



Government of India

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CIVIL AVIATION REQUIREMENTS
SECTION 7 - FLIGHT CREW STANDARDS
TRAINING AND LICENSING
SERIES 'B' PART XV
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EFFECTIVE: FORTHWITH

Subject: **Helicopter Emergency Medical Service (HEMS)**

1. INTRODUCTION

A helicopter is very versatile machine and its utilization is unlimited in today's modern world. One of the most important tasks of the helicopter is to provide emergency service during urgent situations that necessitate quick evacuation and medical aid. The helicopter in this role provides immediate medical assistance and rapid transportation from site of the medical emergency. This CAR lays down the minimum requirements for HEMS operations.

2. DEFINITIONS

Congested hostile environment. A hostile environment within a congested area.

Helicopter Emergency Medical Service (HEMS) flight. A flight by a helicopter operating under a HEMS, the purpose of which is to facilitate emergency medical assistance, where immediate and rapid transportation is essential, by carrying:

- (i) Medical personnel; or
- (ii) Medical supplies (equipment, blood, organs, drugs); or
- (iii) Ill or injured persons and other persons directly involved.

Ground emergency service personnel. Any ground emergency service personnel (such as policemen, firemen etc.) involved with HEMS and whose tasks are to any extent pertinent to helicopter operations.

HEMS crew member. A person who is assigned to a HEMS flight for the purpose of attending to any person in need of medical assistance carried in

the helicopter and assisting the pilot during the mission. This person is subject to specific training as detailed in 5.2 below.

HEMS operating base. A heliport at which the HEMS crew members and the HEMS helicopter may be on standby for HEMS operations.

HEMS operating site. A site selected by the commander during a HEMS flight for landing and take off.

Hostile environment. An environment in which:

- a) a safe forced landing cannot be accomplished because the surface is inadequate; or
- b) the helicopter occupants cannot be adequately protected from the elements; or
- c) search and rescue response/capability is not provided consistent with anticipated exposure;
or
- d) there is an unacceptable risk of endangering persons or property on the ground.

Medical passenger. A medical person carried in a helicopter during a HEMS flight, including but not limited to doctors, nurses and paramedics. This passenger shall receive a briefing as detailed in 5.3 below.

Non-congested hostile environment. A hostile environment outside a congested area.

Non-hostile environment. An environment in which:

- a) the surface is suitable for a safe forced landing; and
- b) the helicopter occupants can be adequately protected from the elements;
- c) search and rescue response/capability is provided consistent with anticipated exposure; and
- d) the assessed risk of endangering persons or property on the ground is acceptable.

Note.- Those parts of a congested area satisfying the above requirements are considered non-hostile.

3. OPERATIONAL REQUIREMENTS

- 3.1 An operator must ensure that the Operations Manual includes a supplement specifying operational considerations specific to HEMS operations. Relevant extracts from the Operations Manual shall be made available to the organization for which the HEMS is being provided.

- 3.2 Performance Class 3 operations shall not be conducted over a hostile environment.
- 3.3 Performance Class 3 operations in non congested hostile environment over hilly terrain with turbine engine helicopter may be conducted subject to the following conditions:
- (i) Prior DGCA approval for type and area of such operations has been obtained;
 - (ii) Such operations are performed within the limitations established by the helicopter manufacturer.
 - (iii) The max certificated seating capacity of the helicopter is less than or equal to six.
 - (iv) The operator shall ensure that performance criteria of flight manual are strictly followed and the reliability of the engine and helicopter systems are continuously monitored.
- 3.4 **Take-off and landing-helicopters with an MTOM of 5700 kg or less**
- 3.4.1 Operations to/from a heliport at a hospital, which is located in a hostile environment, shall be operated as Performance Class 1.
- 3.4.2 Operations to/from a HEMS operating site located in a hostile environment shall as far as possible be as Performance Class 1. The commander shall make every reasonable effort to minimise the period during which there would be danger to helicopter occupants and persons on the surface in the event of failure of a power unit.
- 3.4.3 The HEMS operating site must be big enough to provide adequate clearance from all obstructions.
- 3.4.4 Guidance on take-off and landing procedures at previously unsurveyed HEMS operating sites shall be contained in the Operations Manual.
- 3.5 **Take-off and landing-helicopters with an MTOM exceeding 5700 kg.**
- 3.5.1 Helicopters conducting HEMS shall be operated in accordance with Performance Class 1 operations.
4. **The crew**
- 4.1 The Operations Manual shall contain specific criteria for the selection of flight crewmembers for the HEMS task, taking previous experience into account.

4.2 The minimum experience for commanders conducting HEMS flights shall not be less than

- a) either 1000 hours pilot in command of aircraft of which 500 hours is as pilot-in command on helicopters;

or

1000 hours as copilot in HEMS operations of which 500 hours is as pilot-in-command under supervision; and, 100 hours pilot-in-command of helicopters.

- b) 500 hours operating experience gained in similar operational environment.
- d) Successful completion of training in accordance with 5.2.

4.3 **Recency**

All pilots conducting HEMS operations shall have completed a minimum of 30 minutes flight by sole reference to instruments in a helicopter or in a synthetic training device (STD) within the last 6 months.

4.4 **Crew composition**

4.4.1 **Day flight.** The minimum crew by day shall be one pilot and one HEMS crewmember. This can be reduced to one pilot only in exceptional circumstances.

4.4.2 **Night Flight.** The minimum crew by night shall be two pilots

5. **ADDITIONAL REQUIREMENTS**

The helicopter internal configuration should be suitable for HEMS operations and provide necessary space for approved stretchers and medical equipment.

5.1 **Helicopter medical equipment**

- (i) The installation of all helicopter dedicated medical equipment and, where appropriate, its operation including any subsequent modifications shall be approved.
- (ii) An operator shall ensure that procedures are established for the use of portable equipment on board.

5.2 Helicopter communication and navigation equipment

Helicopters conducting HEMS flights shall be provided with communications equipment capable of conducting two-way communication with the organization for which the HEMS is being provided and, where possible, to communicate with ground emergency service personnel.

5.3 HEMS operating base facilities

- (i) If crewmembers are required to be on standby with a reaction time of less than 45 minutes, dedicated suitable accommodation shall be provided close to each operating base.
- (ii) At each operating base the pilots shall be provided with facilities for obtaining current and forecast weather information and shall be provided with satisfactory communications with the appropriate ATS unit. Satisfactory facilities shall be available for the planning of all tasks.

5.4 Refueling with passengers on board

When the commander considers refuelling with passengers on board to be necessary, it can be undertaken with either rotors stopped or rotors turning provided the following requirements are met:

- (i) Door(s) on the refuelling side of the helicopter shall remain closed;
- (ii) Door(s) on the non-refuelling side of the helicopter shall remain open, weather permitting;
- (iii) Fire fighting facilities of the appropriate scale shall be positioned so as to be immediately available in the event of a fire; and
- (iv) Sufficient personnel shall be immediately available to move patients clear of the helicopter in the event of a fire.

6. Training and checking

6.1 Flight crew members

6.1.1 The flight crew shall have the following additional items of training:

- (i) Meteorological training concentrating on the understanding and interpretation of available weather information;
- (ii) Preparing the helicopter and specialist medical equipment for subsequent HEMS departure;
- (iii) Practice of HEMS departures;
- (iv) The assessment from the air of the suitability of HEMS operating sites;
- (v) The medical effects air transport may have on the patient.

6.1.2 The proficiency check of the crew shall have the following additional items:

- (a) Proficiency check by day and/or night checks as appropriate including landing and takeoff profiles likely to be used at HEMS operating sites.
- (b) Line checks with special emphasis on the following:
 - (i) Local area meteorology;
 - (ii) HEMS flight planning;
 - (iii) HEMS departures;
 - (iv) The selection from the air of HEMS operating sites;
 - (v) Low level flight in poor weather; and
 - (vi) Familiarity with established HEMS operating sites in operator's area of operation.

6.2 HEMS crew member

The HEMS crewmember shall be trained in following additional items:

- (i) Duties in the HEMS role;
- (ii) Navigation (map reading, navigation aid principles and use);
- (iii) Operation of radio equipment;
- (iv) Use of onboard medical equipment;
- (v) Preparing the helicopter specialist medical equipment for subsequent HEMS departure;
- (vi) Instrument reading, warnings, use of normal and emergency check list in assistance of the pilot as required;
- (vii) Basic understanding of helicopter type in terms of location design of normal and emergency systems and equipment;
- (viii) Crew coordination;
- (ix) Practice of response to HEMS call out;
- (x) Conducting refuelling and rotors running refuelling;
- (xi) HEMS operating site selection and use;
- (xii) Techniques for handling patients, the medical consequences of air transport and some knowledge of hospital casualty reception;
- (xiii) Marshalling signals;
- (xiv) Underslung load operations as appropriate;
- (xv) Winch operations as appropriate;
- (xvi) The dangers to self and others of rotor running helicopters including loading of patients;
- (xvii) The use of the helicopter inter-communications system.

6.3 Medical passengers.

Prior to any HEMS flight, or series of flights, medical passengers shall be briefed on the following:

- (i) Familiarization with the helicopter type(s) operated;

- (ii) Entry and exit under normal and emergency conditions both for self and patients;
- (iii) Use of the relevant onboard specialist medical equipment;
- (iv) The need for the commander's approval prior to use of specialized equipment;
- (v) Method of supervision of other medical staff;
- (vi) The use of helicopter intercommunication systems; and
- (vii) Location and use of onboard fire extinguishers.

6.4 Ground emergency service personnel

An operator shall take all reasonable measures to ensure that ground emergency service personnel are familiar with the following:

- (i) Two way radio communication procedures with helicopters;
- (ii) The selection of suitable HEMS operating sites for HEMS flights;
- (iii) The physical danger areas of helicopters;
- (iv) Crowd control in respect of helicopter operations; and
- (v) The evacuation of helicopter occupants following an on-site helicopter accident.



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