

Air Carrier Training Aviation Rulemaking Committee (ACT ARC)

Recommendation 15-4: Integration of Line Oriented Flight Training (LOFT) in Helicopter Air Ambulance (HAA) Operator Training Curriculums

I. Submission

The recommendations below were submitted by the Air Carrier & Contract Training Workgroup (AC&CT WG) for consideration by the Air Carrier Training Aviation Rulemaking Committee (ACT ARC) Steering Committee at F2F-4. The ACT ARC Steering Committee revised and partially adopted the recommendations, which are submitted to the Associate Administrator for Aviation Safety (AVS-1) as ACT ARC Recommendation 15-4.

II. Statement of the Problem

The Federal Aviation Administration (FAA) posed a series of questions to obtain industry input for a Congressionally-mandated rulemaking, including the following:

1. What should be required for a Helicopter Air Ambulance (HAA) operator conducting Line Oriented Flight Training (LOFT) (e.g., specific maneuvers)?
2. What level flight simulation training device (FSTD) should be used for LOFT?
3. Can LOFT be conducted in a helicopter instead of an FSTD?
4. How many hours should an HAA LOFT be in a FSTD? In a helicopter?
5. How could the FAA incentivize operators to incorporate LOFT into their pilot training programs?
6. Should anything else be required for LOFT standards?

III. Proposed Recommendations

The AC&CT WG proposes the following recommendations for ACT ARC Steering Committee consideration:

The ACT ARC recommends the FAA use the term Helicopter Line Oriented Flight Training (HLOFT) to make a distinction between what has commonly been referred to as "LOFT" by other sectors of the aviation industry.

The ACT ARC further recommends the FAA encourage operators to include an experience event in the training curriculum consisting of a minimum of one (1) hour of HLOFT to be conducted in an aircraft or Title 14 of the Code of Federal Regulations (14 CFR) part 60 approved flight simulation training device (FSTD). The experience event would be conducted after completion of the qualification segment to ensure that each flight crewmember has reached an acceptable level of proficiency and assigned duties before being released from training. The experience would include the following tasks:

- Air Medical Resource Management (AMRM)/Crew Resource Management (CRM)
- Aeronautical Decision Making (ADM)
- Night Landings in Confined Areas
- Brown Out, White Out/Low Light
- Base Oriented Training

The ACT ARC further recommends the FAA provide additional guidance regarding which experience event tasks can be completed in various levels of training devices.

The HAA Training Action Team provided the following supporting information for this recommendation:

- a. Maneuvers requiring an AATD level device certification or higher:
 - ADM and AMRM/CRM
 - ADM and AMRM/CRM can be effectively trained “at the table” or in a classroom environment through the use of tabletop exercises.
 - Developing HLOFT centered on these topics to be conducted in an AATD would provide a heightened level of real world application and hands-on practice of the concepts discussed.
 - Base Oriented Training
 - An AATD could effectively be used to simulate the cockpit environment as it relates to actual “Line” or “Base” scenarios.
 - In-flight diversions/destination changes
 - Abnormal medical situations in flight, etc.

Note: Scenarios that may require a higher level of simulation fidelity will be listed below under Full Flight Simulator (FFS).
- b. Maneuvers requiring a Level C FFS level of certification or above:
 - Night Landings in Confined Areas
 - Level C is the lowest FFS certification level requiring visual cues necessary to assess rate of change of both low altitude/low airspeed maneuvering, and hovering flight.
 - Level C is the lowest FFS certification level requiring a visual system capable of representing dusk (twilight) conditions.
 - Brown Out, White Out/Low Light
 - Level C is the lowest FFS certification level requiring the simulator to provide the instructor/evaluator the ability to present the effects of re-circulating dust, water vapor, or snow conditions that develop as a result of rotor downwash.
 - Level C is the lowest FFS certification level requiring a visual system capable of representing dusk (twilight) conditions.
 - Base Oriented Training
 - The tasks/maneuvers listed above require the pilot to react to developing conditions in a dynamic flight environment. Maneuvers that require flying the aircraft to touchdown, should require a Level C certification or higher.
 - Representations of the following conditions are not required for levels below Level C:
 - Ground Effect
 - Effects of airframe and rotor icing
 - Aerodynamic interference effects between rotor wake and fuselage
 - Influence on the rotor on control and stabilization systems
 - Representations of settling with power
 - Retreating blade stall

IV. Rationale

In responding to the questions posed by the FAA regarding LOFT, the HAA Training Action Team developed the HLOFT experience event concept and associated recommendations. HLOFT is designed to ensure that each flight crewmember has reached an acceptable level of proficiency to perform assigned duties before being released from training. Using the experience event as part of a HAA training program will give the flight crewmember an opportunity to practice skills in a “realistic” environment.

Leading industry operators have been incorporating most of these tasks into “informal” HLOFT scenarios for years, and subsequent accident data supports that HLOFT prevents accidents. HLOFT is considered an industry “best practice” and is a standard required of operators accredited by the Commission for Accreditation of Medical Transport Systems (CAMTS).

HLOFT is not entirely aircraft-specific, so by allowing operators to utilize tabletop exercises and training devices (as appropriate to the task), the FAA will provide an economic incentive to conduct this training. Since these experience events would be in addition to required training events, allowing such events to be conducted in training devices allows operators to enhance required training in a safe and economical manner.

V. Background Information

ACT ARC Initiative:

These recommendations address Part I of the tasking associated with the following Steering Committee Initiative:

Initiative #31: Develop guidance for Helicopter Air Ambulance (HAA) operations under 14 CFR part 135 with regard to:

- HAA Pilot Training Program curriculums
- Incorporating Line Oriented Flight Training (LOFT) into pilot training curriculums
- Crew Resource Management (CRM) training

Source Requirement:

Public Law 112-95, § 44730. Helicopter air ambulance operations

§ 44730(e). SUBSEQUENT RULEMAKING.—

(1) IN GENERAL.—Upon completion of the rulemaking required under subsection (b), the Administrator shall conduct a follow-on rulemaking to address the following:

(A) Pilot training standards, including—

- (i) mandatory training requirements, including a minimum time for completing the training requirements;
- (ii) training subject areas, such as communications procedures and appropriate technology use; and
- (iii) establishment of training standards in—

(I) crew resource management;

(II) flight risk evaluation;

(III) operational control of the pilot in command; and

(IV) use of flight simulation training devices and line-oriented flight training.

(B) Use of safety equipment that should be worn or used by flight crewmembers and medical personnel on a flight, including the possible use of shoulder harnesses, helmets, seatbelts, and fire resistant clothing to enhance crash survivability.

(2) DEADLINES.—Not later than 180 days after the date of issuance of a final rule under subsection (b), the Administrator shall initiate the rulemaking under this subsection.

(3) LIMITATION ON CONSTRUCTION.—Nothing in this subsection shall be construed to require the Administrator to propose or finalize any rule that would derogate or supersede the rule required to be finalized under subsection (b).

Note: Reference *Helicopter Air Ambulance, Commercial Helicopter, and Part 91 Helicopter Operations Final Rule* ([79 FR 9932](#) published February 21, 2014—effective date extended to April 22, 2015) for Congressionally mandated rulemaking required by P.L. 112-95 § 44730(b).