3-19-15-1 GENERAL. This section contains guidance to be used by inspectors when evaluating a Title 14 of the Code of Federal Regulations (14 CFR) part 135 air ambulance operator training programs for flightcrew members. This section should be used in conjunction with Volume 3, Chapter 19, Sections 1 through 11, as it does not contain comprehensive guidance for an entire part 135 training program. Air ambulance operators are not exempted, by virtue of the urgent medical response implications of this industry, from any other training requirements imposed upon all part 135 operators. This section addresses only the additional subject matter required for air ambulance (helicopter or airplane) training programs. This section is related to Safety Assurance System (SAS) Element 2.1.1 (OP), Training of Flight Crewmembers, and Element 2.1.4 (OP), Outsource Crewmember Training.

3-19-15-3 AIRPLANE TRAINING PROGRAMS. Inspectors must consider the following elements when evaluating an operator’s airplane flight training program and airplane ground training program:

A. Airplane Ground Training Program. Inspectors must evaluate the following ambulance-specific areas in the operator’s ground training curriculum:

- Aircraft medical systems variations;
- Passenger restraining methods in flight;
- Flightcrew functions and responsibilities, including Crew Resource Management (CRM) as it pertains to interface between medical personnel and flightcrew members;
- Aircraft systems variations, such as special electrical systems, navigational radios, and instrumentation and their performance characteristics;
- Handling of special medical equipment to include loading/unloading of stretchers, isolettes, balloon pumps, and ventilators;
- Appropriate restraint of infants, pediatric patients, and problem passengers to include prisoners;
- International operations (if appropriate); and
- Blood-borne pathogens and biohazard and infection control, including prevention and control of infectious diseases.

B. Airplane Flight Training Program. There are no airplane flight training maneuvers that are unique to air ambulance services.

3-19-15-5 HELICOPTER TRAINING PROGRAMS. Inspectors must carefully consider the following elements when evaluating a helicopter air ambulance (HAA) operator’s training program:
A. **Pilot Ground Training.** Inspectors must evaluate the operator’s ground training curriculum. The operator must ensure that the following topics are included:

1) Risk analysis procedure required by part 135, § 135.617 and as described in Appendix A of the current edition of AC 135-14, Helicopter Air Ambulance Operations.

2) Local flying area (LFA) familiarity. Pilots must receive training and must demonstrate their familiarity with each LFA they are authorized to use by passing an examination given by the certificate holder within the previous 12 calendar-months prior to taking advantage of LFA weather minimums. In other words, pilots who have not demonstrated their familiarity by examination within the past 12 calendar-months may not operate to lower Class G minimums listed in the table within § 135.609(a). This examination may be conducted in conjunction with a § 135.293(a) check or may be made via flight check by a computer-based training and checking system, or by written or oral examination administered by a company-designated individual who is familiar with the LFA involved. Subject matter that should be included in the training and examination are as follows:

   a) LFA borders;

   b) Locations of terrain features and obstructions that may pose a hazard to HAA flight operations;

   c) Available (emergency) and operator-approved airports, heliports, and off-airport landing sites/areas along with appropriate ingress/egress routes and limitations or guidance;

   d) Preferred low-altitude flyways and minimum cruising altitudes throughout the LFA;

   e) Air traffic control (ATC) frequencies, instrument approaches, and the terms and conditions of any local Memorandums of Understanding (MOU) established between the ATC facilities and the operator;

   f) Weather resources available within the LFA;

   g) Local communications procedures between the aircraft and any communications centers, specialists, or Operations Control Centers (OCC);

   h) Specific local area adverse weather cues; and

   i) Additional local concerns as appropriate (refer to § 135.609).

3) Flight planning and weather minimums (refer to § 135.615).

4) Flightcrew functions and responsibilities, including CRM as it pertains to interface between medical personnel and flightcrew members.

5) Obstacle recognition and avoidance.
6) Handling, loading, and unloading of special medical equipment such as stretchers, isolettes, balloon pumps, and ventilators.

7) Appropriate restraint of infants, pediatric patients, and passengers who may pose a threat to the safety of the aircraft and crew, to include patients who are hysterical or combative.

8) Hospital heliport operations and procedures.

9) Day and night unimproved landing area (scene) operations.

10) International operations (if appropriate).

11) Blood-borne pathogens, biohazard, and infection control, including prevention and control of infectious diseases.

12) Refueling procedures and methods to ensure fuel quality.

B. Helicopter Pilot Flight Training with Flight Simulation Training Devices (FSTD).

1) Helicopter FSTDs are rapidly becoming more advanced. Some are now capable of full motion with realistic visual cockpit displays. A growing number of helicopter FSTDs are approved by the Federal Aviation Administration (FAA).

2) Training in inadvertent instrument meteorological conditions (IIMC), flat light, and other special conditions can be enhanced through the use of FSTDs, which have the capability to suddenly decrease visibility and simulate a variety of situations not realistically possible in flight. FSTDs can provide realistic training to hone appropriate pilot responses to all types of sudden onset emergencies. Inspectors must become thoroughly familiar with the types of FSTD and simulator practices that the operator intends to use and the FSTD capabilities prior to authorizing the use of these FSTDs.

C. Flight Training Curriculum. Inspectors should verify that the following recommended topics are included in the operator’s flight training curriculum as appropriate to the operations conducted:

1) LFA orientation (day/night) to familiarize pilots with and to reinforce LFA features, hazards, special procedures, and concerns, presented in subparagraph 3-19-15-5A2);

2) Hospital heliport operations and procedures (day/night and multi-aircraft);

3) Unimproved landing zone (LZ) operations (off-airport, day/night, and multi-aircraft);

4) Day and night cross-country flights, including cockpit and exterior lighting and forced landing considerations (including use of a searchlight if installed); and
5) Communications, including air-to-ground and flight crew/medical personnel procedures.

D. IIMC Avoidance and Recovery Procedures. This is a topic that applies to all part 135 helicopter operations and as such is checked in all § 135.293 competency checks. It is emphasized here because of the high proportion of helicopter accidents that were at least partially attributed to continued visual flight rules (VFR) flights into instrument meteorological conditions (IMC).

1) Inspectors should evaluate the certificate holder’s training and checking procedures, particularly the identification and recognition of circumstances likely to lead to IIMC encounters and that serve to prompt the pilot to abandon continued VFR flights into deteriorating conditions.

2) The inspector must also evaluate the training program treatment of IIMC recovery techniques and procedures, including the appropriate declaration of an emergency due to an IIMC encounter and the obtaining of an instrument flight rules (IFR) clearance at the first opportunity. Inspectors are cautioned to avoid pursuit of enforcement action under these circumstances providing adequate pre-flight planning and risk analysis was performed.

3) IIMC may effectively occur when visual meteorological conditions (ceiling and visibility) may exist but conditions do not allow for the determination of a usable horizon. Such conditions include flat light conditions (discussed in paragraph 3-9 of the current edition of AC 135-14) and may occur during night operations over unlit surfaces in low-lighting conditions. These conditions may result in a loss of horizontal or surface reference by which the pilot typically controls a helicopter in VFR flight. Without adequate training and checking, pilots may not be prepared to contend with these conditions, leading to loss of control that may not be survivable.

4) An oral or written test covering procedures for aircraft handling in flat-light, whiteout, and brownout conditions, including methods for recognizing and avoiding those conditions, is required. Refer to § 135.293(a)(9) and see Volume 3, Chapter 19, Section 7, Flightcrew Qualification Curriculum Segments, for further details.

E. Night Training.

1) A disproportionate number of HAA-associated accidents occur at night. Inspectors must evaluate an HAA certificate holder’s night training and checking to verify that flight, ground, and simulator training emphasize night operations, both aided (night vision goggles (NVG)) and unaided. Pilot night proficiency is essential for 24-hour HAA operations. Night training must be tailored to the certificate holder’s specific requirements and capabilities, taking into account the experience level of their pilots, the area of operations, type of aircraft, and the installed equipment. If applicable, night flight training should include the effective use of Night Vision Imaging Systems (NVIS), Helicopter Terrain Awareness and Warning System (HTAWS), and radar altimeters.

2) Night competency checks. HAA operators with operations specification (OpSpec) A050 NVIS/NVG authorization are increasingly likely to perform all § 135.293 competency
checks during darkness. If this is the case, the inspector must annually evaluate or observe competency checks performed by check airmen to verify maneuvers are performed with and without the aid of NVIS.

NOTE: All HAAs must be equipped with HTAWS by April 24, 2017, in accordance with § 135.605.

NOTE: Effective April 24, 2017, all HAA pilots must hold a valid helicopter instrument rating or an Airline Transport Pilot Certificate (ATPC) with a category and class rating not limited to VFR. (Refer to § 135.603.)

3-19-15-7 CREW RESOURCE MANAGEMENT (CRM) TRAINING. Inspectors should evaluate how air ambulance operators provide CRM training that integrates medical personnel during routine flight operations and how medical personnel on board and, as appropriate, communications specialists (CS) or Operations Control Specialists (OCS) may be integrated to supplement the flightcrew, as appropriate, during operations including IIMC recovery, NVG operations, and operations involving unimproved LZs, etc. Refer to the current editions of AC 120-51, Crew Resource Management Training, for general CRM concerns and AC 00-64, Air Medical Resource Management, to identify certain HAA CRM training issues. The inspector must bear the following overarching aeronautical decision-making (ADM) concepts in mind when reviewing certificate holder CRM training programs.

A. Crewmember Judgment. Crewmember judgment is the mental process by which the crewmember recognizes, analyzes, and evaluates information about himself or herself, the helicopter, and the external environment. Judgment and decisionmaking can be developed and improved with training. Pamphlet DOT/FAA/PM-86/45, Aeronautical Decision Making for Helicopter Pilots, is recommended as a tool to improve ADM and CRM.

B. Decisionmaking. Decisionmaking training should include topics such as LFA, refueling locations, terrain, local weather patterns, aircraft characteristics and capabilities, and medical equipment. Emphasis in training should be placed on identifying and addressing the types of decisions likely to be required by the specific needs of HAA operations.

C. Risk Analysis. Risk analysis is an integral component of the decisionmaking process. It must be trained for, understood, and practiced by HAA crewmembers before and during all flight operations.

D. Medical Condition of the Patient. Industry best practices indicate that the medical condition of the patient should not be a factor in any pilot-in-command (PIC) decisionmaking processes to accept, decline, or divert a flight and should not be briefed to the PIC in advance of the decisionmaking process. This should be emphasized in training.

3-19-15-9 AIR MEDICAL RESOURCE MANAGEMENT (AMRM) TRAINING.

A. AMRM training is optional but strongly recommended. If the operator engages in AMRM, inspectors should evaluate the operator’s AMRM. Verify that both the certificate holder and medical management personnel have received initial and recurrent training in clearly defining and consistently applying safe operating philosophies, policies, safety culture, best
practices, and procedures throughout their respective organizations. Ideally, AMRM training should not be limited to the classroom but should include engagement with high-level decisionmakers, including medical or hospital management. Refer to AC 00-64 to identify AMRM training issues.

B. If the inspector observes or is made aware of certificate holder or customer management actions or practices that are potentially detrimental to HAA safety, this may indicate that AMRM training was not effective. The inspector should address the observed or reported actions or practices through the AMRM program so the issue can be remediated, and he or she should review the AMRM training program to identify deficiencies and encourage preventative corrections to the training program so it is unlikely the same issue would recur.

3-19-15-11 MANAGEMENT PERSONNEL TRAINING. Management personnel should participate in the certificate holder’s training program. Management personnel should be familiar with the ADM process. Knowledge of appropriate FAA regulations and guidelines related to safe operations is essential.