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CHAPTER  
THIRTY SEVEN

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Air Ambulance Operations

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### AIR AMBULANCE OPERATIONS

#### 37.1 Pre-Flight Duties

The pilot-in-command (PIC) will obtain a detailed weather briefing at the beginning of the scheduled shift. The weather briefing will consist of current and forecast conditions for the area of operations of the air ambulance program.

The PIC will be familiar with the current map of the area including the designated local flying area of operations and uncharted hazards. Any flight outside a local flying area is a cross-country operation.

During marginal weather conditions, updated weather reports will be obtained periodically as well as any information on weather trending.

Refer to Chapter 9 section 905 of this GOM for additional Pre-Flight duties.

#### 37.2 Helicopter Air Ambulance Weather Minimums and Lighting Conditions

The following are VFR response weather minimums for air ambulance operations and minimum weather conditions when operating air ambulance in Class G (uncontrolled) airspace:

Area	Non-Mountainous		Mountainous	
	Local	Cross Country	Local	Cross Country
	Ceiling    Visibility			
<b>Condition</b>				
Day	500-1	800-2	500-2	800-3
Night – High Lighting Conditions	500-2	1000-3	500-3	1000-3
Night – Low Lighting Conditions	800-3	1000-5	1000-3	1000-5

*High Lighting Conditions* – Conditions in which the cloud cover is less than broken (less than 5/8 cloud cover), the time is between local Moonrise and Moonset, and at least 50% of the lunar disk illuminated, or the entire operations is conducted over a lighted surface area.

*Low Lighting Conditions* – Other than high lighting conditions described above.

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*Lighted Surface Area* – An area in which prominent objects are lighted, and surface lighting is adequate to identify terrain features and establish a usable horizontal reference. The lighting required to support this level of surface definition may be man made, natural, direct or indirect, or any combination thereof, provided these stated requirements, and the requirements of 14 CFR 135.207, are met.

Moonrise, moonset and percentage of lunar disk illuminated data shall be consistent with data available from the United States Naval Observatory.

High Lighting condition minima may be used in low lighting conditions if both the aircraft and pilot are approved for use of NVGs under paragraph A050 of these Operations Specifications, Night Vision Goggle (NVG) Operations, and NVGs are used.

Helicopter flights into icing conditions are prohibited.

The medical crew and the PIC must agree that the flight can be safely initiated and continued under the present conditions.

### 37.3 Air Ambulance Operations - General

The following general guidelines will be followed when conducting air ambulance operations:

- A) All equipment will be secured before each flight. All doors will be checked and secured.
- B) No smoking permitted in the aircraft or within 50 feet of the aircraft.
- C) Medical crew will wear seat belts on all landings and take-offs. Seat belts will be worn during flight unless it is necessary to be out for patient care.
- D) Patients will be secured to stretcher or in isolette. Stretcher, and/or isolette will be secured in aircraft during all flights.
- E) Medical crew will wear a headset or helmet at all times.
- F) There will be minimal conversation in the aircraft during take off and landing and while in Anchorage Airspace.
- G) The PIC has final authority for any safety aspects of flight items, selection of landing zone, continuing or canceling a flight due to weather, loading of equipment, weight and balance of equipment or crew/passengers or anything related to the operation of the aircraft.
- H) The minimum altitude for helicopters is 300 feet AGL unless in the take-off or landing phase for all flights.
- I) The PIC will remain at the controls anytime the aircraft engines are operating.

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- (E) If an engine guard is available, the following procedures will be followed by the engine guard:
- 1) Maintain radio contact with the cockpit or remain in view of the pilot in the cockpit to facilitate exchanging hand signals.
  - 2) Notify the cockpit by radio or hand signal (flashing light or finger across the neck) if immediate engine shutdown is required.
  - 3) Wear ear protection.
  - 4) Be positioned approximately 50 feet forward of the operating engine.
  - 5) Monitor the area around the operating engine and prevent persons or vehicles from entering the propeller plane or blast area.

### 37.15 Flight Following - Airplane

A flight plan will be filed with FSS for all air ambulance fixed wing flights and coordinated through hospital dispatch/communications if available.

### 37.16 Night Vision Imaging Systems – Night Vision Goggles (NVG)

#### Preface

This section of the General Operations Manual contains specific procedures related to Helicopter Night Vision Goggle Operations (HNVGO). HNVGO shall be conducted in accordance with the procedures contained herein, the General Operations Manual, and other applicable regulations. All crewmembers who conduct HNVGO shall maintain a current copy of the NVG supplement.

#### Airworthiness, Maintenance and Security of Night Vision Equipment

##### a) Aircraft Preflight

- i) Confirm proper operation of NVG lighting.
- ii) Check blackout curtains (if installed).
- iii) Insure windscreen/windows are clean and free from defects, which degrade visual acuity.

##### b) Night Vision Goggle Preflight

- i) Check the Night Vision Goggle Maintenance and Inspection Log for unresolved discrepancies and current inspection.

#### NOTE

The Night Vision Goggle Maintenance and Inspection Log shall be kept in the goggle storage case.

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### ii) NVG preflight preparation for use (ITT F4949)

#### (1) Battery Installation

#### CAUTION

*Be sure the power module is off before installing the batteries. Ensure only 1.5 VDC AA Alkaline batteries are used.*

- (2) Mount the Low Profile Battery Pack onto the Velcro fastener(s) on the back of the helmet.
- (3) The power connector is quick release. To connect, align the red dot on the power cable with the white line on the NVG mount, press the male connector into the female connector on the NVG mount.

#### NOTE

The female connectors for some installations may have another red dot to line up on instead of a white line.

- (4) Push the battery pack covers up (open)
- (5) Remove the cartridge containing the two 1.5 VDC AA alkaline batteries.
- (6) Check to make sure the interior of each battery compartment is clean.
- (7) The required polarity for the battery is illustrated on the inside of the cartridge module.
- (8) Insert the battery cartridges into the battery pack and close the battery pack covers.

#### NOTE

Insure that fresh no-time batteries are in the alternate (left) compartment before beginning a flight. Some used batteries have many hours of life remaining. These batteries may be used in the primary (right) compartment.

### iii) Low-Battery Indicator/Electrical Check

- (1) With good batteries installed in both compartments of the low profile battery pack, open the left battery compartment and lift the battery cartridge up slightly to break the electrical contact.
- (2) Turn the power switch to the alternate (left) ON position. The low-battery indicator should blink.

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- (3) Return the switch to the OFF position (middle) and close the left battery compartment.
  - (4) Open the right battery compartment and lift the battery cartridge up slightly to break the electrical contact.
  - (5) Turn the power switch to the primary (right) ON position. The low-battery indicator should blink.
  - (6) If the low-battery indicator fails to blink, switch the primary and alternate batteries and repeat this test to isolate bad batteries.
- iv) **Attaching the Binocular Assembly to the Helmet Mount Assembly.**
- (1) Make sure the power switch is turned OFF.
  - (1) Hold the binocular assembly at approximately a 90° angle so the fore and aft adjustment assembly is up. Slide the spring-loaded ball bearings into the mount channels until they lock in place.
  - (2) Rotate the binocular assembly to the up and lock position.
- c) **Minimum Equipment List**
- i) Check for MEL deferred items critical to NVG flight.
  - ii) Remove inoperative NVG's from the aircraft.
- d) **Reporting of NVG Equipment discrepancies**
- i) The person (pilot or non-pilot crewmember) will record the discrepancy on the Night Vision Goggle Maintenance and Inspection Log.
  - ii) The PIC shall inform EHA maintenance of the discrepancy, and insure that the equipment is not used until the discrepancy is cleared by authorized maintenance personnel.
- e) **Security of Night Vision Goggles**
- i) Night Vision Goggles and associated equipment are considered "security sensitive" by the U.S. government and shall be maintained under the control of authorized personnel.
  - ii) The NVG's shall not be taken away from EHA / Providence Lifeguard Alaska controlled property except when in use for their stated purpose by NVG qualified personnel.
  - iii) Unauthorized use of the NVG's is prohibited.
  - iv) The NVG's shall be stored in the provided container and kept in a secure location when not in use, or HNVGO is not anticipated.

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### 37.4 Aircraft Refueling

Aircraft refueling procedures are located in Chapter 19 of this GOM. The following are additional procedures pertaining to air ambulance operations:

- A) If medical crew is with the aircraft during refueling, make sure the medical crew is attentive in and around the aircraft and that the personnel refueling the aircraft is aware that the medical crew is there.
- B) The aircraft may be fueled (cold) with a patient on board and a minimum of two medical crew members at the aircraft. Hot refueling is not authorized with a patient on board. The PIC will make final decision as to whether the patient and the crew will stay on the aircraft during the refueling process.
- C) A fire extinguisher will be available for immediate use when refueling with a patient on board and the helicopter will have a medical crew member at each exit.
- D) Hot refueling of the helicopter will be considered when saving time is essential. Procedures for Hot Fueling are found in Chapter 19, section 1907 of this GOM. The Pilot will stay at the controls for the refueling process.
- E) Service of the O2 will not be done simultaneously when the aircraft is being fueled.

### 37.5 Flight Time and Rest Requirements

EHA Pilot personnel will follow FAR 135.267(b) "Flight time limitations and rest requirements. Unscheduled one- and two-pilot crews" for all air ambulance operations.

Flight crewmembers must receive at least 10 consecutive hours of rest during the 24 hour period that precedes the planned completion of the assignment, and not exceed 8 hours of flight time during that period.

FAR 135.271 "Helicopter hospital emergency medical evacuation service (HEMES) will not be considered for EHA air ambulance operations.

### 37.6 Flight Locating Procedures

For Air Ambulance operations, to ensure communications with and location of helicopters at all times, the flight coordinator will maintain a flight plan that will consist of the following:

- 1) Departure point
- 2) Destination
- 3) Estimated time enroute
- 4) Fuel on board
- 5) Number of persons on board

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Pilots will ensure that position reports will be made at least every 15 minutes to the communications center unless hospital program procedures are less (ie. 10 min).

If the aircraft is going into a known area where there may be a short delay in position reports, prior to loss of communications transmit the route and expected time to next position.

If unable to close the flight plan by radio on final approach to a scene or facility, contact must be made by cell phone, sat phone or ground to close flight plan.

If the aircraft is overdue, the flight coordinator will execute the overdue aircraft plan or the Post Accident / Incident Plan (PAIP) as appropriate. The flight-following facility will have a trained, dedicated flight coordinator monitoring the radios with written instructions to follow in the event of an overdue or lost aircraft.

For additional flight locating procedures, refer to Chapter 11 of this GOM.

### **37.7 Air Ambulance Landing Zone Procedures**

If dispatched to other than approved landing areas, extreme caution and judgement shall be exercised by the PIC.

#### **Day-time scene operations**

For landing to emergency scene sites in remote areas inaccessible to emergency personnel, the PIC after evaluation of available information may accept requests for these flights and upon reaching the site the PIC will utilize high and low recon flight procedures over the site to plan and chose an adequate landing site that will ensure security and safe flight operations while accomplishing the mission.

For landings at other emergency scene sites where the site is secured and defined by emergency personnel who can assist in the security and defining of the landing area, the PIC shall establish communications in order to exchange information concerning the landing site requirements and instructions.

The following procedures will be accomplished by the PIC at all emergency scene sites:

- A) The PIC shall execute a high recon flight over the LZ to locate obstructions and to insure that the landing site is adequate and to plan an approach and landing route with a planned abort path.
- B) The PIC will then execute a low recon during a steep approach to the LZ considering the best approach path and allowing for further recon of the area before committing to landing.

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- C) If the PIC accepts the LZ, than the pilot must use extreme caution and judgement to ensure safe operation with a planned route for missed approach and aborted landing go-around.
- D) The PIC may utilize the aid of the medical attendants to clear the area on the opposite side of the pilot station to ensure adequate clearance and site security before landing. The final responsibility for the determination of the suitability of the landing site remains with the PIC.
- E) After landing and shut down, the PIC will exit the aircraft if possible to make a ground recon of the intended departure area to further assess the location of obstructions and site security.
- F) On departure, helicopter performance and density altitude permitting, the PIC will execute a maximum performance take-off to an altitude of 50 feet above the highest known obstruction or 150 feet AGL, whichever is higher. Extreme caution must be used in the planning of the take-off path if the max performance climb altitude is not possible.

### Night-time scene operations

The PIC shall use all available means of communication to communicate with site personnel prior to arrival over the site or utilize relayed information to insure that the LZ site is adequate for the operation and clear of obstructions and that the area is clear of bystanders.

The PIC will abort the flight to the emergency scene site if communications cannot be established or is lost, or on arrival the PIC cannot adequately communicate with ground personnel to ensure the security and management of the LZ area.

Landing to emergency scene site at night may be executed if the landing area is marked by flares, vehicle lights, or other light sources which will provide for adequate illumination of the area and obstructions provided:

- A) Aircraft additional lighting must be installed and operational.
- B) The PIC shall execute a high recon over the LZ to locate obstructions and to plan an approach and landing route with a planned abort path if PIC choses not to accept landing at the site. Communications with on-site personnel will be used to ensure location of obstructions and the security of the site for landing. Extreme caution must be used to ensure clearance from obstructions in this phase.
- C) The PIC may instruct the ground personnel to use additional lights to illuminate any obstructions but must ensure that the lights do not create a blinding effect during the flight operations.
- D) During the high recon of the LZ, further confirm that the site is acceptable and make final selection of an approach path using extreme caution to ensure clearance with obstructions. The PIC will also communicate with ground personnel to ensure that the LZ is secure for landing.
- E) The PIC will than execute a final low recon during a steep approach to the LZ for acceptance of the site for landing.

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- F) The PIC may utilize the aid of the medical attendants to clear the area on the opposite side of the pilot station to ensure adequate clearances and site security before landings. The final responsibility for the determination of the suitability of the landing site remains with the PIC.
- G) If the PIC accepts the landing site as an acceptable landing area, than use of extreme caution and judgement must be exercised for the final phase of the landing with a planned missed approach or aborted landing go-around.
- H) After landing and shut down, the PIC will exit the aircraft if possible in order to make a ground recon of the intended take-off and departure area to further confirm the location of obstructions and site security. At the PIC's discretion, ground personnel may be utilized to assist in the survey with additional lights to aid in the planning for departure.
- I) Upon departure, helicopter performance and density altitude permitting, the PIC will execute a maximum performance takeoff to an altitude of 50 feet above the highest known obstruction or 150 feet AGL whichever is higher.

### 37.8 Hot Loading and Unloading of Patient

Loading and unloading of patients while the aircraft is still operating (ground or flight idle) can be accomplished only when the medical crew determines that a true emergency exists with the patient. The following guidelines will be followed:

- 1) Must be in controlled environment
- 2) PIC must approve
- 3) Pilot must remain at the controls
- 4) Minimum amount of external help to load patient utilized
- 5) Safety is the most important factor when the decision is made to hot load.
- 6) Must be necessary
- 7) PIC and medical crew briefing and review of landing site accomplished prior to hot load/unload.

### 37.9 Patient Safety

All patients will be secured to the litters by safety belts provided. In addition, at the discretion of the medical crew, the following types of patients may require additional restraints:

- 1) Psychiatric patients
- 2) Head injury patients
- 3) Patients with known disorders
- 4) Intoxicated patients or those under the influence of psychotropic agents.
- 5) Overdose patients
- 6) Attempted suicide patients
- 7) Any patient that might represent a danger to the aircraft, crew or themselves.

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Any patient who is in the custody of a law enforcement agency may additionally be restrained at the discretion of the law enforcement officer. A law enforcement officer must accompany the patient on the flight if the patient must be restrained due to security reasons.

Family members or other persons normally are not permitted to accompany a patient during the flight. Exceptions to this may be authorized by the medical crew with concurrence by the PIC if determined to be beneficial to the patient.

The PIC shall have final authority and is directly responsible for the operation and safety of the aircraft.

### **37.10 Medical Attendant Responsibilities**

- A) All medical attendants who routinely fly must receive an aircraft and operations orientation that is designed to introduce the attendant to air ambulance missions and shall include safety awareness training, operating standards, emergency training, equipment usage, and communications.
- B) Flight training prior to an actual air ambulance mission assignment shall be completed to reinforce training and to develop crew coordination.
- C) Medical attendants will be responsible for actions and safety of patients in and around the aircraft.
- D) Medical attendants are responsible for checking all medical equipment for serviceability and security when coming on duty and before each flight.
- E) Medical attendants may assist the pilot in clearing the aircraft on their side of the aircraft while landing and taking off from landing sites. The final responsibility for the determination of the suitability of the landing site remains with the PIC.
- F) Medical attendants will remain seated and have seat belts secured during take-off and landing phases..
- G) Medical attendants will advise the pilot before performing defibrillation on a patient. In the interest of safety, the pilot may request defibrillation be delayed.
- H) When a medical emergency is in progress, the medical crew will not inform the pilot of the nature of the emergency, but may request "lifeguard" call sign utilization (refer to AIM 4-2-4.b).
- I) Medical attendants will aid the pilot in directing ground personnel safely in and around the aircraft when it is running during ground operations.
- J) Medical attendants will be responsible for restock, interior cleaning, and readying aircraft for service after each flight for medical purposes.
- K) Medical attendants are responsible to perform the decontamination procedures for the protection from and control of infectious conditions in the aircraft. The PIC will be responsible for ensuring compliance.

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### 37.11 Medical Oxygen Procedures

The following are medical oxygen procedures for aircraft operated by EHA in air ambulance operations:

- A) Prior to each flight, all oxygen equipment shall be inspected by the medical attendant for general condition, security and pressure in the tanks.
- B) Oxygen bottles shall be securely fastened to the airframe, Spectrum or Lifeport litter system, or unoccupied litter during all phases of flight.
- C) During ground operations, unsecured oxygen bottles shall not be set on end.
- D) No smoking will be allowed in or around the aircraft when oxygen equipment is installed and/or when in use.
- E) Petroleum products or lubricants shall not be used on any oxygen equipment. Petroleum products shall not be allowed in the areas where oxygen is stored or is being used.
- F) All stowed equipment in the cabin or baggage areas must be secured in such a way as to not damage the oxygen system.
- G) An oxygen bottle installed in a rack in the cabin area having its own regulator, hose and mask feeding directly to the patient may be removed and serviced by any person trained by EHA.
- H) If servicing is accomplished by removing and replacing bottles or by disconnecting lines, regardless of the type fitting, it must be accomplished by an appropriately certified mechanic or repairman.

### 37.12 Shift Change Briefing

The pilot coming on duty shall receive a shift change briefing from the out-going pilot concerning the following:

- 1) Aircraft status (such as fuel, maintenance discrepancies, etc.)
- 2) Anticipated flights
- 3) Hazard updates
- 4) Schedule changes
- 5) Name and location of relief pilot if applicable
- 6) Any other special circumstances

### 37.13 Hazard / Landing Site Information

Any uncharted hazards in the local flying area that may impair low flight or offsite landings will be depicted in the Hazard / Landing Site Information manual established at the flight planning room at the hospital base with a copy at EHA operations.

The above referenced hazards will also be noted on the local flying area map at both locations.

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Any additional landing site information for heliports routinely used by the hospital program, such as hospital helipads, designated landing areas, etc., will be photographed, and/ or diagramed and updated as necessary for additional preflight information.

### 37.14 Patient Loading and Unloading / EMS Airplane

(A) The patient loading and unloading operations shall be conducted under the supervision of the PIC who will normally participate in loading and securing the patient for flight.

(B) No aircraft shall be left unattended while passengers are on board.

(C) Normal operations require the aircraft engines to be shutdown prior to any loading/unloading operation. Occasionally it may be necessary due to weather conditions to keep an engine running while parked on the ground.

(D) The following procedures require a two pilot crew and will be followed when Off-Onload with engine running:

- 1) The number 2 engine (running at low rpm) is the operating engine when it is necessary to keep an engine running during off-onload.
- 2) Park the aircraft with operating engine on side away from off-onload area (ie. passenger terminal, waiting ambulance, etc).
- 3) Position the aircraft to ensure prop blast will not be a hazard to personnel, other aircraft, vehicles, ground equipment or windows.
- 4) If able, chock the nose gear.
- 5) Do not release parking brake.
- 6) Turn anti-collision lights – ON.
- 7) For night operation, turn leading edge & navigation lights – ON.
- 8) Brief all crewmembers and medical crew on their duties and responsibilities in this procedure.
- 9) Ensure one pilot seat is occupied at all times and the seated pilot monitors the following:
  - a) Brakes (parking brake remains – SET with no aircraft movement).
  - b) Operating engine (temperatures & pressures, etc)
  - c) Communication with engine guard if applicable by radio or hand signal.
- 10) Ensure that each member of the loading crew is aware of the hazards of loading/unloading with an engine running.
- 11) Constantly be aware of their position and position of others in relation to the propeller and blast area.
- 12) Avoid passing behind the operating engine.

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- v) The NVG's should not be left unattended at any time. This does not prohibit brief periods away from the aircraft on scene flights or during patient loading or unloading. In these circumstances, efforts shall be made to insure that the aircraft is not completely unattended.

### Crewmember Responsibilities

#### a) Pilot

##### i) Duties, Responsibilities, and Authority

###### (1) Conduct crew briefing prior to each shift, including:

- (a) General weather conditions.
- (b) Light discipline
- (c) Confirm that the NVG equipment has been preflighted and there are no restrictions to HNVGO.

###### (2) Conduct crew briefing prior to each flight, including:

- (a) Weather conditions for the flight route.
- (b) Obstacles and significant terrain along the route of flight.
- (c) Using crew resource management principals, encourage the crew to use inquiry as necessary to maintain crew situational awareness.

###### (3) Insure that the NVG's are stored in a safe and secure area when not in use. The NVG's should not be left unattended at any time.

##### ii) Logging HNVGO's

###### (1) Pilots shall maintain a log of HNVGO's on EHA Flight and Duty Time Log. Tracking of NVG currency will be a continuous 60 day review.

###### (2) An HNVGO, for the purpose of recency of experience, must include the following maneuvers wherein the pilot is the sole manipulator of the flight controls during the period beginning 1 hour after sunset and ending 1 hour before sunrise (as published in the Air Almanac):

- (a) Aircraft and Night Vision Google (NVG) Visual Inspection and Operation Check.
- (b) Before Takeoff – NVG Check
- (c) Takeoff

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- (d) Arrival – At Objective Area Initial Reconnaissance.
- (e) Landing
- (f) Departure – Transitioning from unaided to aided.
- (g) Transitioning from aided to unaided.

### iii) Training and Qualification

- (1) No pilot may fly in HNVGO carrying passengers unless he/she is qualified and current in NVG operations. A pilot may fly in HNVGO without passengers in order to obtain NVG currency as described in 5) iv) **Recency of Experience**.
- (2) No pilot may fly in HNVGO unless, during the preceding 12 calendar months, he/she has completed an approved NVG Initial or Recurrent Qualification ground and flight training.
- (3) Initial and recurrent qualification will be approved and documented by a NVG qualified instructor.

### iv) Recency of Experience

- (1) No person may act as a pilot in command using night vision goggles with passengers on board unless, within the preceding 60 days, that person performs and logs three HNVGO's as described in 5) a. ii) (2) above.
- (2) No person may act as a pilot in command using night vision goggles *with passengers on board*, unless, within the preceding 120 days, that person performs and logs three HNVGO's as described in 5) a. ii) (2) above.

**NOTE**

This paragraph provides an additional 60 days for a pilot to regain recency of experience should their recency lapse.

### (3) Night Vision Goggle Proficiency Check

- (a) A person who does not meet the night vision goggle experience requirements of paragraphs 5) a. iv) (1) or (2) of this section may not act as pilot in command using night vision goggles until that person passes a night vision goggle proficiency check. The proficiency check must be performed in the category of aircraft that is appropriate to the night vision goggle operation the person is seeking or in a flight simulator or flight training device that is representative of that category of aircraft and that has been approved for NVG training. The check must consist of the tasks listed in the EHA NVG training program, and the check must be performed by:

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- (i) An examiner who is qualified and current to perform night vision goggle operations in that same aircraft category and class;
- (ii) A EHA company check pilot who is authorized to perform night vision goggle proficiency checks;
- (iii) An authorized flight instructor who is qualified and current to perform night vision goggle operations in that same aircraft category and class;
- (iv) A person approved by the Administrator to perform night vision goggle proficiency checks.

### **(b) Non-Pilot Crewmembers**

#### (i) General

1. Personnel who have in flight duties, such as medical responsibility, obstacle clearing, non-ATC communications responsibilities, and HNVGO tasks are crewmembers for the purpose of these operations with the designation of "Additional Personnel" for FAA purposes. They shall be trained, qualified, and current prior to performing these duties. This training shall be documented, and the training records as well as HNVGO currency records shall be maintained by EHA.

#### (ii) Duties, Responsibilities, and Authority

1. Participate in crew briefings prior to each shift, including;
  - a. Being familiar with the general weather conditions.
  - b. Maintain light discipline.
  - c. Confirm that the NVG equipment has been preflighted know any restrictions to HNVGO.
2. Participate in crew briefings prior to each flight, including;
  - a. General knowledge of the weather conditions along the route of flight.
  - b. General knowledge about obstacles and significant terrain along the route of flight.
  - c. Use crew resource management principles to maintain crew situational awareness.

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### (iii) Training and Qualification

1. No person may act as a non-pilot crewmember in HNVGO carrying passengers unless he/she is qualified and current in NVG operations. A non pilot crewmember may fly in HNVGO without passengers in order to obtain NVG currency as described in paragraph 5) iv) **Recency of Experience**.
2. Initial and recurrent qualification will be approved and documented by a NVG qualified instructor.

### (iv) Recency of Experience

1. No person may act as a non pilot crewmember in HNVGO unless, in the preceding 60 days, that person has accomplished either of the following;
  - a. Completed initial or recurrent NVG training in accordance with the EHA NVG training program.
  - b. Completed three HNVGO's.

## Flight Operations

### (a) Preflight and Departure

#### (i) Area of Operations

1. No change from the GOM.

#### (ii) Route Planning

1. When HNVGO is to be conducted, route planning shall include;
  - a. The potential impact of terrain, obstacles such as wires and towers, and other significant features to the flight.
  - b. Escape routes if unanticipated weather is encountered.
  - c. Alternate routes if NVG failure occurs.
  - d. Other preflight planning information as required by the GOM.

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### (iii) HNVGO Ceiling and Visibility Requirements

1. The Visual Flight Rules (VFR) listed in A050 Operations Specifications shall apply.
2. At no time **shall NVG's** be utilized to continue flight into weather minimums **below those** listed in A050 Operations Specifications.

### (iv) Fuel Requirements

1. No change from the GOM.

### (v) Briefing of Passengers

1. When practical, passengers shall be briefed that the crew will utilize NVG equipment during flight.

### (vi) Equipment Requirements (NVG Flights)

1. To conduct HNVGO, the following equipment must be on the aircraft and fully operational;
  - a. Approved NVG cockpit and (if required) cabin lighting.
  - b. NVG's for required crewmembers, as appropriate.
  - c. Radar Altimeter
  - d. Other equipment for night flight as specified in the GOM.

## (b) Enroute

### (i) Helicopter Surface Reference

1. The aircraft shall not be operated under VFR unless the pilot has visual surface reference or, at night, visual surface light or aided reference, sufficient to safely control the helicopter.

## (c) Crew Concept

- (i) The pilot will ensure all crewmembers are on their duties and responsibilities.
- (ii) The pilot will communicate properly with crewmembers during flight and respond to crewmembers voice calls/commands accordingly.

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1. Pilot In Command: The person designated as PIC is directly responsible for, and is the final authority as to, the operation of the aircraft. He is expected to utilize all available resources in reaching a final decision. The PIC shall require participation by any non-pilot crewmember who is utilizing NVG.
2. Non-Pilot crewmember (HNVGO): A person designated as a non-pilot crewmember is responsible to act as directed by the pilot in command. The crewmember shall participate in the decision making process by offering timely suggestions, and opinions. Further, he shall critique a faulty decision, or advocate a different position if necessary to insure the safety of the flight. When not engaged in HNVGO duties, the non-pilot crewmember reverts to his other assigned duty such as medical attendant.

### (d) Sterile Cockpit

- (i) No change from the GOM.

### (e) Light Discipline

- (i) When conducting HNVGO, no lighting shall be utilized which interferes with NVG operations.
- (ii) Interior lights may be utilized if they are NVG compatible or are properly isolated from the crew.
- (iii) Use of landing and search lights will be as required by conditions.
- (iv) The PIC may determine that, in the interest of safety due to operating conditions, the anti-collision light(s) may be turned off, as per CFR 14 PART 91.209.

### (f) Crew Callouts

- (i) Crews shall use standard or generally accepted aviation terminology during critical phases of flight. The pilot in command will ensure that all crewmembers understand these terms prior to HNVGO.
- (ii) Examples of standard terminology are;
  1. Go Around: Means to immediately discontinue the approach and climb clear of the landing area.
  2. Abort the Takeoff: Means to immediately discontinue the takeoff and bring the aircraft to a full stop.

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3. Move left, right, forward, aft: Means to move the aircraft in the stated direction without turning the nose/tail of the helicopter about the main rotor mast.
4. Turn the tail left or right: Means perform a pedal turn in the stated direction, with the tail of the helicopter to move in the stated direction.

### NOTE

All directional movements are assuming a view from the pilot seat looking forward.

### Emergency Procedures

#### (a) Inadvertent IMC

- (i) Initiate the inadvertent IMC recovery procedure as described in the GOM.
- (ii) Transition to unaided flight.

#### (b) NVG Equipment Malfunction

- (i) Announce "Goggle Failure".
- (ii) Switch to the secondary (left) side of the battery pack. If vision is not restored, flip up the NVG's (stow position), and continue the flight in the unaided mode.

### Maneuvers

- (c) Flight maneuvers are conducted in the same manner as described in the GOM, Maneuvers section, and in accordance with the procedures in the EVERGREEN HELICOPTERS OF ALASKA, INC. training program.

### Reports and Forms

#### (d) Training forms

- (i) See the EHA Training Manual.

#### (e) NVG Maintenance and Inspection Log

- (i) To be completed by the pilot or non-pilot crewmember.

### NVG Instructors

- (f) A flight instructor may not conduct pilot or non-pilot crewmember training for Night Vision Goggle Operations unless that flight instructor:

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- (i) Has a pilot and flight instructor certificate with the applicable category and class rating for that night vision goggle training;
- (ii) If appropriate, has a type rating on his or her pilot certificate for the aircraft;
- (iii) Has logged at least 100 HNVGO's as the sole manipulator of the controls;
- (iv) Is current and qualified to act as a pilot in command in night vision goggle operations and;
- (v) Has a logbook endorsement from an FAA Aviation Safety Inspector or a person who is authorized by the Administrator to provide that logbook endorsement stating the flight instructor is authorized to perform the night vision goggle pilot in command qualification and recency requirements.

### Definitions

- (g) **Aided night flight** is a flight where the pilot uses night vision goggles to maintain visual surface reference in an aircraft.
- (h) **Night Vision Goggles (NVG)** is an appliance worn by a pilot that enhances the pilot's ability to maintain visual surface reference at night.
- (i) **Helicopter Night Vision Goggle Operation (HNVGO)** is a flight at night where the pilot maintains visual surface reference utilizing night vision goggles in an aircraft that is approved for night vision goggle operations
- (j) **Unaided night flight** is a flight at night where the pilot either does not use night vision goggles or the night vision goggles are in a non-operational position.