for preventing collisions at sea if the helicopter is Amphibious.
 |  |  |
| CAR-OPS 3.647 – Equipment for operations requiring a radio communication and/or radio navigation system |
| Whenever a radio communication and/or radio navigation system is required, an operator shall not conduct operations unless the helicopter is equipped with a headset with boom microphone orequivalent and a transmit button on the flight controls for each required pilot and/or crew member at his working station. |  |  |
| CAR-OPS 3.650 - Day VFR Operations - Flight and Navigational Instruments and Associated Equipment |
| An operator shall not operate an helicopter by day in accordance with Visual Flight Rules (VFR) Unless it is equipped with the flight and navigational instruments and associated equipment and, where applicable, under the conditions stated in the following sub-paragraphs1. A magnetic compass;
 |  |  |
| 1. An accurate timepiece showing the time in hours, minutes, and seconds;
 |  |  |
| 1. A sensitive pressure altimeter calibrated in feet with a sub-scale setting, calibrated in hectopascals/millibars, adjustable for any barometric pressure likely to be set during flight;
 |  |  |
| 1. An airspeed indicator calibrated in knots;
 |  |  |
| 1. A vertical speed indicator;
 |  |  |
| 1. A slip indicator;
 |  |  |
| 1. A means of indicating in the flight crew compartment the outside air temperature calibrated in degrees Celsius (See AMC OPS 3.650(g) and 3.652(k)).
 |  |  |
| 1. Whenever two pilots are required the second pilot's station shall have separate instruments as follows:
2. A sensitive pressure altimeter calibrated in feet with a sub-scale setting calibrated in hectopascals/millibars, adjustable for any barometric pressure likely to be set during flight;
 |  |  |
| 1. An airspeed indicator calibrated in knots;
 |  |  |
| 1. A vertical speed indicator;
 |  |  |
| 1. A slip indicator;
 |  |  |
| * 1. In addition to the flight and navigational equipment required by sub-paragraphs (a) to (h) above, helicopters with a maximum certificated take-off mass (MCTOM) over 3,175 Kg or any helicopter when operating over water, out of sight of land or when the visibility is less than 1,500m, must be equipped with the following flight instruments:
1. An attitude indicator; and
 |  |  |
| 1. A stabilised direction indicator.
 |  |  |
| 1. Whenever duplicate instruments are required, the requirement embraces separate displays for each pilot and separate selectors or other associated equipment where appropriate.
 |  |  |
| 1. All helicopters must be equipped with means for indicating when power is not adequately supplied to the required flight instruments; and
 |  |  |
| 1. Each airspeed indicating system must be equipped with a heated pitot tube or equivalent means for preventing malfunction due to either condensation or icing for helicopters with a maximum certificated take off mass (MCTOM) over 3,175 Kg or having a maximum approved passenger seating configuration (MAPSC) of more than 9.
 |  |  |

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| CAR-OPS 3.652 - IFR or Night Operations - Flight and Navigational Instruments and Associated Equipment |
| An operator shall not operate an helicopter in accordance with Instrument Flight Rules (IFR) or by night in accordance with Visual Flight Rules (VFR) unless it is equipped with the flight and navigational instruments and associated equipment and, where applicable, under the conditions stated in the following sub-paragraphs:1. A magnetic compass;
 |  |  |
| 1. An accurate time-piece showing the time in hours, minutes and seconds;
 |  |  |
| 1. Two sensitive pressure altimeters calibrated in feet with sub-scale settings, calibrated in hectopascals / millibars, adjustable for any barometric pressure likely to be set during flight. For single pilot night VFR operations one pressure altimeter may be substituted by a radio altimeter.
 |  |  |
| 1. An airspeed indicating system with heated pitot tube or equivalent means for preventing malfunctioning due to either condensation or icing including a warning indication of pitot heater failure. The pitot heater failure warning indication requirement does not apply to those helicopters with a maximum approved passenger seating configuration (MAPSC) of 9 or less or a maximum certificated take-off mass (MCTOM) of 3,175 kg or less and issued with an individual Certificate of Airworthiness prior to 1 August 1999 (See AMC OPS 3.652(d) and (m)(2));
 |  |  |
| 1. A vertical speed indicator;
 |  |  |
| 1. A slip indicator;
 |  |  |
| 1. An attitude indicator;
 |  |  |
| 1. A single standby attitude indicator (artificial horizon) capable of being used from either pilot’s station that:
	1. Provides reliable operation for a minimum of 30 minutes or the time required to fly to a suitable alternate landing site when operating over hostile terrain or offshore, whichever is the greater, after total failure of the normal electrical generating system, taking into account other loads on the emergency power supply and operational procedures;
 |  |  |
| 1. Operates independently of any other attitude indicating system;
 |  |  |
| 1. Is operative automatically after total failure of the normal electrical generating system; and
 |  |  |
| 1. Is appropriately illuminated during all phases of operation;
 |  |  |
| * 1. In complying with sub-paragraph (h) above, it must be clearly evident to the flight crew when the standby attitude indicator, required by that paragraph, is being operated by emergency power. Where the standby attitude indicator has its own dedicated power supply there shall be an associated indication clearly visible when this supply is in use.
 |  |  |
| * 1. A stabilised direction indicator.
 |  |  |
| * + 1. A means of indicating in the flight crew compartment the outside air temperature (see AMC OPS 3.650(g) and 3.652(k)); and
 |  |  |
| * + 1. An alternate source of static pressure for the altimeter and the airspeed and vertical speed indicators; and
 |  |  |
| * + 1. Whenever two pilots are required the second pilot's station shall have separate instruments as follows:
1. A sensitive pressure altimeter calibrated in feet with a sub-scale setting, calibrated in hectopascals/millibars, adjustable for any barometric pressure setting likely to be encountered during flight which may be one of the two altimeters required by sub-paragraph (c) above;
 |  |  |
| 1. An airspeed indicating system with heated pitot tube or equivalent means for preventing malfunctioning due to either condensation or icing including a warning indication of pitot heater failure. The pitot heater failure warning indication requirement does not apply to those helicopters with a maximum approved passenger seating configuration (MAPSC) of 9 or less or a maximum certificated take-off mass (MCTOM) of 3,175 kg or less and issued with an individual Certificate of Airworthiness prior to 1 August 1999 (See AMC OPS 3.652(d) and (m)(2));
 |  |  |
| 1. A vertical speed indicator;
 |  |  |
| 1. A slip indicator;
 |  |  |
| 1. An attitude indicator; and
 |  |  |
| 1. A stabilised direction indicator.
 |  |  |
| * 1. For IFR operations, a chart holder in an easily readable position which can be illuminated for night operations.
 |  |  |
| * 1. Whenever duplicate instruments are required, the requirement embraces separate displays for each pilot and separate selectors or other associated equipment where appropriate;
 |  |  |
| * 1. All helicopters must be equipped with means for indicating when power is not adequately supplied to the required flight instruments; and
 |  |  |
| CAR-OPS 3.655 - Additional Equipment for Single Pilot Operation Under IFR |
| An operator shall not conduct single pilot IFR operations unless the helicopter is equipped with an autopilot with, at least, altitude hold and heading mode, except for helicopters with a maximum approved passenger seating configuration (MAPSC) of 6 or less first certificated for single pilot IMC operations on or before 1 January 1979. |  |  |

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| CAR-OPS 3.660 – Radio Altimeters |
| 1. An operator shall not operate a helicopter on a flight over water;
	1. When operating out of sight of land; or
	2. When the visibility is less than 1,500 m; or
	3. At night; or
	4. At a distance from land corresponding to more than 3 minutes at normal cruising speed,

unless that helicopter is equipped with a radio altimeter with an audio voice warning, or other means acceptable to the Authority, operating below a preset height and a visualwarning capable of operating at a height selectable by the pilot. |  |  |
| CAR-OPS 3.670 - Airborne Weather Radar Equipment |
| An operator shall not operate a helicopter with a maximum approved passenger seating configuration (MAPSC) of more than 9 under IFR or at night when current weather reports indicate that thunderstorms or other potentially hazardous weather conditions, regarded as detectable with airborneWeather radar, may reasonably be expected along the route to be flown unless it is equipped with airborne weather radar equipment. |  |  |
| CAR-OPS 3.675 - Equipment for Operations in Icing Conditions |
| 1. An operator shall not operate a helicopter in expected or actual icing conditions unless it is certificated and equipped to operate in icing conditions.
 |  |  |
| 1. An operator shall not operate a helicopter in expected or actual icing conditions at night unless it is equipped with a means to illuminate or detect the formation of ice. Any illumination that is used must be of a type that will not cause glare or reflection that would handicap crewmembers in the performance of their duties.
 |  |  |
| CAR-OPS 3.685 - Flight Crew Interphone System |
| An operator shall not operate a helicopter on which a flight crew of more than one is required unless it is equipped with a flight crew interphone system, including headsets and microphones, not of a handheld type, for use by all members of the flight crew.  |  |  |
| CAR-OPS 3.690 - Crew Member Interphone System |
| 1. An operator shall not operate a helicopter carrying a crew member other than a flight crew member unless it is equipped with a crew member interphone system.
 |  |  |
| 1. The crew member interphone system required by this paragraph must:
	1. Operate independently of the public address system except for handsets, headsets, microphones, selector switches and signaling devices;
 |  |  |
| * 1. Provide a means of two-way communication between the flight crew compartment and each crew member station;:
 |  |  |
| * 1. Be readily accessible for use from each of the required flight crew stations in the flight crew compartment;
 |  |  |
| And in addition for cabin crew members:* 1. Be readily accessible for use at required cabin crew member stations close to each separate or pair of floor level emergency exits;
 |  |  |
| * 1. Have an alerting system incorporating aural or visual signals for use by flight crew members to alert the cabin crew and for use by cabin crew members to alert the flight crew; and
 |  |  |
| * 1. Have a means for the recipient of a call to determine whether it is a normal call or an emergency call (See AMC OPS 3.690(b)(6)).
 |  |  |

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| CAR-OPS 3.695 - Public Address System |
| 1. Except as in (c) below, an operator shall not operate a helicopter with a maximum approved passenger-seating configuration (MAPSC) of more than 9 unless a public address system is installed.
 |  |  |
| 1. The public address system required by this paragraph must:
2. Operate independently of the interphone systems except for handsets, headsets, microphones, selector switches and signalling devices;
 |  |  |
| 1. Be readily accessible for immediate use from each required flight crew member station;
 |  |  |
| * 1. Be readily accessible for use from at least one cabin crew member station in the cabin, and each public address system microphone intended for cabin crew use must be positioned adjacent to a cabin crew member seat that is located near each required floor level emergency exit in the passenger compartment;
 |  |  |
| 1. Be capable of operation within 10 seconds by a cabin crew member at each of those stations in the compartment from which its use is accessible;
 |  |  |
| 1. Be audible and intelligible at all passenger seats, toilets and cabin crew seats and workstations; and
 |  |  |
| 1. Following a total failure of the normal electrical generating system, provide reliable operation for a minimum of 10 minutes.
 |  |  |
| 1. For helicopters with a maximum approved seating configuration (MAPSC) of more than 9 but less than 19, the public address system is not required if:
	1. The helicopter is designed without a bulkhead between the pilot and passengers; and
	2. The operator is able to demonstrate that when in flight, the pilot’s voice is audible and intelligible at all passenger seats.
 |  |  |
| CAR-OPS 3.700 - Cockpit Voice Recorders-1 |
| 1. An operator shall not operate a helicopter first issued with an individual Certificate of airworthiness, on or after 1 August 1999, which has a maximum certificated take-off mass (MCTOM) over 3,175 Kg unless it is equipped with a cockpit voice recorder which, with reference to a time scale, records:
2. Voice communications transmitted from or received by the crew by radio;
 |  |  |
| * 1. The aural environment of the flight deck, including without interruption, the audio signals received from each crew microphone in use;
 |  |  |
| * 1. Voice communications of crew members using the crew members interphone system;
 |  |  |
| * 1. Voice or audio signals identifying navigation or approach aids introduced into a headset or speaker; and
 |  |  |
| * 1. Voice communications of crew members using the public address system, where practicable.
 |  |  |
| 1. The cockpit voice recorder shall be capable of retaining information recorded during at least the last hour of its operation except that, for those helicopters with a maximum certificated take-off mass of 7,000 kg or less, this period may be reduced to 30 minutes.
 |  |  |
| 1. The cockpit voice recorder must start automatically to record prior to the helicopter moving under its own power and continue to record until the termination of the flight when the helicopter is no longer capable of moving under its own power. In addition, depending on the availability of electrical power, the cockpit voice recorder must start to record as early as possible during the cockpit checks prior to engine start at the beginning of the flight until the cockpit checks immediately following engine shutdown at the end of the flight.
 |  |  |
| 1. The cockpit voice recorder must have a device to assist in locating that recorder in water.
 |  |  |
| 1. In complying with this section, the cockpit voice recorder may be combined with the flight data recorder. (See AC OPS 3.700(e)).
 |  |  |

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| CAR-OPS 3.705 - Cockpit Voice Recorders-2 |
| a) An operator shall not operate a helicopter first issued with an individual Certificate of Airworthiness, up to and including 31 July 1999 which has a maximum certificated take-off mass (MCTOM) over 7000 kg or a maximum certificated take-off mass (MCTOM) over 3175 kg but not more than 7000 kg and first issued with an individual Certificate of Airworthiness on or after 1 January 1987; unless it is equipped with a cockpit voice recorder which records with reference to a timescale: 1. Voice communications transmitted from or received by the crew by radio;
 |  |  |
| 1. The aural environment of the flight deck, including where practicable, without interruption, the audio signals received from each crew microphone in use;
 |  |  |
| 1. Voice communications of crew members using the crew members interphone system;
 |  |  |
| 1. Voice or audio signals identifying navigation or approach aids introduced into a headset or speaker;
 |  |  |
| 1. Voice communications of crew members using the public address system, where practicable; and
 |  |  |
| 1. For a helicopter not equipped with a flight data recorder, the parameters necessary to determine main rotor speed.
 |  |  |
| 1. The cockpit voice recorder shall be capable of retaining information recorded during at least the last 30 minutes of its operation.
 |  |  |
| 1. The cockpit voice recorder must start to record prior to the helicopter moving under its own power and continue to record until the termination of the flight when the helicopter is no longer capable of moving under its own power
 |  |  |
| 1. The cockpit voice recorder must have a device to assist in locating that recorder in water.
 |  |  |
| 1. In complying with this section, the cockpit voice recorder may be combined with the flight data recorder. (See AC OPS 3.700(e)).
 |  |  |
| 1. Helicopters with a maximum certificated take-off mass (MCTOM) over 3,175 Kg but not more than 7,000 Kg operated for the purpose of HEMS on or before 1 August 1999, may continue to be operated for the purpose of HEMS without being equipped with a cockpit voice recorder until 31 December 2010, if acceptable to the Authority.
 |  |  |
| CAR-OPS 3.715 - Flight Data Recorders-1 |
| 1. An operator shall not operate any helicopter first issued with an individual Certificate of Airworthiness on or after 1 August 1999 which has a maximum certificated take-off mass (MCTOM) over 3,175 Kg unless it is equipped with a flight data recorder that uses a digital method of recording and storing data and a method of readily retrieving that data from the storage medium is available.
 |  |  |
| 1. The flight data recorder shall be capable of retaining the data recorded during at least the last 8 hours of its operation.
 |  |  |
| 1. The flight data recorder must, with reference to a timescale, record:
2. For helicopters with a maximum certificated take-off mass (MCTOM) over 3,175 Kg but not over 7,000 Kg the parameters listed in Tables A of Appendix 1;
 |  |  |
| 1. For helicopters with a maximum certificated take-off mass over 7,000 kg, the parameters listed in Table B of Appendix 1, except that, if acceptable to the authority, parameter 19 need not be recorded, when any of the following conditions are met:
	1. The sensor is not readily available,
	2. A change is required in the equipment that generates the data;
 |  |  |
| 1. For all helicopters the flight data recorder must record any dedicated parameters relating to novel or unique design or operational characteristics of the helicopter; and
 |  |  |
| 1. For helicopters equipped with electronic display systems the parameters listed in Table C of appendix 1.
 |  |  |
| 1. Data must be obtained from helicopter sources, which enable accurate correlation with information displayed to the flight crew.
 |  |  |
| 1. The flight data recorder must start automatically to record the data prior to the helicopter being capable of moving under its own power and must stop automatically after the helicopter is incapable of moving under its own power.
 |  |  |
| 1. The flight data recorder must have a device to assist in locating that recorder in water.
 |  |  |
| 1. In complying with this section, the flight data recorder may be combined with the cockpit voice recorder (see AC OPS 3.700(e)).
 |  |  |

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| CAR-OPS 3.720 - Flight Data Recorders-2 |
| 1. An operator shall not operate any helicopter first issued with an individual Certificate of Airworthiness on or after 1 January 1989, up to and including 31 July 1999, which has a maximum certificated take-off mass (MCTOM) over 7,000 Kg or a maximum approved passenger seating configuration (MAPSC) of more than 9, unless it is equipped with a flight data recorder that uses a digital method of recording and storing data and a method of readily retrieving that data from the storage medium is available.

For helicopters not equipped with a flight data recorder on or before 31 July 1999 compliance with this requirement may be delayed until 1 January 2005. |  |  |
| 1. The flight data recorder shall be capable of retaining the data recorded during at least the last 5 hours of its operation.
 |  |  |
| 1. The flight data recorder must, with reference to a timescale, record:
2. For helicopters with a maximum certificated take-off mass (MCTOM) of 7,000 Kg or less and with a maximum approved passenger seating configuration (MAPSC) of more than 9 the parameters listed in Table A of Appendix 1.
 |  |  |
| 1. For helicopters with a maximum certificated take-off mass over 7,000 kg, the parameters listed in table B of appendix 1 , except that, if acceptable to the authority, parameter 19 need not be recorded, when any of the following conditions are met:
	1. The sensor is not readily available,
	2. A change is required in the equipment that generates the data.
 |  |  |
| * + 1. For all helicopters, the flight data recorder must record any dedicated parameters relating to novel or unique design or operational characteristics of the helicopter; and
 |  |  |
| * + 1. For helicopters equipped with electronic display systems, the parameters listed in Table C of Appendix 1.
 |  |  |
| 1. Individual parameters that can be derived by calculation from the other recorded parameters, need not to be recorded if acceptable to the Authority.
 |  |  |
| 1. Data must be obtained from helicopter sources, which enable accurate correlation with information displayed to the flight crew.
 |  |  |
| 1. The flight data recorder must start to record the data prior to the helicopter being capable of moving under its own power and must stop after the helicopter is incapable of moving under its own Power
 |  |  |
| 1. The flight data recorder must have a device to assist in locating that recorder in water.
 |  |  |
| 1. In complying with this section, the flight data recorder may be combined with the cockpit voice recorder (see AC OPS 3.700(e)).
 |  |  |
| CAR-OPS 3.730 - Seats, Seat Safety Belts, Harnesses and Child Restraint Devices |
| 1. An operator shall not operate a helicopter unless it is equipped with:
	1. A seat or berth for each person who is aged two years or more;
 |  |  |
| * 1. For helicopters first issued with an individual Certificate of Airworthiness, up to and including 31 July 1999 a safety belt, with or without a diagonal shoulder strap, or a safety harness for use in each passenger seat for each passenger aged two years or more;
 |  |  |
| * + - 1. For helicopters first issued with an individual Certificate of Airworthiness, on or after 1 August 1999, a safety belt, with a diagonal shoulder strap, or a safety harness for use in each passenger seat for each passenger aged 2 years or more;
 |  |  |
| * + - 1. A restraint device for each passenger less than 2 years of age;
 |  |  |
| * + - 1. A safety harness for each flight crew seat incorporating a device which will automatically restrain the occupant’s torso in the event of rapid deceleration; and
 |  |  |
| * + - 1. A safety harness for each cabin crew member’s seat.

Note: This requirement does not preclude use of passenger seats by cabin crew members carried in excess of the required cabin crew complement. |  |  |
| 1. Seats for cabin crew members located, where possible, near a floor level emergency exit. If the number of required cabin crew members exceeds the number of floor level emergency exits the additional cabin crew seats required shall be located such that the cabin crew member(s) may best be able to assist passengers in the event of an emergency evacuation. Such seats shall be forward or rearward facing within 15º of the longitudinal axis of the helicopter.
 |  |  |
| 1. All safety belts with shoulder harness must have a single point release. A safety belt with a diagonal shoulder strap is permitted if it is not reasonably practicable to fit the latter.
 |  |  |
| CAR-OPS 3.731 - Fasten Seat Belt and No Smoking Signs |
| An operator shall not operate a helicopter in which all passenger seats are not visible from the commander’s seat, or from the seat of the pilot to whom the conduct of the flight may be delegated, unless it is equipped with a means of indicating to all passengers and cabin crew when seat belts shall be fastened and when smoking is not allowed. |  |  |
| CAR-OPS 3.740-Placards |
| An operator shall not operate a helicopter unless the following placards are installed;* + 1. Every exit from the aircraft shall be marked with the words “Exit’ or “Emergency Exit” in capital letters, and in both English and Arabic script.
 |  |  |
| * + 1. Every exit from the aircraft shall be marked with instructions in English and Arabic to indicate the correct method of opening the exit.
 |  |  |
| * + 1. The marking shall be placed on or near the inside surface of the door or other closure of the exit and, if it is operable, from the outside of the aircraft on or near the exterior surface.
 |  |  |
| CAR-OPS 3.745 - First-Aid Kits |
| 1. An operator shall not operate a helicopter unless it is equipped with first-aid kits, readily accessible for use.
 |  |  |
| 1. An operator shall ensure that first-aid kits are:
	1. Inspected periodically to confirm, to the extent possible, that contents are maintained in the condition necessary for their intended use; and
 |  |  |
| * 1. Replenished at regular intervals, in accordance with instructions contained on their labels, or as circumstances warrant.
 |  |  |
| CAR-OPS 3.775 - Supplemental Oxygen - Non-Pressurised Helicopters |
| 1. General
2. An operator shall not operate a non-pressurised helicopter at pressure altitudes above 10 000 ft unless supplemental oxygen equipment, capable of storing and dispensing the oxygen supplies required, is provided.
 |  |  |
| 1. The amount of supplemental oxygen for sustenance required for a particular operation shall be determined on the basis of flight altitudes and flight duration, consistent with the operating procedures established for each operation in the Operations Manual and with the routes to be flown, and with the emergency procedures specified in the Operations Manual.
 |  |  |
| 1. A helicopter intended to be operated at pressure altitudes above 10 000 ft shall be provided with equipment capable of storing and dispensing the oxygen supplies required.
 |  |  |
| 1. Oxygen supply requirements
	1. *Flight crew members.* Each member of the flight crew on flight deck duty shall be supplied with supplemental oxygen in accordance with Appendix 1. If all occupants of cockpit seats are supplied from the flight crew source of oxygen supply then they shall be considered as flight crew members on flight deck duty for the purpose of oxygen supply.
 |  |  |
| * 1. *Cabin crew members, additional crew members and passengers.* Cabin crew members and passengers shall be supplied with oxygen in accordance with Appendix 1. Cabin crew members carried in addition to the minimum number of cabin crew members required, and additional crew members, shall be considered as passengers for the purpose of oxygen supply
 |  |  |
| CAR-OPS 3.790 - Hand Fire Extinguishers |
| An operator shall not operate a helicopter unless hand fire extinguishers are provided for use in crew, passenger and, as applicable, cargo compartments and galleys in accordance with the following:1. The type and quantity of extinguishing agent must be suitable for the kinds of fires likely to occur in the compartment where the extinguisher is intended to be used and, for personnel compartments, must minimise the hazard of toxic gas concentration;
 |  |  |
| 1. At least one hand fire extinguisher, containing Halon 1211 (bromochlorodifluoromethane, CBrCIF2), or equivalent as the extinguishing agent, must be conveniently located on the cockpit for use by the flight crew;
 |  |  |
| 1. At least one hand fire extinguisher must be located in, or readily accessible for use in, each galley not located on the main passenger deck;
 |  |  |
| 1. At least one readily accessible hand fire extinguisher must be available for use in each cargo compartment which is accessible to crew members during flight for the purpose of fire fighting; and
 |  |  |
| 1. There must be at least the following number of hand fire extinguishers conveniently located to provide availability for use in each passenger compartment.
 |  |  |
| Passenger compartment seating capacity | Minimum number of Hand fire extinguishers |
| 7 to 30 seats | 1  |
| 31 to 60 | 2  |
| 61 to 200 | 3  |
| CAR-OPS 3.800 - Marking of Break-In Points |
| An operator shall ensure that, if designated areas of the fuselage suitable for break-in by rescue crews in emergency are available on a helicopter, such areas shall be marked as shown below. The colour of the markings shall be red or yellow, and if necessary they shall be outlined in white to contrast with the background. If the corner markings are more than 2 metres apart, intermediate lines 9 cm x 3 cm shall be inserted so that there is no more than 2 metres between adjacent marks.  |  |  |
| CAR-OPS 3.810 - Megaphones |
| 1. An operator shall not operate a helicopter with a total maximum approved passenger seating configuration 9MAPSC) of more than 19 unless it is equipped with portable battery-powered megaphones readily available for use by crew members during an emergency evacuation.
 |  |  |
| CAR-OPS 3.815 - Emergency Lighting |
| 1. An operator shall not operate a helicopter which has a maximum approved passenger seating configuration (MAPSC) of more than 19 unless it is equipped with:
	1. An emergency lighting systems having an independent power supply to provide a source of general cabin illumination to facilitate the evacuation of the helicopter; and
	2. Illuminated emergency exit marking and locating signs.
 |  |  |
| CAR-OPS 3.820 - Emergency Locator Transmitter |
| 1. An operator shall not operate a helicopter unless it is equipped with an automatic Emergency Locator Transmitter (ELT) attached to the helicopter in such a manner that, in the event of a crash, the probability of the ELT transmitting a detectable signal is maximised and the possibility of the ELT transmitting at any other time is minimised.
 |  |  |
| 1. An operator shall not operate a helicopter in Performance class 1 or 2 o a flight over water in a hostile environment as defined in CAR OPS 3.480(a)(12)(ii)(A) at a distance from land corresponding to more than 10 minutes flying time at normal cruising speed, on a flight in support of or in connection with the offshore exploitation of mineral resources (including gas), unless it is equipped with an Automatically Deployable Emergency Locator Transmitter (ELT(AD)).
 |  |  |
| 1. An operator must ensure that the ELT is capable of transmitting on the distress frequencies prescribed in ICAO Annex 10.
 |  |  |
| CAR-OPS 3.825 - Life Jackets |
| 1. An operator shall not operate a helicopter for any operations on water or on a flight over water:
	1. When operating in Performance class 3 beyond autorotational distance from land; or
	2. When operating in Performance class 1 or 2 at a distance from land corresponding to more than 10 minutes flying time at normal cruise speed; or
	3. When operating in Performance class 2 or 3 when taking off or landing at a heliport where the rejected take-off or approach path is over water, unless it is equipped with life jackets equipped with a survivor locator light, for each person on board, stowed in an easily accessible position, with safety belt or harness fastened, from the seat or berth of the person for whose use it is provided and an individual infant flotation device, equipped with a survivor locator light, for use by each infant on board.
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| CAR –OPS 3.827-Crew Survival Suits |
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| 1. An operator shall not operate a helicopter in Performance class 1 or 2 on a flight over water at a distance from land corresponding to more than 10 minutes flying time at a normal cruising speed from land on a flight in support of or in connection with the offshore exploitation of mineral resources (including gas) when the weather report or forecasts available to the commander indicate that the sea temperature will be less than plus 10ºC during the flight or when the estimated rescue time exceeds the calculated survival time unless each member of the crew is wearing a survival suit.
 |  |  |
| 1. An operator shall not operate a helicopter in Performance class 3 on a flight over water beyond autorotational or safe forced landing distance from land when the weather report or forecasts available to the commander indicate that the sea temperature will be less than 10ºC during the flight, unless each member of the crew is wearing a survival suit.
 |  |  |

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| CAR-OPS 3.830 - Life-Rafts and Survival ELTs for Extended Overwater Flights |
| 1. An operator shall not operate a helicopter on a flight over water at a distance from land corresponding to more than 10 minutes flying time at normal cruising speed when operating in Performance class 1 or 2, or 3 minutes flying time at normal cruising speed when operating in Performance class 3 unless it carries:
	* 1. In the case of a helicopter carrying less than 12 persons, a minimum of one life-raft with a rated capacity of not less than the maximum number of persons on board;
 |  |  |
| * + - 1. In the case of a helicopter carrying more than 11 persons, a minimum of two life-rafts sufficient together to accommodate all persons capable of being carried on board. Should one life-raft of the largest rated capacity be lost, the overload capacity of the remaining life-raft(s) shall be sufficient to accommodate all persons on the helicopter (See AMC OPS 3.830(a)(2));
 |  |  |
| * + - 1. At least one survival Emergency Locator Transmitter (ELT(S)) for each liferaft carried (but not more than a total of 2 ELT’s are required), capable of transmitting on the distress frequencies prescribed in ICAO Annex 10. (See AMC OPS 3.830(a)(3));
 |  |  |
| * + - 1. Emergency exit illumination; and
 |  |  |
| * + - 1. Life saving equipment including means of sustaining life as appropriate to the flight to be undertaken.
 |  |  |
| CAR-OPS 3.835 - Survival Equipment |
| An operator shall not operate a helicopter in areas where search and rescue would be especially difficult unless it is equipped with the following:1. Signalling equipment to make the pyrotechnical distress signals described in ICAO Annex 2;
 |  |  |
| 1. At least one survival Emergency Locator Transmitter (ELT(S)) capable of transmitting on the distress frequencies prescribed in ICAO Annex 10 (see AMC OPS 3.830(a)(3)); and
 |  |  |
| 1. Additional survival equipment for the route to be flown taking account of the number of persons on board (See AMC OPS 3.835(c)).
 |  |  |
| CAR-OPS 3.837-Additional requirements for helicopters operating to or from helidecks located in a hostile sea area (as defined in CAR-OPS 3.480(a)(11)(ii)(A)) |
| * 1. operate a helicopter on a flight to or from a helideck located in a hostile sea area at a distance from land corresponding to more than 10 minutes flying time at normal cruising speed on a flight in support of or in connection with the offshore exploitation of mineral resources (including gas) unless:
		1. When the weather report or forecasts available to the commander indicate that the sea temperature will be less than plus 10ºC during the flight, or when the estimated rescue time exceeds the calculated survival time, or the flight is planned to be conducted at night, all persons on board are wearing a survival suit (see IEM OPS 3.827);
 |  |  |
| * + 1. All liferafts carried in accordance with CAR-3.830 are installed so as to be usable in the sea conditions in which the helicopter’s ditching, flotation and trim characteristics were evaluated in order to comply with the ditching requirements for certification (See IEM OPS 3.837(a)(2));
 |  |  |
| * + 1. The helicopter is equipped with an emergency lighting system having an independent power supply to provide a source of general cabin illumination to facilitate the evacuation of the helicopter;
 |  |  |
| * + 1. All emergency exits, including crew emergency exits, and its means of opening are conspicuously marked for the guidance of occupants using the exits in daylight or in the dark. Such markings are designed to remain visible if the helicopter is capsized and the cabin is submerged;
		2. All non-jettisonable doors which are designated as Ditching Emergency Exits have a means of securing them in the open position so they do not interfere with occupants egress in all sea conditions up to the maximum required to be evaluated for ditching and flotation;
		3. All doors, windows or other openings in the passenger compartment authorised by the Authority as suitable for the purpose of underwater escape, are equipped so as to be operable in an emergency;
		4. Lifejackets are worn at all times; unless the passenger or crew member is wearing an integrated survival suit that meets the combined requirement of the survival suit and lifejacket which is acceptable to the Authority.
 |  |  |
| CAR-OPS 3.840 – Helicopters certificated for operating on water - Miscellaneous Equipment |
| 1. An operator shall not operate a helicopter certificated for operating on water unless it is equipped with:
	1. A sea anchor and other equipment necessary to facilitate mooring, anchoring or manoeuvring the aircraft on water, appropriate to its size, weight and handling characteristics; and
 |  |  |
| * 1. Equipment for making the sound signals prescribed in the International Regulations for preventing collisions at sea, where applicable.
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| CAR-OPS 3.843-All helicopters on fllights over water-Ditching |
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| 1. An operator shall not operate a helicopter in Performance class 1 or 2 on a flight over water in a hostile environment at a distance from land corresponding to more than 10 minutes flying time at normal cruise speed unless that helicopter is so designed for landing on water or is certificated in accordance with ditching provisions.
 |  |  |
| 1. An operator shall not operate a helicopter in Performance class 1 or 2 on a flight over water in a non-hostile environment at a distance from land corresponding to more than 10 minutes flying time at normal cruise speed unless that helicopter is; so designed for landing on water; or is certificated in accordance with ditching provisions; or is fitted with emergency flotation equipment.
 |  |  |
| 1. An operator shall not operate a helicopter in Performance class 2, when taking-off or landing over water, unless that helicopter is; so designed for landing on water; or is certificated in accordance with ditching provisions; or is fitted with emergency floatation equipment. (See IEM OPS 3.843(c)). Except where, for the purpose of minimising exposure, the landing or take-off at a HEMS operating site located in a congested environment is conducted over water – unless otherwise required by the Authority.
 |  |  |
| 1. An operator shall not operate a helicopter in Performance class 3 on a flight over water beyond safe forced landing distance from land unless that helicopter is; so designed for landing on water; or is certificated in accordance with ditching provisions; or is fitted with emergency flotation equipment.
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| SUBPART L – COMMUNICATION AND NAVIGATION EQUIPMENT |
| CAR-OPS 3.845 - General Introduction |
| 1. An operator shall ensure that a flight does not commence unless the communication and navigation equipment required under this Subpart is:
2. Approved and installed in accordance with the requirements applicable to them, including the minimum performance standard and the operational and airworthiness requirements;
 |  |  |
| 1. Installed such that the failure of any single unit required for either communication or navigation purposes, or both, will not result in the failure of another unit required for communications or navigation purposes.
 |  |  |
| 1. In operable condition for the kind of operation being conducted except as provided in the MEL (CAR-OPS 3.030 refers); and
 |  |  |
| 1. So arranged that if equipment is to be used by one flight crew member at his station during flight it must be readily operable from his station. When a single item of equipment is required to be operated by more than one flight crew member it must be installed so that the equipment is readily operable from any station at which the equipment is required to be operated.
 |  |  |
| * 1. Communication and navigation equipment minimum performance standards are those prescribed in the applicable Technical Standard Orders (TSO), unless different performance standards are prescribed in the operational or airworthiness codes. Communication and navigation equipment complying with design and performance specifications on the date of CAR-OPS implementation may remain in service, or be installed, unless additional requirements are prescribed in this Subpart. Communication and navigation equipment which has already been approved does not need to comply with a revised TSO or a revised specification unless a retroactive requirement is prescribed.
 |  |  |
| CAR-OPS 3.850 - Radio Equipment |
| 1. An operator shall not operate a helicopter unless it is equipped with radio required for the kind of operation being conducted.
 |  |  |
| 1. Where two independent (separate and complete) radio systems are required under this Subpart, each system must have an independent antenna installation except that, where rigidly supported non-wire antennae or other antenna installations of equivalent reliability are used, only one antenna is required.
 |  |  |
| 1. The radio communication equipment required to comply with paragraph (a) above must also provide for communications on the aeronautical emergency frequency 121.5 MHz.
 |  |  |
| CAR-OPS 3.855 - Audio Selector Panel |
| An operator shall not operate a helicopter under IFR unless it is equipped with an audio selector panel accessible to each required flight crew member. |  |  |

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| CAR-OPS 3.860 - Radio Equipment for Operations Under VFR Over Routes Navigated by Reference to Visual Landmarks |
| An operator shall not operate a helicopter under VFR over routes that can be navigated by reference to visual landmarks, unless it is equipped with the radio equipment (communication and SSR transponder equipment) necessary under normal operating conditions to fulfil the following*:*1. Communicate with appropriate ground stations;
 |  |  |
| 1. Communicate with appropriate air traffic control facilities from any point in controlled airspace within which flights are intended;
 |  |  |
| 1. Receive meteorological information; and
 |  |  |
| 1. When mandated by airspace requirements, reply to SSR interrogations with a pressure-altitude reporting transponder which operates in accordance with ICAO Annex 10, Volume IV.
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| CAR-OPS 3.865 - Communication and Navigation Equipment for Operations Under IFR, or Under VFR Over Routes Not Navigated by Reference to Visual Landmarks |
| 1. An operator shall not operate a helicopter under IFR, or under VFR over routes that cannot be navigated by reference to visual landmarks, unless the helicopter is equipped with radio (communication and SSR transponder) and navigation equipment in accordance with the requirements of air traffic services in the area(s) of operation.
 |  |  |
| 1. *Radio equipment.* An operator shall ensure that radio equipment comprises not less than:
	1. Two independent radio communication systems necessary under normal operating conditions to communicate with an appropriate ground station from any point on the route including diversions;
 |  |  |
| * 1. When mandated by airspace requirements, a pressure-altitude reporting transponder which operates in accordance with ICAO Annex 10, volume IV.
 |  |  |
| 1. *Navigation equipment*. An operator shall ensure that navigation equipment
	1. Comprises not less than:
2. Two independent navigation aids appropriate to the route/area to be flown;
 |  |  |
| 1. An approach aid suitable for the destination and alternate heliports;
 |  |  |
| 1. An area navigation system when area navigation is required for the route/area being flown;
 |  |  |
| 1. Two VOR receiving systems on any route, or part thereof, where navigation is based only on VOR signals; and
 |  |  |
| 1. Two ADF systems on any route, or part thereof, where navigation is based only on NDB signals, or
 |  |  |
| * 1. Complies with the Required Navigation Performance (RNP) Type for operation in the airspace concerned. (See also IEM OPS 3.243.)
 |  |  |
| 1. An operator may operate an helicopter that is not equipped with the navigation equipment specified in sub-paragraph(s) (c)(1)(iv) and/or (c)(1)(v) above, provided that it is equipped with alternative equipment authorised for the route/area being flown by the Authority. The reliability and the accuracy of alternative equipment must allow safe navigation for the intended route.
 |  |  |
| 1. An operator shall ensure that VHF communication equipment, ILS Localiser and VOR receivers installed on helicopters to be operated under IFR are of a type that has been approved as complying with the FM immunity performance standards (See AC OPS 3.865(e)).
 |  |  |
| 1. Where not more than one item of equipment specified in (a) above is unserviceable when the helicopter is about to begin a flight, the helicopter may nevertheless take-off on that flight if:
	1. It is not reasonably practical to repair or replace that item, before the commencement of the flight;
	2. The helicopter has not made more than one flight since the item was found to be unserviceable; and
	3. The commander has satisfied himself that, taking into account the latest information available as to the route/area and heliport to be used (including any planned diversion) and the weather conditions likely to be encountered, the flight can be made safely and in accordance with any relevant requirements of the appropriate air traffic control limit.
 |  |  |