FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT
SAFETY ELEMENT 4.2.3 - TRAINING OF FLIGHT CREWMEMBERS JOB AID Revision 1

The Federal Aviation Administration (FAA) is proactively moving away from compliance–based safety surveillance programs to Systems Safety Risk Management programs to eliminate air carrier's accidents and incidents. System Safety Risk Management programs was initial implemented with all CFR Part 121 air carriers and are now being applied to CFR Part 135 air carriers.

The FAA reached the limit of its ability of utilizing compliance-based oversight programs in 1996 for CFR Part 121 air carriers. Compliance-based oversight program repeated the same surveillance activities without identifying the actual root causes that could lead to an unsafe operating practice and/or accident. It was based on only looking at meeting the minimum standards established by the rules and regulations. To react to any identified unsafe condition, new rules and regulations had to be enacted, which could expand over many years. The compliance-based oversight system was not an effective means in reducing the causal factors that lead to air carrier accidents.

System Safety Risk Management program, known as Surveillance Evaluation Program (SEP), was implemented in 2001, for CFR Part 121 air carriers to assess how an air carrier operations and maintenance organizations were operating as an integrated whole safety system. For their system to be considered safe, they have to be proactive in identifying potentially unsafe hazards and risk and mitigate it to a safe state. Safety must be built into the air carriers systems by addressing the FAA's primary seven System Elements and their associated sub-elements. Each System Element identifies questions regarding the effectiveness of that system by addressing the following topics of: Responsibility, Authority, Procedures, Control, Process Measurement, and Interfaces.

In 2004 the FAA and the Helicopter Safety Advisory Conference (HSAC) established a workgroup to assess the reasons for the increase of helicopter accidents occurring in the Gulf of Mexico and develop intervention strategies. From this workgroup two of the primary root causes of Gulf of Mexico helicopter accidents are "Operator's not following Proper Procedures as an Operational Organization" and with "Poor Judgment/Incorrect Decisions – Operations (pilots)". These root causes resulted in the development of intervention questions for each of the applicable System Safety Attributes under System Safety Element 4.2.3, FLIGHTCREWMENBER TRAINING.

The primary Safety Attribute questions defined within the System Safety Element will determine if an Operator's Policies and Procedures are adequately defined in having a System Safety program; the ability to identify Risk in its daily operations; and being able to mitigate that risk to prevent the future occurrences and/or accidents.

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ELEMENT SUMMARY INFORMATION

A "YES" response to the questions means compliance with the statement or indicates the requirements were met. A "NO" response always indicates a negative response to the question and also means the requirements were not met. The air carrier is not complying with the requirements of the Safety Attribute question or the system is week or inadequate in the area being evaluated. An explanation should always occur with a "NO" response.

Specific Regulator Requirements (SRR):
135.321
135.323
135.324
135.325
135.327
135.329
135.331
135.333
135.335
135.337
135.338
135.339
135.340
135.341
135.343
135.345
135.351
135.347
135.353

Other CFRs and/or FAA Guidance:
FAA Order 8400.10, Volume 3, Chapter 2 – Training Programs and Airman Qualifications
AC 120-35C
PTS FAA-S-8081-16

FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT **4.2.3 Training of Flight Crewmembers** **SECTION 1 – RESPONSIBILITY ATTRIBUTE**	
Objective: To determine if there is a clearly identifiable qualified and knowledgeable person who is accountable for the quality of the Training of Flight Crewmembers.	
To meet the objective, the auditor will accomplish the following task:	
1. Identify the person who is responsible for the quality of the Training of Flight Crewmember process.	
2. Review the description in the manual that delineates the duties and responsibilities of the person.	
3. Evaluate the person's qualifications and work experience (or resume if appropriate).	
4. Review the appropriate organizational chart.	
5. Discuss the Training of Flight Crewmember process with the person.	
To meet the objective, the auditor will determine and record answers to the following questions:	
1. Is there a clearly identifiable person in management who is answerable for quality of the Training of Flight Crewmember processes?	**Yes** **No (explain)**
2. Does the person understand the Procedure Attributes associated with the Training of Flight Crewmembers process?	**Yes** **No (explain)**
3. Does the person understand the Control Attributes associated with the Training of Flight Crewmembers process?	**Yes** **No (explain)**
4. Does the person understand the Process Measurement Attributes associated with the Training of Flight Crewmembers process?	**Yes** **No (explain)**
5. Does the person understand the Interface Attributes associated with the Training of Flight Crewmembers process?	**Yes** **No (explain)**
6. Is the responsibility of this position clearly documented in the air carrier's manual?	**Yes** **No (explain)**
7. Are the qualification standards for this position clearly documented?	**Yes** **No (explain)**
8. Are the qualification standards for this position appropriate for the duties that are assigned?	**Yes** **No (explain)**
9. Does the person meet the qualification standards?	**Yes** **No (explain)**
10. Does the person know acknowledge that he/she has responsibility for the Training of Flight Crewmember process?	**Yes** **No (explain)**
11. Does the person know who has the authority to establish and modify the Training of Flight Crewmember process?	**Yes** **No (explain)**

FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT **4.2.3 Training of Flight Crewmembers** **SECTION 2 – AUTHORITY ATTRIBUTE**	
Objective: To determine if there is a clearly identifiable qualified and knowledgeable person who has the authority to establish and modify the Training of Flight Crewmembers process.	
To meet the objective, the auditor will accomplish the following task:	
1. Identify the person who has the authority to establish or modify the Training of Flight Crewmember process.	
2. Review the description in the manual that delineates the duties and responsibilities of the person.	
3. Evaluate the person's qualifications and work experience (or resume if appropriate).	
4. Review the appropriate organizational chart.	
5. Discuss the Training of Flight Crewmember process with the person.	
To meet the objective, the auditor will determine and record answers to the following questions:	
1. Is there a clearly identifiable person who has the authority to establish and modify the air carrier's policies for the Training of Flight Crewmember process?	**Yes** **No (explain)**
2. Does the person understand the Procedure Attributes associated with the Training of Flight Crewmembers process?	**Yes** **No (explain)**
3. Does the person understand the Controls Attributes associated with the Training of Flight Crewmembers process?	**Yes** **No (explain)**
4. Does the person understand the Process Measurement Attributes associated with the Training of Flight Crewmembers process?	**Yes** **No (explain)**
5. Does the person understand the Interface Attributes associated with the Training of Flight Crewmembers process?	**Yes** **No (explain)**
6. Is the authority of this position clearly documented in the air carrier's manual(s)?	**Yes** **No (explain)**
7. Are the qualifications standards for this position clearly documented?	**Yes** **No (explain)**
8. Are the qualification standards for this position appropriate for the duties that are assigned?	**Yes** **No (explain)**
9. Does the person meet the qualifications standard?	**Yes** **No (explain)**
10. Does the person acknowledge that he/she has authority for making changes to the Training of Flight Crewmembers process?	**Yes** **No (explain)**
11. Does the person know who has the responsibility for the Training of Flight Crewmember process?	**Yes** **No (explain)**
12. Are the procedures for delegation of authority clearly documented for the Training of Flight Crewmembers process?	**Yes** **No (explain)**

FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT **4.2.3 Training of Flight Crewmembers** **SECTION 3 – PROCEDURES ATTRIBUTE**	
Objective: To determine if the company has documented procedures for accomplishing the Training of Flight Crewmembers process.	
To meet the objective, the auditor will accomplish the following task:	
1. Review the documented instructions and information related to the Training of Flight Crewmembers process to ensure that they contain who, what, where, when, and how.	
2. Discuss the Training of Flight Crewmembers process with appropriate personnel to gain an understanding of the procedures.	
3. Observe the Training of Flight Crewmembers process with appropriate personnel to gain an understanding of the procedures.	
To meet the objective, the auditor will determine and record answers to the following questions:	
1. Do written procedures exist to achieve the desired result of the Training of Flight Crewmembers process?	**Yes** **No (explain)**
1.1. Do written procedures exist to address abnormal training requirements? (e.g., Line Operational Simulations: Line Oriented Flight Training, Special Purpose Operational Training, Line Operational Evaluation. [SRR 135.335, 135.337, 135.338, 135.339,135.340] [AC120-35C]	**Yes** **No (explain)**
1.2. Do written procedures exist to address the maintenance and distribution of training program manuals? [SRR 135.323, 135.324, 135.327, 135.329]	**Yes** **No (explain)**
1.3. Do written procedures exist to ensure that training programs are evaluated for compliance with the CFR? [SRR 135.325]	**Yes** **No (explain)**
1.4. Do written procedures exist to adapt the Flight Crewmember training program to changes in the air carrier's environment? [SRR 135.325]	**Yes** **No (explain)**
1.5. Do written procedures exist to obtain approval prior to implementing changes to training? [SRR 135.325, 135.327]	**Yes** **No (explain)**
2. Do the procedures identify: Who, what, where, when and how?	**Yes** **No (explain)**
3. Are the procedures in compliance with the CFR(s)? [SRR135.325, 135.331, 135.333]	**Yes** **No (explain)**
4. Do the procedures conform to other written guidance (e.g., Operations specifications, FAA Orders, Airworthiness Directives, Advisory circulars, Handbook Bulletins, Directives, and Manufacturer's Recommendations?) [SRR 135.325, 135.327]	**Yes** **No (explain)**
5. Does the air carrier have the resources to support the written procedures for the Training of Flight Crewmember process? [SRR 135.323]	**Yes** **No (explain)**
6. If alternate procedures exist for use during irregular conditions, do they achieve the same desired results as the primary procedures so that an equivalent level of safety is maintained? (e.g., a manual system used as a result of equipment failure.)	**Yes** **No (explain)**
7. Are the procedures published in different manuals relating to the Training of Flight Crewmembers process consistent? [SRR 135.324, 135.325, 135.327]	**Yes** **No (explain)**
8. Does the air carrier have a documented method for assessing the impacts of procedural changes to the Training of Flight Crewmember process?	**Yes** **No (explain)**
9. Does the air carrier train and/or test for Vortex Ring State (LTE and settling with power) during GOMEX / helideck operational environment and demonstrated to recognize it in the aircraft or in a simulator? [PTS FAA-S-8081-16]	**Yes** **No (explain)**

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10. Does the air carrier train to conduct High and Low reconnaissance of the helideck for landings (winds, obstructions, direction of flight on to and off the helideck).	**Yes** **No (explain)**
11. Does the air carrier train to determine rotor clearances from obstacles for specific aircraft?	**Yes** **No (explain)**
12. Does the air carrier train to company procedures for landing more then one aircraft on an obstructed helideck?	**Yes** **No (explain)**
13. Does the air carrier train for visual illusion, spatial disorientation and aircraft recovery method?	**Yes** **No (explain)**
14. Does the air carrier train for high wind conditions?[SRR 135.293(a)(6)]	**Yes** **No (explain)**
15. Does the air carrier have identified ADM/CRM procedures for aircraft pre-flight, post flights, tie-down removals, and check list interruptions?	**Yes** **No (explain)**
16. Does the air carrier have procedures for baggage handling, storage of baggage, and secure doors prior to operation and/or during Rotor in Motion? (equipment modifications for baggage door security status and external mirrors to see baggage door) [SRR 135.87, HSAC 2004-01 Bill of Rights HSAC 2004-03 Pilot Commitment]	**Yes** **No (explain)**
17. Does the air carrier train crewmembers for fueling procedures on eliminating fuel contamination and protecting against fire? [HSAC 2004-2 Fuel Quality Control HSAC 94-1 Rapid Refueling]	**Yes** **No (explain)**
18. Does the air carrier train crewmembers to conduct operational check-flights after maintenance was performed? [SRR 91.407]	**Yes** **No (explain)**
19. Does the air carrier train aircraft systems failures during operations of offshore environment i.e. loss of hydraulics and/or tail rotor malfunction?	**Yes** **No (explain)**
20. Does the air carrier train to Touch-down Auto-Rotations?	**Yes** **No (explain)**
21. Does the air carrier train for different types of helideck and vessel operations on initial and recurrent basis? [SRR 135.293(a)(8), 135.299]	**Yes** **No (explain)**
22. Does the air carrier train for recognizing aircraft specific helideck hazards (i.e. AS-350 skid spring steel strip extension, S-76 tip path plane, and skid versus wheel gear)	**Yes** **No (explain)**
23. Does the air carrier train for environmentally specific (GOMEX) emergency procedures during initial and recurrent basis (i.e. controlled ditching, tail rotor malfunction and inadvertent IMC recovery procedures)? [SRR 135.331]	**Yes** **No (explain)**

FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT **4.2.3 Training of Flight Crewmembers** **SECTION 4 – CONTROL ATTRIBUTE**	
Objective: To determine if checks and restraints are designed into the Training of Flight Crewmembers process to ensure a desired result is achieved.	
To meet the objective, the auditor will accomplish the following task:	
1. Review the documented instructions and information related to the Training of Flight Crewmembers process.	
2. Discuss the Training of Flight Crewmembers process with appropriate personnel to gain an understanding of the controls.	
3. Observe the Training of Flight Crewmembers process to gain an understanding of the controls.	
To meet the objective, the auditor will determine and record answers to the following questions:	
1. Are the following checks and restraints built into the Training of Flight Crewmember process:	
1.1. Does the air carrier have a documented method to ensure that instructors are qualified for the modules they are instructing?	**Yes** **No (explain)**
1.2. Does the air carrier have a documented method to ensure that the required hours of training contain only information specified by regulation?	**Yes** **No (explain)**
1.3. Does the air carrier have a documented method to ensure the currency of the training program?	**Yes** **No (explain)**
1.4. Does the air carrier have a documented method to ensure that only qualified crewmembers are accepted into specific training modules?	**Yes** **No (explain)**
1.5 Does the air carrier have a documented method to ensure that tests accurately measure the training objectives?	**Yes** **No (explain)**
1.6. Does the air carrier have a documented method to ensure continued adequacy of training devices?	**Yes** **No (explain)**
1.7. Does the air carrier have a documented method to ensure that required training is conducted when due?	**Yes** **No (explain)**
2. Do the checks and restraints ensure the desired result is achieved for the Training of Flight Crewmembers process?	**Yes** **No (explain)**
3. Does the air carrier have a documented for assessing the impacts of any changes made to checks and restraints in the Training of Flight Crewmembers process?	**Yes** **No (explain)**
4. Does the air carrier have procedures defined in it's manual how supervisors are held accountable for unsafe acts?	**Yes** **No (explain)**
5. Does the air carrier have the resources to support the checks and restraints for the Training of Flight Crewmembers process?	**Yes** **No (explain)**
6. During an aircrew evaluation, are failures of a crewmember to perform up to standards documented during the evaluation and the type of remedial training that was provided also documented?	**Yes** **No (explain)**

FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT **4.2.3 Training of Flight Crewmembers** **SECTION 5 – PROCESS MEASUREMENT ATTRIBUTE**	
Objective: To determine if operator measures and assesses the Training Flight Crewmembers process to identify and correct problems or potential problems.	
To meet the objective, the auditor will accomplish the following task:	
1. Review the documented instructions and information related to the Training Flight Crewmembers process.	
2. Discuss the Training of Flight Crewmembers process with appropriate personnel to gain an understanding of the process measures.	
3. Observe the Training of Flight Crewmember process to gain an understanding of the controls.	
To meet the objective, the auditor will determine and record answers to the following questions:	
1. Does the air carrier's Training of Flight Crewmembers process include the following process measurements:	
1.1 Does the air carrier use feedback from students, instructors, and others?	**Yes** **No (explain)**
1.2 Does the air carrier evaluate their process for implementing changes to their Flight Crewmember training program?	**Yes** **No (explain)**
1.3. Does the air carrier use phased testing to evaluate students and trends in the quality of the training program?	**Yes** **No (explain)**
1.4. Does the air carrier record instances in which attempts were made to implement changes to the training program prior to obtaining FAA approval?	**Yes** **No (explain)**
1.5 Does the air carrier use the results from their written tests to evaluate their training program?	**Yes** **No (explain)**
1.6. Does the air carrier measure performance improvement of students as a result of recurrent training (e.g., pre-testing and post-testing)?	**Yes** **No (explain)**
1.7. Does the air carrier have and method to provide feedback to the training department when deficiencies in flight crewmembers are identified?	**Yes** **No (explain)**
1.8. Does the air carrier audit its training program (check airman and simulator schools)?	**Yes** **No (explain)**
2. Does the air carrier's Flight Crewmember Training processes include the following Process Measurements?	
2.1. Does the air carrier document their Process Measurement methods and results?	**Yes** **No (explain)**
2.2. Does the air carrier audit process define the decision-making process for action plans to mitigate the identified Hazards and Risk?	**Yes** **No (explain)**
2.3. Does the air carrier take corrective actions to the Procedures or Control Attributes in response to identified Hazards/Risk discovered during audits?	**Yes** **No (explain)**
2.4. Does the air carrier re-evaluate the corrective actions to determine the following: the original hazard, consequence, severity and likelihood have been mitigated effectively?	**Yes** **No (explain)**

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2.5. Does the air carrier conduct an independent audit of Flight Crewmember Training the program at least biannually to ensure that it meet its intended function (person independent of Flight Crewmember Training)?	**Yes** **No (explain)**
2.6. Does the air carrier conduct at least 20% of its audits in a random, unannounced fashion	**Yes** **No (explain)**
3. Does the air carrier conduct nonscheduled (random) line observations of crewmembers [SRR 135.299]	**Yes** **No (explain)**
4. Does the air carrier conduct audits to assess the required Flight Crewmember Training procedures identified under Procedures Attributes?	**Yes** **No (explain)**
5. Does the company retain the records that reflect their Risk Analysis of Hazards and the how the risk was mitigated?	**Yes** **No (explain)**
6. Does the Process Measurement methods appear to be effective?	**Yes** **No (explain)**
7. Does the air carrier use their Process Measurement results to improve their programs?	**Yes** **No (explain)**
8. Are the Process Measurement results accessible to the FAA?	**Yes** **No (explain)**
9. Does the organization that conducts the process measurement have direct access to the person(s) with the responsibility and authority for the Flight Crewmember Training processes?	**Yes** **No (explain)**
10. Does the air carrier have the resources to support the Process Measurement for the Flight Crewmember Training process?	**Yes** **No (explain)**
11. Were all observations unrelated to the Process Measurement satisfactory?	**Yes** **No (explain)**
12. Are the process measurement results accessible to the FAA?	**Yes** **No (explain)**
13. Does the organization that conducts the process measurement have direct access to the person(s) with the responsibility and authority for the Operational Control processes?	**Yes** **No (explain)**
14. Does the air carrier have the resources to support the Process Measurement for the Operational Control process?	**Yes** **No (explain)**
15. Were all observations unrelated to the Process Measurement satisfactory?	**Yes** **No (explain)**
16. Best practices/favorable comments:	

FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT **4.2.3 Training of Flight Crewmembers** **SECTION 6 – INTERFACES ATTRIBUTE**	
Objective: To determine if operator identifies and manages the interactions between the Training of Flight Crewmembers process and the other element processes within the operators organization.	
To meet the objective, the auditor will accomplish the following task:	
1. Review the documented instructions and information related to the Training of Flight Crewmembers process.	
2. Discuss the Training of Flight Crewmembers process with appropriate personnel to gain an understanding of the controls.	
3. Observe the Training of Flight Crewmembers process to gain an understanding of the controls.	
To meet the objective, the auditor will determine and record answers to the following questions:	
1. MEL/CDL/Deferred Maintenance (Element 1.3.5)	**Yes** **No (explain)**
2. Weight and Balance Program. (Element 1.3.17)	**Yes** **No (explain)**
3. Flight crewmember Flight/Duty/Rest Time (Element 6.1.2)	**Yes** **No (explain)**
4. Pilot Operating Limitations/Recent Experience (Element 4.3.1)	**Yes** **No (explain)**
5. Maintenance Control (Element 7.1.6)	**Yes** **No (explain)**
6. Training of Check Airmen and Instructors (Element 4.2.7)	**Yes** **No (explain)**
7. Simulators/Training Devices (Element 4.2.8)	**Yes** **No (explain)**
8. Outsource Crewmember Training (Element 4.2.9)	**Yes** **No (explain)**
9. Appropriate airman/Crewmember checks and Qualification (Element 4.3.2)	**Yes** **No (explain)**
10. Director of Safety (Element 7.1.3)	**Yes** **No (explain)**
11. Director of Operations (Element 7.1.4)	**Yes** **No (explain)**
12. Chief Pilot (Element 7.1.5)	**Yes** **No (explain)**
13. Safety Program (Element 7.2.1)	**Yes** **No (explain)**
14. Manual Currency (Element 2.1.1)	**Yes** **No (explain)**
15. Content consistency Across Manuals (Element 2.1.2)	**Yes** **No (explain)**
16. (Manual) Distribution (Element 2.1.3)	**Yes** **No (explain)**
17. (Manual) Availability (Element 2.1.4)	**Yes** **No (explain)**

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19. List any additional interfaces identified.	**Yes** **No (explain)**
20. Are there written procedures for the use of air carrier personnel in the application of these interfaces?	**Yes** **No (explain)**
21. Are there controls to ensure that interfaces occur?	**Yes** **No (explain)**
22. Are the interfaces between the Training of Flight Crewmembers process and other processes treated consistently in the Manual(s)?	**Yes** **No (explain)**