

Element Performance Inspection (EPI) Data Collection Tool

1.3.8 Control of Calibrated Tools and Test Equipment (AW)

ELEMENT SUMMARY INFORMATION

Purpose of this Element (certificate holder's responsibility):

- To provide an inspection program and a program covering other maintenance, preventive maintenance, and alterations that includes procedures, standards, and limits necessary for the periodic inspection and calibration of precision tools, measuring devices, and test equipment.

Objective (FAA oversight):

- To determine the effectiveness of the certificate holder's procedures in meeting the desired output of the process.
- To determine if the certificate holder follows its procedures, controls, process measurements, and interfaces for the Control of Calibrated Tools and Test Equipment process.
- To determine if there were any changes in the personnel identified by the certificate holder as having responsibility and/or authority for the Calibrated Tools and Test Equipment process.

Specific Instructions:

- To accomplish this EPI, the inspector will ensure that the certificate holder adhered to its policies and procedures for the inspection and calibration of precision tools, measuring devices, and test equipment. The inspector will conduct spot checks of inspected and calibrated precision tools, measuring devices, and test equipment used in forming the basis for product acceptance or for making an airworthiness determination and review the associated calibration records.
- Airworthiness determinations means performing an approval for return to service or airworthiness release.
- Standard(s) (calibration standard) encompasses both measurement standards and documentary (paper) standards.
- * Measurement standard is an object, artifact, measurement equipment, system, or experiment that stores, embodies, otherwise provides a physical quantity, which serves as the basis for measurements of the quantity. A primary, secondary, reference or transfer standard used to inspect or calibrate other measurement devices.
- * Paper standard is a document describing the operations and processes that must be performed in order for a particular end to be achieved, including specific specifications.
- Traceability is a characteristic of a calibration, analogous to a pedigree. A traceable calibration is achieved when each measurement standard, in a hierarchy stretching back directly or indirectly to the National Institute of Standards and Technology (NIST), was itself properly calibrated using the appropriate paper standard, and the results properly documented.
- When answering questions 1.7 and 1.18, this review is looking at the calibration records (test reports, inspection/calibration reports, or certificates) generated by the organization that performed the inspection or calibration. Sufficient information means - such as, but not limited to, a traceability statement, measurement standard(s), paper standard(s), environmental condition(s), manufacturer name, part number, serial number, date of inspection/calibration, inspection/calibration details (i.e., organization name, address,

report number, who performed and certified the inspection/calibration, limited calibrations, data sheets attached, etc.).

- When answering questions 1.9 and 1.10, limited calibrations means -
- 1. When a precision tool, measurement device, or test equipment is not calibrated within its full range (specification). For example, a voltmeter has a full range from 0-20,000 volts and the documented evidence reveals it was calibrated only from 0-500 volt range.
- 2. When one or more functions of a multifunctional precision tool, measurement device, or test equipment is not calibrated. For example, a multimeter (single device) that can measure volts, amps, ohms, and temperature was calibrated with the exception of the temperature function.

Related EPIs:

- 1.3.3 Maintenance Facility / Main Maintenance Base (AW)
- 1.3.11 Continuous Analysis and Surveillance (CAS) (AW)
- 5.1.1 Line Stations (AW)
- 5.1.9 RVSM Authorization (AW)

SUPPLEMENTAL INFORMATION

Specific Regulatory Requirements (SRRs):

- SRRs:
 - 121.135(a)(1)
 - 121.135(b)(1)
 - 121.135(b)(2)
 - 121.135(b)(3)
 - 121.367
 - 121.369(b)(5)
 - 43.13(a)
 - 43.13(c)

Related CFRs & FAA Policy/Guidance:

- Related CFRs:
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- FAA Policy/Guidance:
Intentionally Left Blank

EPI Section 1 - Performance Observables	
Objective: The tasks and questions in this section of the data collection tool (DCT) are designed to assist the inspector in determining if the certificate holder follows its written procedures and controls and meets the established performance measures of the process. To accomplish this, questions have been generated to test both the outputs of the process as well as the process itself. Question 1 and its following subquestions are directed at the output(s) of the process, whereas questions 2-6, when answered, should be directed at the process itself.	
Tasks	
	To meet this objective, the inspector must accomplish the following tasks:
1.	Review the information listed in the Supplemental Information section of this DCT.
2.	Review the certificate holder's policies, procedures, instructions, and information for the Control of Calibrated Tools and Test Equipment process.
3.	Review the last accomplished associated safety attribute inspection (SAI) for this element with emphasis on the controls, process measurements, and interface attribute section responses.
4.	Observe the certificate holder's Control of Calibrated Tools and Test Equipment process to gain an understanding of the procedures, instructions, and information.
5.	Discuss the Control of Calibrated Tools and Test Equipment process with the personnel (other than management) who perform the duties and responsibilities required by the program.

Questions		
	To meet this objective, the inspector must answer the following questions:	
1.	Determine whether the following performance measures were met:	
1.1.	<p>Were users of precision tools, measuring devices, or test equipment able to determine the current inspection or calibration status before their use?</p> <p><i>Related Performance JTIs:</i></p> <ol style="list-style-type: none"> 1. Check at the Ramp if the indication i.e. "sticker", of calibration of precision tools is kept with or on the tool, in accordance with the air carrier's procedures. <i>Sources:</i> 121.369(b)(5) 2. Check at the Aircraft that the indication i.e. "sticker", of calibration of precision tools is kept with or on the tool, in accordance with the air carrier's procedures. <i>Sources:</i> 121.369(b)(5) 3. Check at the Ramp if the indication i.e. "sticker", of calibration of measuring devices is kept with or on the tool, in accordance with the air carrier's procedures. <i>Sources:</i> 121.369(b)(5) 4. Check at the Aircraft that the indication i.e. "sticker", of calibration of measuring devices is kept with or on the tool, in accordance with the air carrier's procedures. <i>Sources:</i> 121.369(b)(5) 5. Check at the Ramp if the indication i.e. "sticker", of calibration of test equipment is kept with or on the tool, in accordance with the air carrier's procedures. <i>Sources:</i> 121.369(b)(5) 6. Check at the Aircraft that the indication i.e. "sticker", of calibration of test 	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

	<p>equipment is kept with or on the tool, in accordance with the air carrier's procedures.</p> <p><i>Sources: 121.369(b)(5)</i></p>	
1.2.	Did the certificate holder adequately monitor the Control of Calibrated Tools and Test Equipment process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.3.	Did the certificate holder have the appropriate inspection and calibration standards for the Control of Calibrated Tools and Test Equipment?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.4.	Was the certificate holder's system for the Control of Calibrated Tools and Test Equipment process current?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.5.	Were personnel who performed inspections and calibrations of precision tools, measuring devices, and test equipment properly trained?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.6.	<p>Was the certificate holder's frequency of inspections and calibration of precision tools, measuring devices, and test equipment adequate?</p> <p><i>Related Performance JTIs:</i></p> <ol style="list-style-type: none"> 1. Check at the Air Carrier Operated Maintenance Facility for records that indicate that the certificate holder's system for continuing analysis and surveillance has provided effectiveness and corrective action to the degree and frequency of adjustment and calibration of calibrated tools and test equipment. <i>Sources: 121.373(a)</i> 2. Check at the Records Repository for records that indicate that the certificate holder's system for continuing analysis and surveillance has provided effectiveness and corrective action to the degree and frequency of adjustment and calibration of calibrated tools and test equipment. <i>Sources: 121.373(a)</i> 3. Check at the Air Carriers Specified Location for records that indicate that the certificate holder's system for continuing analysis and surveillance has provided effectiveness and corrective action to the degree and frequency of adjustment and calibration of calibrated tools and test equipment. <i>Sources: 121.373(a)</i> 	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.7.	Did the records (i.e., test reports, inspection/calibration reports, or certificates) provide sufficient information to verify that the measurement standards used for inspections or calibrations of precision tools, measuring devices, and test equipment were traceable (directly or indirectly) to the National Institute of Standards and Technology (NIST) or the manufacturer's standards?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.8.	Were the precision tools, measuring devices, and test equipment used for forming the basis of product acceptance or for making an airworthiness determination within the inspection or calibration intervals?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.9.	Were calibration records of precision tools, measuring devices, and test equipment that have received limited calibrations and are used for forming the basis of product acceptance or making an airworthiness determination identified as limited calibrations?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
1.10.	Were users able to determine, before their use, that limited calibrations were performed on precision tools, measuring devices, or test equipment used for forming the basis for product acceptance or making an airworthiness determination?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable

1.11.	Were in-service precision tools, measuring devices, and test equipment within the inspection and calibration intervals specified in the certificate holder's Control of Calibrated Tools and Test Equipment process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.12.	If foreign-manufactured precision tools, measuring devices, and test equipment were used, were the standards for that equipment approved by the Administrator?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
1.13.	Were foreign-manufactured precision tools, measuring devices, and test equipment used for forming the basis of product acceptance or making an airworthiness determination in accordance with the certificate holder's system?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
1.14.	Were in-service precision tools, measuring devices, and test equipment within the inspection and calibration specifications in accordance with the certificate holder's Control of Calibrated Tools and Test Equipment process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.15.	Were the environmental conditions and controls followed during the inspection and calibration of precision tools, measuring devices, and test equipment?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.16.	Were precision tools, measuring devices, and test equipment that were recalled or removed from service, recalled or removed in accordance with the certificate holder's Control of Calibrated Tools and Test Equipment process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.17.	Were equivalent precision tools, measuring devices, and test equipment used when forming the basis of product acceptance or making an airworthiness determination selected in accordance with the certificate holder's system?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.18.	Did the calibration records for equivalent precision tools, measuring devices, and test equipment reveal the same calibration standards and specifications as recommended by the equipment manufacturer of the aeronautical product?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
1.19.	Were personally-owned precision tools, measuring devices, and test equipment used in accordance with the certificate holder's system?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
1.20.	If personally-owned precision tools, measuring devices, and test equipment were authorized, did that equipment come under the Control of Calibrated Tools and Test Equipment process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
1.21.	Were the storage, handling and transporting of precision tools, measuring devices, and test equipment performed in accordance with the certificate holder's program?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.	<p>Were the certificate holder's policies, procedures, instructions, and information for the Control of Calibrated Tools and Test Equipment process followed?</p> <p><i>Related Performance JTIs:</i></p> <ol style="list-style-type: none"> 1. Check at the Air Carrier Operated Maintenance Facility that personnel authorized by the certificate holder conducting airworthiness inspections are following the Air Carrier's manual including instructions covering standards and limits. <i>Sources:</i> 121.135(b)(19); 121.369(b); 121.369(b)(5) 2. Check at the Geographic Location that personnel authorized by the certificate holder conducting airworthiness inspections are following the Air Carrier's manual including instructions covering standards and limits. <i>Sources:</i> 121.135(b)(19); 121.369(b); 121.369(b)(5) 3. Check at the Outsource Provider that personnel authorized by the certificate holder conducting airworthiness inspections are following the Air Carrier's manual including instructions covering standards and limits . 	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

	<p><i>Sources:</i> 121.135(b)(19); 121.369(b); 121.369(b)(5)</p> <p>4. Check at the Ramp that personnel authorized by the certificate holder conducting airworthiness inspections are following the Air Carrier's manual including instructions covering standards and limits. <i>Sources:</i> 121.135(b)(19); 121.369(b); 121.369(b)(5)</p> <p>5. Check at the Aircraft that personnel authorized by the certificate holder conducting airworthiness inspections are following the Air Carrier's manual including instructions covering standards and limits. <i>Sources:</i> 121.135(b)(19); 121.369(b); 121.369(b)(5)</p>	
3.	Were the Control of Calibrated Tools and Test Equipment process controls followed?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
4.	<p>Did the records for the Control of Calibrated Tools and Test Equipment process comply with the instructions provided by the certificate holder?</p> <p><i>Related Performance JTIs:</i></p> <p>1. Check at the Records Repository that the records of calibration of measuring devices are kept in accordance with the air carrier's procedures. <i>Sources:</i> 121.369(b)(5)</p> <p>2. Check at the Air Carrier Operated Maintenance Facility that the records of calibration of test equipment are kept in accordance with the air carrier's procedures. <i>Sources:</i> 121.369(b)(5)</p> <p>3. Check at the Geographic Location that the records of calibration of test equipment are kept in accordance with the air carrier's procedures. <i>Sources:</i> 121.369(b)(5)</p> <p>4. Check at the Outsource Provider that the records of calibration of test equipment are kept in accordance with the air carrier's procedures. <i>Sources:</i> 121.369(b)(5)</p> <p>5. Check at the Records Repository that the records of calibration of test equipment are kept in accordance with the air carrier's procedures. <i>Sources:</i> 121.369(b)(5)</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
5.	Were the process measurements for the Control of Calibrated Tools and Test Equipment process effective in identifying problems or potential problems and providing corrective action for them?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
6.	Did personnel properly handle the associated interfaces by complying with other written policies, procedures, instructions and information that are related to this element?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

EPI Section 1 - Performance Observables Drop-Down Menu	
1.	Personnel.
2.	Tools and Equipment.
3.	Technical Data.
4.	Procedures, policies or instructions or information.
5.	Materials.
6.	Facilities.
7.	Controls.
8.	Process Measures.
9.	Interfaces.
10.	Desired Outcome.
11.	Other.

EPI Section 2 - Management Responsibility & Authority Observables

Objective: The questions in this section address the responsibility and authority of the process. They are designed to assist the inspector in determining if there is a clearly identifiable, qualified, and knowledgeable person who is responsible for the process, is answerable for the quality of the process, and has the authority to establish and modify the process. (The person with the authority may or may not be the person with the responsibility.)

Tasks

	To meet this objective, the inspector must accomplish the following tasks:
	NOTE: If no personnel or major program changes (as defined by the principal inspector (PI)) affecting the responsibility or authority attributes for this element have occurred since the last SAI and/or EPI was accomplished, then do not perform tasks 3-6, below. Answer questions 1 and 2, below, and provide the name/title.
1.	Identify the person who has overall responsibility for the Control of Calibrated Tools and Test Equipment process.
2.	Identify the person who has overall authority for the Control of Calibrated Tools and Test Equipment process.
3.	Review the duties and responsibilities for those who manage the Control of Calibrated Tools and Test Equipment process.
4.	Review the appropriate organizational chart.
5.	Discuss the Control of Calibrated Tools and Test Equipment process with the management personnel identified in tasks 1 and 2.
6.	Evaluate the qualifications and work experience of the management personnel identified in tasks 1 and 2.

Questions

	To meet this objective, the inspector must answer the following questions:	
1.	Is there a clearly identified person who is responsible for the quality of the Control of Calibrated Tools and Test Equipment process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain Name/Title:
2.	Is there a clearly identified person who has authority to establish and modify the certificate holder's policies, procedures, instructions, and information for the Control of Calibrated Tools and Test Equipment process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain Name/Title:
3.	Does the responsible person know that he/she has responsibility for the Control of Calibrated Tools and Test Equipment process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> No Change
4.	Does the person with authority know that he/she has authority for the Control of Calibrated Tools and Test Equipment process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> No Change
5.	Does the person with responsibility for the Control of Calibrated Tools and Test Equipment process meet the qualification standards?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> No Change
6.	Does the person with authority to establish and modify the Control of Calibrated	<input type="checkbox"/> Yes

	Tools and Test Equipment process meet the qualification standards?	<input type="checkbox"/> No, Explain <input type="checkbox"/> No Change
7.	Does the person with responsibility understand the controls, process measurements, and interfaces associated with the Control of Calibrated Tools and Test Equipment process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> No Change
8.	Does the person with authority understand the controls, process measurements, and interfaces associated with the Control of Calibrated Tools and Test Equipment process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> No Change
9.	Does the responsible person know who has authority to establish and modify the Control of Calibrated Tools and Test Equipment process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> No Change
10.	Does the individual with authority know who has the responsibility for the Control of Calibrated Tools and Test Equipment process?	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> No Change

EPI Section 2 - Management Responsibility & Authority Observables Drop-Down Menu	
1.	Assignment of responsibility.
2.	Assignment of authority.
3.	Does not understand procedures, policies or instructions and information.
4.	Does not understand controls.
5.	Does not understand process measurements.
6.	Does not understand interfaces.
7.	Span of control.
8.	Position vacant.
9.	Other.