FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT
SAFETY ELEMENT 1.3.4 – REQUIRED INSPECTION ITEMS (RII) JOB AID

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 four of the primary root causes of Gulf of Mexico Helicopter accidents were; "Failure of Equipment/Components", "Lack of Maintenance Supervision", "Lack of Proper Procedures – Maintenance", and "Not Following Proper Procedures – Maintenance". These root causes resulted in the development of intervention questions for each of the applicable System Safety Attributes under System Safety Element 1.3.4 REQUIRED INSPECTION ITEMS (RII).

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.

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):
- 135.411(a)(2) and (b) Applicability of Maintenance Programs
- 135.413 Responsibility For Airworthiness
- 135.419 Approved Aircraft Inspection Program
- 135.424 Maintenance, Preventive Maintenance, and Alteration Organization
- 135.425 Maintenance, Preventive Maintenance, and Alteration Programs
- 135.427 Manual Requirements
- 135.429 Required Inspection Personnel`

Other CFRs and/or FAA Guidance:
FAA Order 8300.10, Volume 2, Chapter 64, "Evaluate Continuous Airworthiness Maintenance Program/Revision"
FAA Order 8300.10 Volume 2, Chapter 69, "Evaluate Part121/135 Outsource Maintenance Arrangement"
FAA Order 8300.10 Volume 2, Chapter 221, "Conduct Evaluation of Operator/Applicant's Maintenance Facility"
FAA Order 8300.10 Volume 3, Chapter 2, "Conduct Spot Inspection Of Operator's Aircraft"
FAA Order 8300.10 Volume 3, Chapter 36, "Monitor Continuous Airworthiness Maintenance Program/Revision"
FAA Order 8300.10 Volume 3, Chapter 42, "Inspect Part 121/135 (Ten or More) and Part 129 Operator's Maintenance Records"
AC 120-16C Continuous Airworthiness Maintenance Programs

FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT	
1.3.4 REQUIRED INSPECTION ITEMS (RII)	
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 process.

To meet the objective, the auditor will accomplish the following task:

1. Identify the person who is responsible for the quality of the Required Inspection Item (RII) 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 Required Inspection Item (RII) 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 Required Inspection Item (RII) processes?	**Yes** **No (explain)**
2. Does the person understand the Procedure Attributes associated with the Required Inspection Item (RII) process?	**Yes** **No (explain)**
3. Does the person understand the Control Attributes associated with the Required Inspection Item (RII) process?	**Yes** **No (explain)**
4. Does the person understand the Process Measurement Attributes associated with the Required Inspection Item (RII) process?	**Yes** **No (explain)**
5. Does the person understand the Interface Attributes associated with the Required Inspection Item (RII) process?	**Yes** **No (explain)**
6. Are the duties and the responsibilities for this position clearly documented in the air carrier's manual(s)?	**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 acknowledge who has the responsibility for the Required Inspection Item (RII) process?	**Yes** **No (explain)**
11. Does the person know who has authority to establish and modify the Required Inspection Item (RII) process?	**Yes** **No (explain)**

FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT 1.3.4 REQUIRED INSPECTION ITEMS (RII) 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 Required Inspection Item (RII) processes.	
To meet the objective, the auditor will accomplish the following task:	
1. Identify the person who has the authority to establish or modify the Required Inspection Item (RII) 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 Required Inspection Item (RII) 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 authority to establish and modify the air carrier's policies for the Required Inspection Item (RII) process?	**Yes** **No (explain)**
2. Does the person understand the Procedure Attributes associated with the Required Inspection Item (RII) process?	**Yes** **No (explain)**
3. Does the person understand the Control Attributes associated with the Required Inspection Item (RII) process?	**Yes** **No (explain)**
4. Does the person understand the Process Measurement Attributes associated with the Required Inspection Item (RII) process?	**Yes** **No (explain)**
5. Does the person understand the Interface Attributes associated with Required Inspection Item (RII) 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 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 acknowledge that he/she has authority for the Required Inspection Item (RII) process?	**Yes** **No (explain)**
10. Does the individual know who has the responsibility for the Required Inspection Item (RII) process?	**Yes** **No (explain)**
11. Are the procedures for delegation of authority clearly documented for the Required Inspection Item (RII) process?	**Yes** **No (explain)**

FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT
1.3.4 REQUIRED INSPECTION ITEMS (RII)
SECTION 3 – PROCEDURES ATTRIBUTE

Objective: To determine if the company has documented procedures for accomplishing Required Inspection Item (RII) process.

To meet the objective, the auditor will accomplish the following task:

1. Review the documented instructions and information related to the Required Inspection Item (RII) process to ensure that they contain who, what, where, when, and how.

2. Review the FAA Guidance and Specific Regulatory Requirements (SRR) included in the supplemental information section of this SAI.

3. Discuss the Required Inspection Item (RII) process with appropriate personnel to gain an understanding of the procedures.

4. Observe the Required Inspection Item (RII) 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 meet the specific regulatory and FAA policy requirements for a Required Inspection Item (RII) process?

1.1	Does the air carrier's manual describe an adequate organization or a chart for the performance of required inspections items? (SRR 135.424 (b) and 135.427(a))	**Yes** **No (explain)**
1.2	Does the air carrier's manual provide a current listing of persons with who are trained, qualified, and authorized to perform RII? (SRR 135.429(e))	**Yes** **No (explain)**
1.3	Does the air carrier's manual provide a separation of required inspection functions from the other maintenance, preventive maintenance, and alteration functions below the level administrative control at which overall responsibility for other maintenance, preventive maintenance and alteration functions are being exercised? (SRR 135.424(c))	**Yes** **No (explain)**
1.4	Does the air carrier's manual require the person performing a RII to be appropriately certificated, properly trained, qualified and authorized? (SRR 135.424(a))	**Yes** **No (explain)**
1.5	Does the air carrier's manual provide procedure that the person performing a RII is under the supervision and control of an inspection unit or department? (SRR 135.424(b))	**Yes** **No (explain)**
1.6	Does the air carrier's manual provide procedures to prevent a person that accomplishes an item of work to perform the required inspection item on the same item of work? (SRR 135.424(c) and 135.427(b)(7))	**Yes** **No (explain)**
1.7	Does the air carrier's manual define the items of maintenance and alteration that must be identified as Required Inspection Items that could result in a failure, malfunction, or defect endangering the safe operations of the helicopter if not performed properly or if improper parts or materials are used? (SRR 135.427(b)(2))	**Yes** **No (explain)**
1.8	Does the air carrier's manual define procedures for the reinspection of work performed under previous required inspection findings (buy-back procedures)? (SRR 135.427(4))	**Yes** **No (explain)**

FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT
1.3.4 REQUIRED INSPECTION ITEMS (RII)
SECTION 3 – PROCEDURES ATTRIBUTE

1.9	Does air carrier's inspection program define the procedures, standards, and limits necessary for acceptance or rejection of the items required to be inspected? (SRR 135.427 (5))	**Yes** **No (explain)**
1.10	Does the air carrier's manual define procedures to prevent any decision of an inspector regarding RII from being countermanded by persons other than supervisory personnel of the inspection unit or department? (SRR 135.427(b)(8))	**Yes** **No (explain)**
1.11	Does the air carrier's manual define procedures to ensure that required inspection items that are not completed as a result of work interruptions are properly competed before the helicopter is released to service? (SRR 135.427 (b)(9))	**Yes** **No (explain)**
1.12	Does the air carrier's manual define procedures to allow rotorcraft pilots to conduct RII, as a result of a mechanical interruption, while operating from remote areas or sites? (SRR 135.429(d)(1)(2)(3))	**Yes** **No (explain)**
1.13	Does the air carrier's manual define procedures to inspect each item that was inspected by a rotorcraft pilot, after each flight, until it is inspected by an appropriated certificated mechanic (RII authorized) other then the one who performed the work (SRR135.4299(d)(4)	**Yes** **No (explain)**

FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT **1.3.4 REQUIRED INSPECTION ITEMS (RII)** **SECTION 4 – CONTROL ATTRIBUTE**	
Objective: To determine if checks and restraints are designed into the Required Inspection Items (RII) 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 Required Inspection Items (RII) process.	
2. Discuss the Required Inspection Items (RII) process with appropriate personnel to gain an understanding of the controls.	
3. Observe the Required Inspection Items (RII) 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 Required Inspection Items (RII)	
1.1 Is there a control in place to ensure that critical Required Inspections Items are performed only by individuals that are fully qualified?	**Yes** **No (explain)**
1.2 Is there a control in place to ensure a current and adequate list of authorized personnel to perform Required Inspection Items?	**Yes** **No (explain)**
1.3 Is there a control in place to ensure that the authorized RII personnel are under the direct supervision of the inspection department while performing all required inspection items?	**Yes** **No (explain)**
1.4 Is there a control in place to ensure that all authorized RII personnel are provided written authorization, to be carried on their person, while conducting required inspections?	**Yes** **No (explain)**
1.5 Are there a controls in place to ensure that required inspection of critical helicopter systems or components were performed with adequate facilities and equipment?	**Yes** **No (explain)**
1.6 Is there control in place to ensure that Required Inspections Items are identified on work documents in accordance with the certificate holders policies and procedures?	**Yes** **No (explain)**
1.7 Is there a control in place to ensure that the certificate holder developed an RII after a repair or alteration to a critical system?	**Yes** **No (explain)**
1.8 Is there a control in place to ensure that Required Inspections Items are accomplished prior to returning the helicopter to service?	**Yes** **No (explain)**
1.9 Is there a control in place to ensure that the person who accomplished the work is not also the person performing the Required Inspection Item?	**Yes** **No (explain)**
1.10 Is there a control in place to ensure that RII rejections are reinspected after the maintenance was corrected?	**Yes** **No (explain)**
1.11 Is there a control in place to prevent an RII rejection from being countermanded by persons other than supervisory personnel of the inspection unit or organization?	**Yes** **No (explain)**
1.12 Is there control in place to ensure RII is completed after work interruptions and prior to releasing a helicopter to service?	**Yes** **No (explain)**
1.13 Does the certificate holder have a documented method for assessing the impact of any changes made to the controls in the Required Inspection Item (RII) process?	**Yes** **No (explain)**

FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT 1.3.4 REQUIRED INSPECTION ITEMS (RII) SECTION 5 – PROCESS MEASUREMENT ATTRIBUTE	
Objective: To determine if operator measures and assesses the Required Inspection Item (RII) 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 Required Inspection Item (RII) process.	
2. Discuss the Required Inspection Item (RII) process with appropriate personnel to gain an understanding of the controls.	
3. Observe the Required Inspection Item (RII) 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 Required Inspection Item (RII) process include the following process measurements?	
1.1. Does the air carrier document their Process Measurement methods and results?	**Yes** **No (explain)**
1.2 Does the air carrier audit process define the decision-making process for action plans to mitigate the identified Hazards and Risk?	**Yes** **No (explain)**
1.3. Does the air carrier take corrective actions to the Procedures or Control Attributes in response to identified Hazards/Risk discovered during the audits?	**Yes** **No (explain)**
1.4. 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)**
1.5. Does the air carrier conduct an independent audits of the RII program at least biannually to ensure that it meet its intended function (audits conducted by persons not associated with RII)?	**Yes** **No (explain)**
1.6. Does the air carrier conduct at least 20% of its audits in a random, unannounced fashion?	**Yes** **No (explain)**
2. Does the Process Measurement reveal when RII personnel were not under the direct supervision of the inspection department or inspection lead person while performing all required inspection items?	**Yes** **No (explain)**
3. Does the process measurement reveal that required inspections were not separated from other maintenance actions?	**Yes** **No (explain)**
4. Does the Process Measurement reveal when RII was required to be performed but was not accomplished prior to releasing the helicopter to service?	**Yes** **No (explain)**
5. Does the process measurement reveal the personnel authorized to conduct RII, carries written authorization, on his person, containing responsibilities, authorities, and limitations while conducting a required inspections?	**Yes** **No (explain)**
6. Does the process measurement reveal that personnel authorized to conduct RII is properly trained and documented in accordance with company procedures?	**Yes** **No (explain)**
7. Does the process measurement reveal the air carrier failed to identify Required Inspection Items on work documents in accordance with air carrier's maintenance program?	**Yes** **No (explain)**
8. Does the process measurement reveal that an RII was countermanded by an unauthorized individual?	**Yes** **No (explain)**
9. Does the process measurement reveal when the air carrier failed to re-inspect rejected items from previous inspections?	**Yes** **No (explain)**
10. Does the company retain the records that reflect their Risk Analysis of Hazards and the how the risk was mitigated?	**Yes** **No (explain)**

FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT **1.3.4 REQUIRED INSPECTION ITEMS (RII)** **SECTION 5 – PROCESS MEASUREMENT ATTRIBUTE**	
11. Does the Process Measurement methods appear to be effective?	**Yes** **No (explain)**
12. Does the air carrier use their Process Measurement results to improve their programs?	**Yes** **No (explain)**
13. Are the Process Measurement results accessible to the FAA?	**Yes** **No (explain)**
14. 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)**
15. Does the air carrier have the resources to support the Process Measurement for the Operational Control process?	**Yes** **No (explain)**
16. Were all observations unrelated to the Process Measurement satisfactory?	**Yes** **No (explain)**
17. Best practices/favorable comments:	

FAA/HSAC PART 135 SYSTEM SAFETY RISK MANAGEMENT
1.3.4 REQUIRED INSPECTION ITEMS (RII)
SECTION 6 – INTERFACES ATTRIBUTE

Objective: To determine if operator identifies and manages the interactions between the Required Inspection Item (RII) process includes safety attributes.

To meet the objective, the auditor will accomplish the following task:

1. Review the documented instructions and information related to the Required Inspection Item (RII) process.

2. Discuss the Required Inspection Item (RII) process with appropriate personnel to gain an understanding of the interfaces.

3. Observe the Required Inspection Item (RII) 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 interfaces identified for the Required Inspection Item (RII) process:

1.1. Aircraft (Element 1.1)	**Yes** **No (explain)**
1.2. Maintenance Organization (Element 1.2)	**Yes** **No (explain)**
1.3. Records and Reporting (Element 1.2)	**Yes** **No (explain)**
1.4. Manual Management (Element 2.1)	**Yes** **No (explain)**
1.5. Maintenance Personnel Qualification (Element 4.1)	**Yes** **No (explain)**
1.6. Maintenance Training Program (Element 4.2.1)	**Yes** **No (explain)**
1.7. RII Training Requirements (Element 4.2.2)	**Yes** **No (explain)**
1.8. Mechanics and Repairmen (Element 4.4)	**Yes** **No (explain)**
1.9. Line Stations (Servicing and Maintenance) (Element 5.1.1)	**Yes** **No (explain)**
1.10. Weather Reporting Facilities/SWARS Stations (Element5.1.2)	**Yes** **No (explain)**
1.11. Altimeter Setting Sources (Element 5.1.4)	**Yes** **No (explain)**
1.12. Director of Maintenance (Element 7.1.1)	**Yes** **No (explain)**
1.13. Chief Inspector (recommended Part 135 for System Safety program) (Element 7.1.2)	**Yes** **No (explain)**
1.14. Director of Safety (recommended Part 135 for System Safety program) (Element 7.1.3)	**Yes** **No (explain)**
1.15. Other programs approved Operations Specifications	**Yes** **No (explain)**
2. List any additional interfaces identified:	**Yes** No (explain)
3. Are there written procedures for the use of air carrier personnel in the application of these interfaces?	**Yes** **No (explain)**
4. Are there controls to ensure that interfaces occur?	**Yes** **No (explain)**