301 - III - HELICOPTER OPERATIONS

1. Helicopter Fuel Requirements

A. Day VFR Helicopter Fuel Supply Requirement

1) Prior to flight, enough fuel must be put on board to fly to the first point of intended landing and, assuming normal cruising fuel consumption, to fly after that for at least 20 minutes.

B. Night VFR Helicopter Fuel Supply Requirement

1) Prior to flight, enough fuel must be put on board to fly to the first point of intended landing and, assuming normal cruising fuel consumption, to fly after that for at least 20 minutes. However;

2) If weather of 2000 and 5 miles or less exists, or thunderstorms are forecast along the route of flight; and is forecast to remain so 1 hour before and after destination ETA; then enough fuel must be put on board to fly to the first point of intended landing and, assuming normal cruising fuel consumption, to fly after that for at least 30 minutes.

C. IFR Helicopter Fuel Supply Requirement

1) Prior to flight enough fuel must be put on board to fly to the first point of intended landing and alternate if required, to fly after that for at least 30 minutes at normal cruising speed.

2. Helicopter IFR Operations

A. General

1) All IFR operations will be conducted in accordance with the appropriate provisions of this manual, all applicable requirements of Metro Aviation Operations Specifications, and all applicable FARs.

2) Operations may be conducted when the following criteria are met:

a. The aircraft is properly equipped according to the requirements of FAR 135.163, is certified for IFR operations and meets Metro Aviation Operations Specifications as appropriate. See special equipment requirements for IFR operations at locations without weather reporting in Paragraph D of this section.

b. The Pilot-in-Command has fulfilled the training requirements described in Paragraph B of this section and has been assigned IFR duties by the Chief Pilot.

c. Required weather minimums exist.

B. Training Requirements

1) Prior to conducting any IFR operation, the pilot must have successfully completed all training and checking requirements of the Metro Aviation pilot training program. Additional training is required to conduct any approach or departure procedure listed in Metro Aviation Operations Specification H122, *Special Non-CFR Part 97 Instrument Approach or Departure Procedure for Rotorcraft Operations*.

C. Flight Planning

1) Pilots will utilize the Metro-IFR Planning Form found in Appendix I of this manual.

2) IFR flights will only be conducted to or from aircraft or heliports that pass U.S. National Weather Service approved weather reporting, except as provided in Paragraph D. These facilities must be in service and operational during th e time of the IFR operation.

3) For VFR segments, the flight planning requirements of Section 10, VFR Flight Planning (this chapter) apply.

4) Alternate airport selection must meet the requirements of FAR 135.221 and 135.223.

D. IFR Operations at Locations Without Weather Reporting

NOTE: Operations described in this paragraph require the aircraft to be equipped with onboard severe weather detection equipment (radar and/or lightning strike detection).

1) Pilots may conduct IFR operations at airports or heliports at which a weather report from the National Weather Service (NWS), a source approved by the NWS, or a source approved by the FAA, is not available. These operations are subject to the following limitations and are in accordance with FAR 135.611:

a. The pilot may obtain a weather report from the NWS, a source approved by the NWS, or a source approved by the FAA that is located within 15 nautical miles of the airport.

b. If a weather report is not available with 15 nautical miles, the pilot may use an area forecast from the NWS, a source approved by the NWS, or approved by the FAA.

c. Flight planning for these operations must include a selection of alternates that meet the requirements of 135.221 and 135.223.

d. The pilot may depart on an IFR clearance from the surface, at heliports that are not served by weather reporting, providing the heliport is served by a departure procedure, Standard Instrument Departure (SID) or Obstacle Departure Procedure (ODP) containing ODP and takeoff minimums, and the pilot determines the weather at the departure point meets or exceeds the published takeoff minimums. The flight may depart and proceed visually in accordance with the instructions contained in the DP. See Paragraph E of this section for further information on IFR Transitions.

E. IFR Transitions

1) Approaches

a. When executing Point-in-Space (PinS) Copter approaches that include a “proceed visually” transition, the flight will remain under IFR from the missed approach point (MAP) to a served heliport and the transition must be conducted in accordance with the ceiling and visibility limitations published in the PinS Copter Instrument Approach Procedure (IAP).

b. When executing PinS Copter approaches that include a “proceed VFR” segment between the MAP and a served heliport, flights must be conducted in accordance with the following ceiling and visibility limitations:

i. If the distance from the missed approach point to the landing area is 1 NM or less, flight visibility must be 1 statute mile and ceiling stated on the approach chart applies.

ii. If the distance from the missed approach point to the landing area is 3 NM or less, the applicable VFR weather minimums are:

1. Day - No less than 600 ft ceiling and 2 statute miles flight visibility

2. Night - No less than 600 ft ceiling and 3 statute miles flight visibility

c. For all other approaches regardless of the distance from the missed approach point to the landing area, the following ceiling and visibility requirements apply:

i. Class G Airspace - Refer to Table 1, “Weather Minimums” of this section

ii. All other Airspace:

1. Day - No less than 600 ft ceiling and 2 statute miles flight visibility.

2. Night - No less than 600 ft ceiling and 3 statute miles flight visibility.

2) Departure

a. An IFR clearance and departure procedure with “proceed visually” text is not considered a VFR maneuver and is not subject to the Class G weather limitations stated in this section, unless the pilot is specifically instructed by ATC to maintain VFR. For this type of departure, the weather must meet or exceed the published “takeoff minimums” contained in the DP.

b. When departing VFR from heliports with the intent of acquiring an IFR clearance at or before reaching a predetermined point, usually the Initial Departure Fix (IDF) not more than 3 nautical miles (NM) from the departure point, the flight must be conducted in accordance with the DP instructions and the following ceiling and visibility limitations:
   i. If distance from Initial Departure Fix is 1 nautical mile or less, flight visibility must be at 1 statute mile and ceiling as published.
   ii. If distance is beyond 1 nautical mile up to 3 nautical miles, the following weather minimums apply:
      1. Day - no less than 600 ft. ceiling and 2 statute miles flight visibility
      2. Night - no less than 600 ft. ceiling and 3 statute miles flight visibility

c. Departures that involve a VFR to IFR transition that have no published departure procedures, and/or the distance between the departure point and the IDF exceeds 3 NM, the flight must be conducted in accordance with the following VFR ceiling and visibility limitations:
   i. Class G Airspace - Refer to Table 1, "Weather Minimums" of this section.
   ii. All other Airspace:
      1. Day - No less than 600 ft ceiling and 2 statute miles flight visibility.
      2. Night - No less than 600 ft ceiling and 3 statute miles flight visibility.

3. Local Flying Areas

A. Local Flying Areas are those areas in which the pilot has demonstrated a level of familiarity which allows the use of lower VFR operating minima. Local flying areas are defined in Table 2 of Operations Specification A021.

1) Local flying area minima may only be used by pilots who have passed an examination on the appropriate local flying area within the previous 12-months. This examination must be conducted in accordance with the local area pilot knowledge testing procedure. Pilots may be qualified for more than one local flying area.

2) Any flight outside a local flying area is a cross-country operation. Pilots who have not passed such a knowledge test on a particular local flying area within the previous 12 calendar months, regardless of operational experience in that area, must use the cross-country minima in the weather minimums Table when operating in that area.

4. Local Area - Hazard Maps

A. Lead Pilots will develop a hazard map that is unique to the local flying area for the base. Each map should be annotated with known hazards that are not already depicted (see example content below). VFR sectional charts are well suited for this purpose, but should be laminated to make annotation easier. The map should cover no less than a 75 nautical mile area from the base location. A revision log will be posted next to the map to provide a chronological history of items added/removed. Hazards that are no longer present should be "lined out" on the revision log. The map and log of revisions will be posted in or very near the pilot's flight planning area.

Recommended Hazard Map Content:

- Highest obstacle data by segment/quadrant
- TFRs
- Towers not already depicted on the map
- High voltage power lines; even if already depicted, calling attention to long spans or wires that are near typical landing areas can greatly increase hazard awareness
- UAV or model aircraft operations area

- Preferred VFR routes/noise abatement routes
- Temporary construction sites or cranes
- High density areas of other low flying aircraft (i.e., VFR training areas)

The content above is recommended; however, the inclusion of any potential hazard should be included.

5. NVG Operations

This section 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.

A. Definitions

Night vision goggles (NVG) is an appliance worn by a pilot that enhances the pilot's ability to maintain visual surface reference at night.

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.

Aided night flight is a flight that begins 1 hour after sunset and ends 1 hour before sunrise where the pilot uses night vision goggles to maintain visual surface reference in an aircraft.

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.

B. Airworthiness and Maintenance

1) Aircraft Preflight
   a. Confirm proper operation of NVG lighting.
   b. Ensure windscreen/windows are clean and free from defects which might degrade visual acuity.
   c. Minimum Equipment List - Check for deferred items critical to night flight.
2) Night Vision Goggle Preflight
   a. Check the Night Vision Goggle Maintenance and Inspection Log for unresolved discrepancies and current inspection.
3) NVG Documentation
   a. Each NVG Goggle will have the following documentation in the storage case:
      i. A current serviceable (yellow) tag containing the following information:
         1. Identifying specific goggle by part number and serial number
         2. Description of the last inspection or maintenance performed
         3. Date of return to service
      ii. Night Vision Goggle Maintenance and Inspection Log with the following information:
         1. NVG serial number
         2. Name of equipment
         3. The issue, inspection or repair needed
         4. Date of discovery
         5. Date and type of corrective action
         6. Date of next inspection due

iii. White card inside the soft case cover with the following information:
1. NVG identification
2. Date of next inspection due

b. NVG preflight IAW user manual.
i. Remove inoperative goggles from the aircraft.

4) Reporting of NVG Equipment Discrepancies.
a. The person (pilot or non pilot crew member) will record the discrepancy on the Night Vision Goggle Maintenance and Inspection Log,
b. The NVGs will be turned over to the appropriate maintenance facility for repair or testing, and equipment is not used until the discrepancy is cleared by authorized maintenance personnel.

C. Crew Member Responsibilities
1) Pilot
a. Duties, Responsibilities, and Authority
i. Conduct crew briefing prior to each flight to include:
1. Weather conditions for the flight route.
2. Obstacles and significant terrain on the flight route.
3. Using crew resource management principles, encourage the crew to use inquiry as necessary to maintain crew situational awareness.
ii. Perform those duties as described in the General Operations Manual (GOM), Line Pilot duties and Responsibilities section.

b. Logging NVG Operations
i. Pilots will log HNVG operations on their flight and duty log.
ii. HNVG operations will be logged to meet the NVG Operating Experience requirements of item (d) below.

c. Training and Qualification
i. Pilots must have satisfactorily completed the appropriate initial or recurrent NVG training program IAW Metro Aviation's Training Manual.
ii. No pilot may fly in HNVGO carrying passengers unless he is qualified and current in NVG operations. A pilot may fly in HNVGO without passengers in order to obtain NVG currency as described in item (d) below, Night Vision Goggle Operating Experience.

d. Night Vision Goggle Operating Experience
i. A person may act as Pilot-in-Command in a night vision goggle operation with passengers on board only if, within 2 calendar months preceding the month of the flight, that person performs six night vision goggle operations, within these 6 NVGO's the following tasks will be accomplished as the sole manipulator of the controls on a flight during a night vision goggle operation:
1. Three takeoffs and three landings, with each takeoff and landing including a climbout, cruise, descent, and approach phase of flight (only required if the pilot wants to use night vision goggles during the takeoff and landing phases of the flight).
2. Three hovering tasks (only required if the pilot wants to use night vision goggles when operating helicopters or powered-lifts during the hovering phase of flight).
3. Three area departure and area arrival tasks.
4. Three tasks of transitioning from aided night flight (*aided night flight* means that the pilot uses night vision goggles to maintain visual surface reference) to unaided night

flight (*unaided night flight* means that the pilot does not use night vision goggles) and back to aided night flight.

NOTE: A pilot who is conducting HNVGO in order to maintain or regain NVG Operating Experience shall be accompanied by either;

(a) An authorized and current company NVG instructor,
(b) An NVG qualified and current Metro Aviation pilot,
(c) An NVG qualified and current non-pilot crew member/observer.

ii. A person who does not meet the night vision goggle experience requirements above, within the 4 calendar months preceding the month of the flight, may not act as Pilot-in-Command using night vision goggles until that person completes a night vision goggle proficiency check.

D. Night Vision Goggle Proficiency Check

1) A person who does not meet the night vision goggle experience requirements of item 4 above may not act as Pilot-in-Command using night vision goggles until that person completes 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. The check must consist of the tasks listed in the Metro Aviation NVG training program, and the check must be performed by:

a. An examiner who is qualified and current to perform night vision goggle operations in that same aircraft category and class;

b. A Metro Aviation check pilot who is authorized to perform night vision goggle proficiency checks;

c. An authorized flight instructor who is qualified and current to perform night vision goggle operations in that same aircraft category and class;

d. A person approved by the Administrator to perform night vision goggle proficiency checks.

E. Non-pilot Crew Members/NVG Observers

Personnel who have in flight duties, such as medical responsibility, obstacle clearing, non ATC communications responsibilities, and HNVGO tasks are crew members for the purpose of these operations. They shall be trained, qualified, and current prior to performing these duties. This training shall be documented, and the training records shall be maintained by Metro Aviation. A list of qualified “NVG Observers” will be maintained in Metro Aviation, Inc. headquarters in Shreveport, LA.

1) Duties, Responsibilities, and Authority

a. Participate in crew briefing prior to each flight to include:

i. Have general knowledge of the weather conditions for the flight route.
ii. Maintain light discipline.
iii. Have general knowledge about obstacles and significant terrain on the flight route.
iv. Using crew resource management principles use inquiry as necessary to maintain crew situational awareness.
v. Confirm that NVG equipment has been checked and know any restrictions to HNVGO.

b. Perform duties as assigned by the PIC.

2) Logging NVG Operations

a. NVG Observers will track Night Vision Goggle operating experience on form MAI-NVG-001 of an alternate computerized tracking system.

3) Training and Qualification

a. No person may act as an NVG Observer in HNVGO carrying passengers unless he is qualified and current in NVG operations.

b. Initial qualification will be conducted by a qualified NVG Instructor or Check Airman IAW Metro Aviation training manual.

4) Night Vision Goggle Operating Experience

a. No person may act as an NVG Observer in HNVGO carrying passengers, unless in the preceding 90 days, that person has completed three NVG operations as defined below:

i. NVG Visual Inspection and operational check.

ii. An arrival using a area reconnaissance.

iii. A takeoff using NVGs.

iv. A landing using NVGs.

b. An NVG Observer may fly in HNVGO without passengers in order to obtain NVG Operating experience.

F. Flight Operations

NOTE: Unless addressed below, there is no change to the General Operations Manual.

1) Preflight and Departure

a. Operational Restrictions

i. Landings to unimproved areas require a minimum crew of pilot and one other crew member/NVG Observer utilizing NVGs.

ii. The pilot may use single NVG operations for take off from unimproved areas as long as a dual NVG crew accomplish a high and low reconnaissance, which must include the evaluation of egress route(s). Consideration must be given to any change in conditions (wind, obstructions, and weather conditions), since the time of reconnaissance.

b. Route Planning

i. When HNVGO is to be conducted, route planning shall include:

1. The potential terrain, obstacles such as wires and towers, and other significant features to the flight.

2. Escape routes if unanticipated weather is encountered.

3. Alternate routes if NVG failure occurs.

4. Other preflight planning information as required by the GOM.

c. HNVGO Ceiling and Visibility Requirements

i. The higher of the appropriate shall be utilized when conducting HNVGO;

1. Locally defined night minimums.

2. Ceiling and visibility per Table 1, "Weather Minimums" in the Helicopter Operations section of this manual.

d. At no time shall NVGs be utilized to continue flight into weather below the minimums.

2) En Route

a. Operational Restrictions

i. Pilots will maintain aided flight whenever they are outside their Local Flying Area or outside of urban lighted areas.

3) The restriction in (i) above does not prevent the pilot from unaided flight for the purposes of performing cockpit duties or from taking the brief unaided flight break to reduce eye fatigue when at a safe altitude and in stable flight.

4) Briefing of Passengers
   a. When practical, passengers shall be briefed that the crew will utilize NVG during the flight.
5) Equipment Requirements (Night NVG Flights)
   a. To conduct HNVGO, the following equipment must be on the aircraft and fully operational:
      i. The appropriate NVG compatible cockpit lighting.
      ii. At least the pilot and one other qualified and current crew member/NVG Observer must be using Operational NVGs for landing at unimproved areas.
      iii. A radar altimeter.
      iv. Other equipment for night flight as specified in the Flight Manual STC, MEL and Operations Manual.

G. Crew Concept
1) Crew Resource Management
   a. All crew members shall utilize CRM principles and procedures during the course of their flying duties.
   b. An aircraft conducting HNVGO, depending on the mission, may consist of a Pilot-in-Command or a Pilot-in-Command and an additional non pilot crew member.
      i. 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 may require participation by a non pilot crew member who is utilizing NVG.
      ii. NVG OBSERVER (HNVGO): The person designated as a NVG Observer is responsible to act as directed by the Pilot-in-Command. The NVG Observer shall participate in the decision making process by offering timely suggestions, and opinions. When not engaged in HNVGO duties, the NVG Observer reverts to his other assigned duty such as medical attendant.
2) Light Discipline
   a. When conducting HNVGO, no lighting shall be utilized which might interfere with proper NVG operation.
   b. Interior lights may be utilized if properly isolated from the NVG crew.
   c. Use of landing and search lights will be as required by conditions.

H. Emergency Procedures
1) Inadvertent IMC
   a. Initiate the inadvertent IMC recovery procedure as described in Section 301 - I - General.
   b. Transition to unaided flight as necessary.
2) NVG Equipment Malfunction
   a. Announce ***"GOGGLE FAILURE***."
   b. Switch to the second battery. If vision is not restored, flip up goggles (stow position) and continue flight in the unaided mode.
   c. If the route of flight is over an area where there is inadequate surface definition or lighting to maintain attitude reference, institute inadvertent IMC procedure and return to an area of adequate surface reference.
   d. At least the pilot and one other NVG qualified and current crew member/NVG Observer must be using operational NVGs to land at an unimproved site.

I. Reports and Forms
   1) Recency of Experience Form
      a. The recency of experience form MAI-NVG-001 shall be completed by the NVG Observer and kept on file at the base. An alternate computerized tracking system may be developed to track Night Vision Goggle operating experience.
      b. The pilot will log time and NVG operations (HNVGO) on the Flight Time and Duty Log.
   2) NVG Maintenance and Inspection Log
      a. Will be kept in the NVG case or available at the NVG storage area.
      b. To be completed by the pilot or NVG Observer.
      c. Use Metro Aviation form, NVG-150.

6. Offshore Helicopter Operational Procedures

A. VFR Operations –
   1) Single engine helicopters flying on day only operations must depart offshore location, assuming normal cruising speed to arrive at the onshore base by official sunset. If the RON locations are offshore, the flight must be planned to arrive no later than 30 minutes prior to official sunset.
   2) Single engine and multi-engine helicopters may operate offshore on VFR day operations only provided existing or forecasted weather for the duration of the flight meet the criteria in Table 1, "Weather Minimums" of this section.
   3) Multi-Engine helicopters may operate VFR offshore at night provided there is a two pilot crew, the crew is qualified for NVG operations, and the aircraft is approved and equipped for NVG operations. Visual ground/platform light reference, enough to properly control the helicopter, and existing or forecasted weather for the duration of the flight must meet Table 1, "Weather Minimums" of this section.
   4) Any deviation from 1) - 3) above must be approved on a case by case basis by the Director of Operations or Chief Pilot.

B. Fuel Requirements
   1) Prior to flights over water, enough fuel must be on board to fly to a refueling destination, then to another suitable alternate landing location, plus 30 minutes fuel reserve.
   2) Prior to reaching a point where there is not enough fuel on board the aircraft to fly to the nearest beach location and then another 30 minutes (in OEI conditions if multi-engine aircraft), the pilot will comply with the following:
      a. Verify that the destination and alternate landing sites are clear and available for landing,
      b. Verify, to the extent possible considering weather availability, that the destination and alternate are at or above weather minimums,
      c. Identify emergency landing options available for the continued route of flight.

C. Maximum Wind Speed for Offshore Helicopter Operations (unless further restricted by the RFM)
   1) 17 knots - for rotor blade tie downs.
   2) 30 knots - for helicopter tie down.
   3) 35 knots - for starting and stopping rotors.
   4) 45 knots - for flight operations.

D. ADIZ Procedures - All operations in the Gulf of Mexico will be in accordance with the most recent GOMEX Certificate of Waiver. Pilots will notify OCC prior to any operations beyond the southern boundaries of the GOMEX waiver area.

E. Operations on Vessels and Mobile Offshore Drilling Units (MODUs)

The following procedures and limitations apply when conducting operations to or from any motor vessel (ships, boats, barges under tow, etc.) or any mobile offshore drilling unit (MODUs).

1) Limitations:

a. Except for MODUs that are stabilized and anchored for drilling operations (such as semi-submersible drill ships), these operations are restricted to daytime only.

b. Flight planning shall not be dependent on obtaining fuel from a source on the mobile vessel or MODU. An alternate fuel source that meets offshore operations requirements must be available in case the decision to land on the vessel or MODU is aborted for any reason.

c. Landings shall not be attempted if pitch and roll exceeds 2.5 degrees either side of center, heave exceeds 10 feet, or heave rate exceeds one meter per second. Crews shall obtain pitch, roll, heave, and heave rate (if reported) prior to departure, and again when green deck or landing clearance is obtained. Landings shall not be attempted unless this information is known prior to landing.

d. Flight operations to or from motor vessel helidecks shall not be conducted when detectable rain is within, or the vessel appears likely to move within, five nautical miles (5 NM) of the rain.

e. Operations shall not be carried out if there is a likelihood of heavy sea spray on deck. The appearance of sea spray on the windshield is an indication that this condition is present.

f. The autopilot shall be disengaged during ground and helideck operations.

2) Procedures:

a. Prior to landing or departing any vessel (ships, boats, drill ships) or MODUs, positive communications shall be established with the appropriate vessel personnel, and clearance to land or takeoff shall be obtained. No landings should be attempted without radio communications with the landing vessel in question unless prior arrangements have been made with the vessel operator.

b. After landing, maintain operating RPM; do not allow medical crew to disembark until the aircraft has remained on the deck through a complete pitch and roll cycle, and it is apparent the exit can be accomplished safely. If sea, wind, and weather conditions permit, reduce the operating RPM to manufacturer's recommended ground operations speed. If conditions are not favorable to RPM reduction, maintain operating RPM and commence crew and patient loading/unloading operations.

c. Deviations from this policy must be authorized by the Director of Operations or Chief Pilot.

7. Offshore IFR Helicopter Operations

A. Pilots will have completed all required IFR Offshore training and experience requirements prescribed in the Metro Aviation, Inc. Training Manual. Helicopter Special Instrument Approach Procedures for offshore operations, listed in the Operations Specifications, will require special qualification as per the Metro Training Manual.

B. All IFR operations in the Gulf of Mexico (GOMEX) will be in accordance with the most current Letter of Agreement between Houston ARTC Center Offshore IFR Helicopter Operations and Metro Aviation Inc. concerning Offshore and Coastal Helicopter Operations.

C. En Route Navigation:

1) Prior to entering any airspace requiring the use of long-range navigation system (GPS), the aircraft position shall be accurately fixed using airways facilities or ATC radar. This includes airspace outside the normal service volume of Class I navigation facilities (VORs, etc.) in the GOMEX. After exiting this airspace, the aircraft position shall again be accurately fixed using

airways facilities or ATC radar and the long-range navigation system error determined. Excess error shall be reported in the aircraft maintenance log upon termination of the flight.

2) If all long-range navigation systems fail during IFR operations in airspace where the long-range navigation system is required, an immediate report to ATC will be made and the aircraft will return to where Class I navigation facilities can be used for IFR navigation as soon as practicable or the flight may proceed VFR if the conditions for Helicopter Offshore Operations in Section 6, Offshore Helicopter Operational Procedures above can be met.

D. Alternate Requirements:

1) An appropriate onshore or offshore alternate IFR airport/heliport is required unless from at least one hour before and after the estimated time of arrival the appropriate weather reports or forecasts, or any combination of them, indicate that the destination weather will be at or above a ceiling of 2000 ft. MSL and 3 miles visibility.

2) Offshore Standard Approach Procedures (OSAP) may be used as an offshore alternate if the weather reports or forecasts, or any combination of them, indicate that the weather conditions will be at or above a ceiling of 800 ft. MSL and 2 sm visibility at the estimated time of arrival at the OSAP location.

3) Off shore alternates must have an approved source of weather observations and reports and two-way communications with the aircraft making the approach.

4) Any required onshore alternate requires a standard or special instrument approach procedure other than GPS that is anticipated to be operational at the estimated time of arrival.

E. Weather Requirements:

1) Offshore IFR approaches must have a weather reporting source approved by the NWS, FAA or as listed in Appendix I within 10 nm of the destination or two approved weather sources located within a 60nm by 80nm rectangle overlying the destination.

2) After completion of an offshore IFR approach and the flight is to continue VFR to another destination within 3nm of the approach target then the following weather minimums apply:

a. Day; Ceiling 600ft. MSL, visibility 2 sm.

b. Night; Ceiling 600ft. MSL, visibility 3 sm.

3) After completion of an offshore IFR approach and the flight is to continue VFR to another destination beyond 3nm of the approach target then the VFR weather minimums of Table 1, "Weather Minimums" of this section apply.

4) Precipitation Limits: The offshore instrument approach shall not be executed in precipitation that results in contouring on the radar display.

F. OSAP (Offshore Standard Approach Procedure) Operational Limitations

1) OSAPs will be flown in accordance with the charted procedure authorized for use by Metro Aviation. Copies of the OSAP charts are in Appendix I and in the Documents section of the company Website.

2) A descent below the MEA is not authorized at any point in the OSAP until the helicopter has departed the last en route fix and is offshore.

3) The final approach course is flown into the wind within 10° of the wind direction, and with no more than a 10° crosswind correction angle.

4) Between the FAP and the MAP, the maximum ground speed is 70 knots.

5) At the DPA (Decision Point Altitude), the crew must confirm the final approach course is clear laterally of all obstacles by at least 0.5 NM before a descent is made to the MDA.

6) A Missed Approach is executed when any one of the following events occur:

a. Visual reference with the landing site is not made at the MAP.

b. Failure of the GPS.

c. Failure of the airborne radar.

d. The approach target is lost from the airborne radar display for one full sweep.

e. When the radar operator determines the helicopter's track will not avoid all obstacles by at least 0.5 NM.

7) The lost communication procedure after the missed approach is 'Execute the published missed approach procedure and then proceed direct to the alternate at the MEA'.

G. Landing Minimums

1) Radar Altimeter Altitude (RA) 200ft and 3/4 SM visibility, or

2) 250ft MSL and 3/4 SM visibility. When the barometric altimeter setting is received from a source that is more than 5 NM from the landing site, increase the MDA by 5 ft for each mile in excess of 5 NM. The maximum distance for a remote altimeter setting source from a landing site is 75 NM.

3) Before using the Landing Minima in 1 & 2 above, each flight crew member must pass an OSAP flight proficiency check. They may then be authorized to use ceiling and visibility minimums of 300 ft RA and 1 statute mile (SM). Each crew member must then fly and record ten additional OSAP's for each type of navigation receiver and at least five for each type of procedure before receiving authorization to conduct operations to ceiling and visibility minimums lower than 300 ft RA and 1 SM. The POI may reduce these requirements based on the total crew experience provided the Pilot-in-Command meets all other requirements.

H. Takeoffs

1) The standard takeoff visibility for offshore landing sites is 1/2 SM.

2) When departing an offshore landing site, avoid all obstructions by at least 0.5 NM when below 900 ft MSL.

3) For departures from platforms that have no approved departure procedure, maintain VFR until able to climb through an obstacle clear area to the MEA.

8. Scene Operations - Day

A. For landings to emergency scene sites in remote areas inaccessible to emergency personnel, the Pilot-in-Command, after evaluation of available information, may accept requests for flights to remote scene sites and upon reaching the site he/she will utilize high and low recon flight procedures over the site to plan and choose an adequate landing site that will ensure security and safe flight operations while accomplishing the mission.

B. 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 Pilot-in-Command shall establish communications in order to exchange information concerning the landing site requirements and instructions.

C. The following procedures will be utilized by the Pilot-in-Command at all emergency scene sites:

1) The Pilot-in-Command shall execute a high recon flight over the landing site to locate obstructions and to ensure that the landing site is adequate and to plan an approach and landing route with a planned abort path if he/she chooses not to accept landing at the site.

2) The Pilot-in-Command will then execute a low recon during a steep approach to the landing site considering the best approach path and allowing for further recon of the area before committing to landing.

3) If the Pilot-in-Command accepts the landing site as an acceptable landing area, then he/she may continue the approach to landing using extreme caution and judgment to ensure a safe operation, with a planned route for missed approach and aborted landing go-around.

4) The Pilot-in-Command may utilize the aid of the medical attendant(s) to clear the area on the opposite side of the pilot station to ensure adequate clearance and site security before landing.

5) Once on the ground, the Pilot-in-Command will exit the aircraft if possible in order to make a ground recon of the intended takeoff and departure area to further confirm the location of obstructions and site security.

6) On takeoff, helicopter performance and density altitude permitting, the Pilot-in-Command will execute a max performance takeoff to an altitude of 50 feet above the highest known obstruction or 150 feet AGL whichever is higher.

9. Scene Operations - Night

A. The Pilot-in-Command 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 landing site is adequate for the operation and clear of obstructions and that the area is clear of bystanders.

B. The Pilot-in-Command will abort the flight to the emergency scene site if communications cannot be established or is lost, or on arrival he/she can not adequately communicate with ground personnel to insure the security and safety of the landing site area.

C. Landing to emergency scene sites 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:

1) Aircraft additional lighting must be installed and operational.

2) The Pilot-in-Command shall execute a high recon flight over the landing site to locate obstructions and to plan an approach and landing route with a planned abort path if he/she chooses 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.

3) The Pilot-in-Command 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 to him/her during the flight operations.

4) The Pilot-in-Command will then execute a low recon of the landing site to further confirm that the site is acceptable and making final selection of his approach path using extreme caution to ensure clearance with obstructions. The pilot will also communicate with ground personnel to ensure that the landing site is secure for landing.

5) The Pilot-in-Command may utilize the aid of the medical attendant(s) to clear the area on the opposite side of the pilot station to ensure adequate clearances and site security before landing.

6) If the Pilot-in-Command accepts the landing site as an acceptable landing area, then he/she may continue the approach to landing using extreme caution and judgment to ensure safe operation, with a planned route for a missed approach or aborted landing go-around.

7) On the ground, the Pilot-in-Command will exit the aircraft if possible in order to make a ground recon of the intended takeoff and departure area to further confirm the location of obstructions and site security. At the pilot's discretion, ground personnel may be utilized to assist him in the survey with additional lights to aid him/her in the planning for departure. It is extremely important that this recon be done to ensure the safety of this operation.

8) On takeoff, helicopter performance and density altitude permitting, the Pilot-in-Command will execute a max performance takeoff to an altitude of 50 feet above the highest known obstruction (AHO) or 150 feet AGL whichever is higher. Extreme caution must be used in the planning of the takeoff path if 50’ AHO or 150’ AGL is not possible. A reference altitude will be utilized on the altimeter or radar altimeter to ensure obstruction clearance.

10. VFR Flight Planning

A. Prior to conducting VFR operations the pilot must determine the minimum safe altitudes along the planned en route phase of flight.

1) The minimum safe cruise altitudes shall be determined by evaluating the terrain and obstacles along the planned route of flight.

2) The pilot must ensure that all terrain and obstructions along the route of flight, except for takeoff and landing, are cleared vertically by no less than the following:

a. Day – 300’ above the highest obstacle within 1000’ horizontally

b. Night – 500’ above the highest obstacle within 2000’ horizontally

3) Prior to each flight, the PIC must identify and document, for each leg of flight on the flight manifest sheet, the highest obstacle along the planned route of flight.

4) Using the minimum safe cruise altitudes, the pilot must determine the minimum required ceiling and visibility to conduct the planned flight by applying the weather minimum derived from Table 1, “Weather Minimums” below, as appropriate to the conditions of the planned flight, and the visibility and cloud clearance requirements applicable to the class of airspace the planned flight will operate in and visual surface reference, or at night, visual surface light reference, sufficient to safely control the helicopter.

5) Pilots may deviate from the planned flight path as required by conditions or operational considerations. During such deviations, the pilot is not relieved from the weather or terrain/ obstruction clearance requirements of the regulations. Re-routing, change in destination, or other changes to the planned flight that occur while the aircraft is on the ground at an intermediate stop require evaluation of the new route in accordance with A 1- A 4 above.

11. Weather Minimums

1) Minimum weather requirements in this section apply to all VFR operations, with the exception of certain IFR to VFR transition operations described in Section 2, Helicopter IFR Operations, in this chapter.

2) Table-1 NVIS or TAWS minima may be used if either NVIS or TAWS is installed and operational in the aircraft. Operations with night vision goggles (NVG / NVIS) will be in accordance with the NVG section of this manual

3) In some cases Metro's minimums are more restrictive than those in the FARs and in all cases the more conservative minimum will apply.

4) Helicopter flights during icing conditions are prohibited.

5) With the approval of the Director of Operations, individual bases are allowed to adopt higher minimums to meet local conditions.

6) Multi-Engine helicopters may conduct VFR operations over clouds provided:

a. The pilot has visual reference to the surface.

b. Climb and descent can be conducted VFR clear of clouds and in accordance with FAR 135.211.

c. The point of origin and destination is forecast to allow descent under VFR and to remain so for 1 hour after ETA.

d. Conditions allow continuation of flight under VFR if the critical engine fails.

Table 1: Weather Minimums

Location	Day		Night		Night using an Approved NVIS or HTAWS	
	Ceiling	**Flight Visibility**	**Ceiling**	**Flight Visibility**	**Ceiling**	**Flight Visibility**
Non-Mountainous Local Flying Areas	800 ft	2 statute miles	1,000 ft	3 statute miles	800 ft	3 statute miles
Non-Mountainous Non-Local Flying Areas	800 ft	3 statute miles	1,000 ft	5 statute miles	1,000 ft	3 statute miles
Mountainous Local Flying Areas	800 ft	3 statute miles	1,500 ft	3 statute miles	1,000 ft	3 statute miles
Mountainous Non-Local Flying Areas	1,000 ft	3 statute miles	1,500 ft	5 statute miles	1,000 ft	5 statute miles

Intentionally Blank

CURRICULUM SEGMENT: INSTRUMENT TRAINING

Objective

To provide VFR qualified flight crewmembers with the essential knowledge and skill necessary to perform IFR flight crewmember duties. This training curriculum will be used after the completion or in conjunction with *"Aircraft Specific"* training covered in the Flight Training Curriculum Segments. This curriculum segment will be conducted in one ground training module, three flight training modules, and one qualification module. Flight training modules may be combined at the discretion of the instructor but all modules must be completed. In all modules the student will receive 'Systems Integration" training on how systems interrelate with respect to normal, abnormal, and emergency procedures.

Training Equipment

All training will be conducted in an aircraft appropriate for the pilot's duty assignment or an approved simulator/FTD. CTS (Computer Training Systems), videos/DVDs, and other audio-visual aides may be used to comply with the ground training requirements.

Training Hours

Training time will be dependent upon category of training. When the instrument training curriculum is taught separate from a curriculum category then the minimum hours spent in training are:
Ground Training – 4 Hours
Flight Training – 3 Hours*

Ground Training Module

Flight Training Module 1 – Basic Instrument Flying

Flight Training Module 2 – Normal Procedures

Flight Training Module 3 – Abnormal and Emergency Procedures

Qualification

*The time listed assumes the pilot is already qualified in the aircraft they are assigned to fly IFR.

Ground Training Module

I. Preflight Preparation

1. Obtaining and analyzing weather information for IFR flight*
    a. Preflight and enroute weather information sources
    b. Weather reports and forecasts
    c. Weather charts
    d. Sigmets and Airmets
2. Cross Country Flight Planning*
    a. Fuel Requirements
    b. Alternate airport requirements
    c. NOTAMS
3. Departure Procedures*
    a. IFR Flight Plans
    b. Published Departure Procedures
4. Arrival Procedures*
    a. STARS
    b. IAPs
5. RNAV-1 DPs and STARs (if applicable)
    a. Operating Procedures in AC90-100 as amended
    b. Aircraft Equipment/Navigation Suffixes
    c. Chart Depictions and textual descriptions
        1. Waypoint Types (Fly-over vs. Fly-by)
        2. Required navigation equipment for procedure
        3. Phraseology used in RNAV Procedures (i.e."Descend Via")
    d. RNAV system-specific information
        1. Levels of automation and mode annunciations
        2. Integration with other aircraft systems
        3. Route discontinuities and related procedures
        4. Monitoring procedures for each phase of flight (LEG)
        5. Types of navigation sensors (GPS, DME, etc.)
        6. Turn anticipation with consideration to speed and altitude effects
        7. Interpretation of electronic displays and symbols
    e. RNAV equipment operating procedures
    f. Methods to minimize cross-track error to maintain procedure centerline
    g. Contingency procedures for RNAV failure

II. Preflight Procedures

1. Aircraft Systems and Checks
    a. Flight Instruments Operation and Checks
    d. Flight Display Systems applicable to aircraft model used
    e. VOR Receiver checks
    f. Auto-Flight System applicable to aircraft model used
    g. Navigation Systems applicable to the model used
2. Cockpit Management – Single Pilot IFR Operations/ Auto Pilot in Lieu of Second in Command or Crewed cockpit as applicable
    a. Instrument Cockpit Checks
    b. Use of Checklists
    c, Crew Coordination

III. ATC Clearances and Procedures *
- 1. Departure, Enroute, and Arrival Procedures
  - a. Applicable Charts
  - b. Clearances
  - c. Pilot/Controller responsibilities
- 2. Lost Communication Procedures
- 3. Exemptions and Authorizations
  - a. Operating Specifications/ Ops Manual Procedures
  - b. Special Offshore Instrument Procedures @
  - c. Special Instrument Procedures @
  - d. Exemption 13749

IV. Instrument Approach Procedures
- 1. Weather Considerations
- 2. Approach Speeds and categories
- 3. Segments of the approach (Initial, intermediate, final, circling, and missed)
- 4. Charting formats, naming, symbols, notes, and information
- 5. Approach briefing
- 6. Communication and Navigation system set-up and operating
- 7. Courses and altitudes to be flown
- 8. Transition to visual and visual cues required for landing
- 9. GPS and WAAS (RNAV) approaches
  - a. Equipment requirements, operation, and limitations
  - b. Database currency and RAIM availability
  - c. Retrieving approaches from the database
  - d. Waypoint sequencing, CDI sensitivity, and RAIM status annunciations
  - e. Missed approach procedures and waypoint sequencing
  - f. WAAS system description
  - g. WAAS approach capabilities and minima (LNAV, LP, LNAV/VNAV, LPV)
  - h. WAAS NOTAMs and site-specific WAAS Unreliable NOTAMs
  - i. WAAS approaches and alternate airport requirements

V. Crew Resource Management *
- a. Communications processes and decision making
- b. Building and maintenance of a flight team
- c. Workload management
- d. Single Pilot IFR Operations/ Auto Pilot in Lieu of Second in Command CRM

@ = See related Training Curriculum
The '*' symbol denotes CTS (Computer Training System) taught lessons.

Flight Training Module 1 – Basic Instrument Flying

I. Pre-Flight
- a. Pre-Start and System Check
- b. Pre-Takeoff Checks

II. Full Panel Instrument Flight
- a. Straight and Level Flight, Climbs, Turns, and Descents
- b. Steep Turns
- c. VOR Interception and Tracking
- d. ADF/NBD Interception and Tracking (if equipped)
- e. Unusual Attitude recovery

III. Partial Panel Instrument Flight
- a. Straight and Level Flight, climbs, Turns, and Descents
- b. Unusual Attitude Recovery

IV. Post Flight
- a. Post Flight Inspection
- b. Debriefing

Flight Training Module 2 – Normal Procedures

I. Pre-Flight
- a. Flight Planning
- b. Cockpit Management
- c. Pre-Start and System Checks
- d. Pre-Takeoff Checks

II. Flight Phase
- a. Holding – VOR, GPS
- b. Approaches – VOR, GPS/WAAS, LOC, ILS, NDB (as equipped)
- c. Circling Approaches, Missed Approaches
- d. Use of Auto-pilot (Single Pilot IFR Operations or Auto Pilot in Lieu of Second i Comman Operations)
- e. Special Instrument Procedures (see related training curriculum as applicable)
- f. Departure Procedures and STARs (Normal and RNAV-1 as applicable)
- g. Instrument Take-offs

III. Post Flight
- a. Post Flight Inspection
- b. Debriefing

Flight Training Module 3 – Abnormal and Emergency Procedures

I. Pre-Flight
- a. Flight Planning
- b. Cockpit Management
- c. Pre-Start and System Checks
- d. Pre-Takeoff Checks

II. Flight Phase
- a. Lost Communications
- b. Inflight System Emergencies
- c. One Engine Inoperative Instrument Approaches (Multi-engine only)
- d. Loss of Gyro Attitude and/or Heading Indicators
- e. Loss of Autopilot (Single Pilot IFR Operations or Auto Pilot in Lieu of Second in Command Operation)

III. Post Flight
- a. Post Flight Inspection
- b. Debriefing

Qualification

At the completion of the Instrument Training Curriculum the pilot will be scheduled and given a practical examination by the appropriate examiner. When the pilot is qualifying for Single Pilot IFR Operation or Auto Pilot in Lieu of Second in Command operations he must also demonstrate the ability to safely conduct IFR flight without the assistance of another pilot or an autopilot. All testing and checking will be administered in accordance with the Qualification Curriculum in Section 2000 of this manual.

All records pertaining to training and qualification will be made on a form and disposed of in accordance with the Record Keeping Section of this manual.

CURRICULUM: RECURRENT TRAINING PIC/SIC

AIRCRAFT: Helicopter

OBJECTIVE: To update the knowledge and information obtained during initial training.

PREREQUISITES: Currently qualified in company helicopter

TRAINING AIDS: Refer to individual curriculum segments.

COMPLETION STANDARDS: Refer to qualification segment.

APPLICABLE CURRICULUM SEGMENTS

Curriculum Segments	Training Hrs	Modules
BASIC INDOCTRINATION Section 1100	3	Initial Indoctrination Training 2, 3, 7-14, 16
AIRCRAFT GROUND HELICOPTER Section 1310/1700	2 VFR 4 IFR	Helicopter Ground Training 1 – 24 Instrument Training Ground Module
GENERAL EMERGENCY Section 1500	1	Emergency Training 3, 5, 7-9, 11-15
AIRCRAFT FLIGHT HELICOPTER Section 1410/1700	2 VFR* 4 IFR*	Helicopter Flight Training 1-4 Instrument Training Flight Module 1-3
DIFFERENCES Section 1600	2	As Applicable
QUALIFICATION Section 2000	*	Applicable Qualification Table

* Satisfactory completion of a flight check required by 135.293 may be substituted for recurrent training flight hours.
Flight Training hours include time spent during qualification, checking, and the instrument proficiency program.

HELICOPTER INSTRUMENT PROFICIENCY PROGRAM

Objective

To provide flight crewmembers with the essential training necessary to maintain instrument proficiency skills adequate to safely transition from the visual environment to the instrument environment in the event of an inadvertent encounter with instrument meteorological conditions (IMC) and to safely accomplish an instrument recovery to the visual environment using standard instrument approach procedures. Although this curriculum is designed mainly for the VFR helicopter pilot, this training curriculum may also be used for pilots already trained and/or qualified in instrument flight to maintain instrument proficiency skills and currency under the applicable regulations.

Training Equipment

All training will be conducted in an aircraft, simulator, or flight training device appropriate for the pilot's certificate rating or duty position. Approved aircraft or training devices and frequency and duration of training will be per company policy or as directed by the Chief Pilot or Director of Operations.

For training in flight a view limiting device shall be worn by the pilot flying instruments and the safety pilot will be seated at a pilot station with fully functioning dual controls installed. The view limiting device must be satisfactory to the instructor or check airman and prevent flight by visual reference. A hood, foggles or other device that safely masks outside visual reference is acceptable. NVGs shut off and not stowed, may be used at night as a view limiting device**.**

Training Standards

All rotor wing pilots are expected to achieve and demonstrate instrument flying skills to the standards set forth in the Instrument Practical Test Standards FAA-S-8081-4D. In general these standards are:

- Altitude…….Enroute +/- 100 feet; Approaches + 100 ft., - 0 ft.
- Airspeed……+/- 10 knots
- Heading…….+/- 10 degrees
- CDI deflection…..3/4 scale maximum or 10 degrees RMI
- DME Arcs…….1 mile

Training Limitations

Emergency procedures may not be practiced in flight during Instrument Proficiency training unless the person acting as the safety pilot is a qualified Metro Aviation Check Airman or Instructor for the type aircraft being flown. The covering or temporarily disabling flight instruments or nav/com equipment for 'partial panel' procedures is acceptable.

Safety Pilots for instrument proficiency training shall be Designated Safety Pilots who have completed the training required by this curriculum with a check airman or instructor and are approved by the Chief Pilot or Director of Operations. Exceptions to the above safety pilots may only be granted by the Chief Pilot or Director of Operations Although not a primary duty of Metro Aviation Check Airmen and Metro Aviation Flight Instructors they may also conduct IPP training.

Aircraft Attitude will never exceed 60 degrees of bank or 30 degrees of pitch even during unusual attitude simulation. Steep turns in helicopter is anything over 30 degrees of bank.

IFR Flight in Actual IMC conditions can only be done in an IFR certified aircraft with an IFR qualified pilot as the PIC or with a qualified Metro Check Airman or instructor at a set of controls.

DESIGNATED SAFETY PILOT TRAINING

I. Responsibilities and Duties
- A. Preflight Briefing
- B. See and Avoid traffic, terrain, and obstacles
- C. Proper exchange of controls
    - a. "I have the controls", "You have the controls", "I have the controls"
- D. Training Plan of Action
    - a. Required maneuvers on every instrument training flight
        - i. Inadvertent IMC
        - ii. Unusual Attitude Recovery
        - iii. Recovery approach procedure
- E. Evaluating pilot performance
    - a. See above 'Training Standards'
    - b. Requesting additional training

INSTRUMENT PROFICIENCY FLIGHT TRAINING

I. Skills to be practiced (ref: AC61-98c, App.9)
- A. Instrument Cockpit Check
- B. Intercepting/Tracking VOR/NDB/GPS
- C. Steep Turns (max 30 degrees bank)
- D. Basic Attitude Instrument flying
- E. Non-precision approaches – VOR/LOC, GPS, NDB
- F. Precision Approach – ILS
- G. Holding Procedures
- H. Missed Approach Procedures
- I. Circling Approach Procedures
- J. ATC Communications and Crew Resource Management

II. Documenting Training
- A. Instrument Flight Training Record
- B. Logging Flight Time
    - a. PIC – Sole manipulator of controls or IFR PIC in actual conditions
    - b. SIC – Safety Pilot in VFR
    - c. Hood/Actual

Reference materials

I. Instrument Practical Test Standards FAA-S-8081-4D
II. Instrument Flying Handbook FAA-H-8083-15-1
III. Instrument Rating Handbook FAA-H-8083-15-2
IV. Instrument Procedures Handbook FAA-H-8261-1A
V. Currency Requirements and Guidance for the Flight Review and Instrument Proficiency Check, AC 61-98C

A010 . Aviation Weather Information

HQ Control: 03/12/2013
HQ Revision: 040

a. The certificate holder conducting 14 CFR Part 135 operations is authorized to use weather reporting facilities operated by the U.S. National Weather Service or a source approved by the U.S. National Weather Service.

b. The Administrator approves the certificate holder to use the following sources of aviation weather information.

See Table 1

The National Weather Service (NWS) or a source approved by the NWS (within the 48 contiguous United States and the District of Columbia)

The National Weather Services for those United States and its territories located outside of the 48 contiguous States

U.S. and North Atlantic Treaty Organization (NATO) military observing and forecasting sources

For reports of adverse weather phenomena: Pilot Weather Reports (PIREP) provided by aircraft of the same, or similar, type and size

For reports of adverse weather phenomena: Aircraft Reports (AIREP) provided by aircraft of the same or similar type and size

c. The certificate holder is approved to use an Enhanced Weather Information System (EWINS) to obtain and disseminate aviation weather information for the control of flight operations.

Table 1 - EWINS

Name of Weather Source	Name of Manual Containing EWINS	Date of Initial Approval of EWINS	Date of Latest Revision of EWINS
Schneider Electric	Enhanced Weather Information System - Schneider Electric	1/29/2016	N/A

H117. Straight-in Category I Precision Instrument Approach Procedures - All Airports **HQ Control: 11/22/00** **HQ Revision: 000**

a. Except as provided in this paragraph, the certificate holder shall not use any Category I IFR landing minimum lower than that prescribed by any applicable published instrument approach procedure. The IFR landing minimums prescribed in this paragraph are the lowest authorized (other than Airborne Radar approaches) for use at any airport. Provided that the fastest approach speed used in the final approach segment is less than 91 knots, the certificate holder is authorized to conduct straight-in precision instrument approach procedures using the following:

(1) The published Category A minimum descent altitude (MDA) or decision height (DH), as appropriate.

(2) One-half of the published Category A visibility/RVR minimum or the visibility/RVR minimums prescribed by this paragraph, whichever is higher.

b. Straight-In Category I Precision Approach Procedures. The certificate holder shall not use an IFR landing minimum for straight-in precision approach procedures lower than that specified in the following table. Touchdown zone RVR reports, when available for a particular runway, are controlling for all approaches to and landings on that runway. (See NOTE 2.)

Precision Approaches	**Full ILS (See NOTE 1), MLS, or PAR**				
Approach Light Configuration	**HAT**	**Helicopters Operated at Speeds of 90 Knots or Less**		**Helicopters Operated at Speeds More Than 90 Knots**	
		Visibility In SM.	**TDZ RVR In Feet**	**Visibility In SM.**	**TDZ RVR In Feet**
No Lights or ODALS or MALS or SSALS	200	3/4	3500	3/4	4000
MALSR or SSALR or ALSF-1 or ALSF-2	200	1/4	1600	1/2	2400
MALSR with TDZ and CL or SSALR with TDZ and CL or ALSF-1/ALSF-2 with TDZ and CL	200	1/4	1600	1/2	1800

NOTE 1: A full ILS requires an operative LOC, GS, and OM or FAF. A precision or surveillance radar fix, an NDB, VOR, DME fix, or a published minimum GSIA fix may be used in lieu of an outer marker.
NOTE 2: The Mid RVR and Rollout RVR reports (if available) provide advisory information to pilots. The Mid RVR report may be substituted for the TDZ RVR report if the TDZ RVR report is not available.

c. Special Limitations and Provisions for Instrument Approach Procedures at Foreign Airports. If the certificate holder is authorized operations at foreign airports, the following criteria apply.

(1) Foreign approach lighting systems equivalent to U.S. standards are authorized for both precision and nonprecision approaches. Sequenced flashing lights are not required when determining the equivalence of a foreign lighting system to U.S. standards.

(2) For straight-in landing minimums at foreign airports where an MDA or DH is not specified, the lowest authorized MDA or DH shall be obtained as follows:

(a) When an obstruction clearance limit (OCL) is specified, the authorized MDA or DH is the sum of the OCL and the touchdown zone elevation (TDZE). If the TDZE for a particular runway is not available, threshold elevation shall be used. If threshold elevation is not available, airport elevation shall be used. For nonprecision approaches, the MDA may be rounded to the next higher interval of 10 foot increment.

(b) When an obstacle clearance altitude (OCA)/obstacle clearance height (OCH) is specified, the authorized MDA or DH is equal to the OCA/OCH. For nonprecision approaches, the authorized MDA may be expressed in intervals of 10 feet.

(c) The HAT or HAA used for nonprecision approaches shall not be below those specified in subparagraph a. The HAT or HAA used for precision approaches shall not be below those specified in subparagraph b.

(3) When only an OCL or an OCA/OCH is specified, visibility and/or RVR minimums appropriate to the authorized HAA/HAT values determined in accordance with subparagraph e.(2) above will be established in accordance with criteria prescribed by U.S. TERPS.

(4) When conducting an instrument approach procedure outside the United States, the certificate holder shall not operate an aircraft below the prescribed MDA or continue an approach procedure below the DH, unless the aircraft is in a position from which a normal approach to the runway of intended landing can be made and at least one of the following visual references is clearly visible to the pilot:

(a) Runway, runway markings, or runway lights.

(b) Approach light system (in accordance with 14 CFR Section 91.175(c)(3)(i)).

(c) Threshold, threshold markings, or threshold lights.

(d) Touchdown zone, touchdown zone markings, or touchdown zone lights.

(e) Visual glide path indicator (such as, VASI, PAPI).

(f) Any other feature which clearly identifies the landing surface.