



# On-line Job Aid for Evaluating A Repair Facility Conducting Composite Repairs

**Contact Information:**

FAA Headquarters  
Aircraft Maintenance Division (AFS-300)  
950 L'Enfant Plaza, SW, 5<sup>th</sup> Floor  
Washington, DC 20024  
(202) 385-6399

**1. Introduction.** This job aid is a tool you, an aviation safety inspector (ASI), can use to evaluate a repair facility conducting composite repairs. We, the Federal Aviation Administration (FAA), organized this job aid around eight elements that can help you assess the repair facility's ability to perform composite repairs. These eight elements comprise a systematic process that can be utilized in evaluating any composite repair facility, regardless of its size and complexity.

## **2. The Eight Elements and Applicable Issues/Questions.**

- **Organization.** Does the repair facility have a sufficient organization to successfully perform airworthy composite repairs? Has the responsibilities and duties of each position been documented. Does the repair facility have a documented quality system?
- **Training Programs.** Does the repair facility have a training program? Does the training program cover all the employees, including management personnel, involved in composite repairs?
- **Facilities.** This involves the general physical condition of the facility; e.g., housekeeping, storage, safety, consumable management. Does the repair facility have the necessary space conditions to perform composite repairs?
- **Repair Technical Data.** Does the repair facility have procedures and processes to use for repairs, including Structural Repair Manuals (SRM) access and implementation processes?
- **Repair Procedures.** Does the repair facility follow its procedures outlined in its quality program to ensure repairs are properly completed and documented? Are there procedures in place to follow the article through the repair process?
- **Repair Records.** Does the repair facility create a permanent record by using written procedures, processes, specifications, and/or methods to document the repairs and the technical data used for the repair?
- **Equipment, Tooling, and Calibration.** Does the repair facility have and maintain the necessary equipment for the composite repairs performed? Does the repair facility have the quality controls and procedures to produce the requisite tooling required for the repairs performed? Does the repair facility have an autoclave, and are the autoclave procedures consistent with the technical data used? Does the repair facility meet all of the required standards for the equipment used, including the autoclave and any material testing equipment, and are the standards consistent with the technical data employed for the repairs performed?
- **Material Handling.** Does the repair facility have controls and processes in place for the purchasing, receiving, and handling functions of all materials used?

### **3. Using this Job Aid.**

**A.** These eight elements represent the underlying system that a satisfactory composite repair facility needs to have in place. This job aid provides you with a standardized approach to assess such a facility.

**B.** You don't need to address or have an affirmative response to all the questions in this job aid in all situations. However, the job aid may indicate that a further in-depth evaluation of the repair facility is needed.

**C.** We provide this job aid to you as a preparation tool for evaluating repair facilities that conduct composite repairs. You can use it as a check-off form during on-site visits.

### **4. Organization of this Job Aid.**

**A.** This job aid includes a section to record pertinent information about the repair facility, followed by questions to evaluate each of the eight elements. Not all the questions in the eight elements are applicable to every repair facility. Each element has an area for remarks associated with that question. For example, the repair technical data section includes specific questions used to evaluate the validity of the data used for repairs and the application of those standards within the repair facility.

**B.** The answers to the questions in each element depend on the level of sophistication of the repair facility and the complexity of the repairs performed. Any *Yes* answers to all questions may indicate a repair facility that can perform complex operations. Any *No* answers to certain questions may only indicate that the repair facility is very basic in concept and can only perform simple repairs to composite components. In either case, you should include remarks to explain any *No* answers, elaborate on *Yes* answers, and expand on any *Not Applicable* answers.

## Section A: General

**Repair Facility/ Location:**

---

---

**Dates: Started**

**Completed**

Inspector	Repair Station Representatives	Title

<b>Certificated Mechanics</b>	
<b>Non-Certificated Mechanics</b>	
<b>Repairmen</b>	
<b>Total Employees</b>	

**Facility Description:**

---

---

**Work Performed:**

---

---

**Notes:**

---

---

## Section B: Organization

	YES/NO	N/A	REMARKS
1. Does the repair facility have adequate personnel who supervise, inspect, and perform the work?			
2. Does the repair facility have sufficient number of employees to perform all the processes required for composite repairs?			
3. Does the repair facility ensure that all personnel have specified training and qualifications for each process; i.e., lay-up, mapping damage, process records, and controls?			
4. Does each repair technician have experience or formal training for each process?			
5. Does the repair facility have an engineering department (or contract with a third party engineering firm) to develop independent repair data?			
6. Does the repair facility have a Quality Management System to ensure all activities are carried out as per specified procedures?			
7. Does the repair facility have approved/accepted document defining duties and responsibilities of management personnel?			
8. Does the repair facility have an approved/accepted document for internal audits?			
9. Does the repair facility have an approved/accepted Quality Manual (QM)?			
10. Does the repair facility have Nondestructive Inspections (NDI) outsourced to vendors?			
11. Does the repair facility have audit procedures for vendors?			
12. Does the repair facility have repairs/maintenance/preventative maintenance/alteration outsourced to vendors?			

### Section C: Training Programs

	YES/NO	N/A	REMARKS
1. Does the repair facility have a training program manual?			
2. Does the repair facility have a procedure to revise the training program manual?			
3. Does each employee receive training commensurate to the employee's job description, and does it include initial and recurrent training?			
4. Does the repair facility maintain training records and document the dates of the training?			
5. Does the training ensure the inspection personnel are familiar with the inspection methods, techniques, practices, equipment, and tools used to determine the airworthiness of the article on which maintenance was performed?			
6. Does the repair facility have a procedure to evaluate and qualify instructors?			
7. Does the repair facility document training programs and qualified personnel lists (e.g., inspectors, return to service)?			
8. Does the repair facility provide the training records specific to equipment used (e.g., hot bonders, autoclave; ovens; waterjet cutters; cut saws; grinders; etc)?			
9. Does the repair facility ensure NDI personnel are trained and qualified in accordance with accepted industry practices?			

### Section D: Repair Facilities

	YES/NO	N/A	REMARKS
1. Does the repair facility have a quality control system?			
2. Do the repair facility personnel follow the quality control system?			
3. Does the quality control system have procedures for revising the system?			
4. Does the repair facility's quality control manual have current procedures and instructions to ensure continuity of inspection from the incoming inspections to the final inspections, prior to return to service of any item?			
5. Does the repair facility inspect each article that it maintains with the inspection system contained in the facilities quality system?			
6. Does the repair facility have suitable facilities for properly storing, segregating, and protecting materials, parts, and supplies? a. Does the repair facility have suitable facilities for properly protecting parts and subassemblies during disassembly, cleaning, inspection, repair, alteration, and assembly? b. What are the conditions (e.g., cleanness, relative humidity, air temperature, etc.) of the repair facility? c. Does the repair facility have the necessary room to perform the repair processes?			
7. Does the repair facility have an autoclave?			
8. Does the repair facility have the unique environmental requirements for all processes utilized? a. Does the repair facility have and utilize a designated clean room? b. Does the repair facility retain documentation that records temperature/humidity during repairs? c. Does the repair facility have sufficient cold storage for consumables?			
9. Does the repair facility have special tools and equipment storage to ensure all required items are controlled?			
10. Does the repair facility segregate discrepant parts?			
11. Does the repair facility have a hazardous materials control program?			
12. Does the repair facility have areas for drying parts prior to repair?			

### Section E: Repair Technical Data

	YES/NO	N/A	REMARKS
1. Does the repair facility have current technical data that is utilized during the performance of maintenance? a. Original equipment manufacturer (OEM) generated? b. In-house generated?			
2. Does the repair facility have a system to revise technical data to include electronic versions? a. OEM generated? b. In-house generated?			
3. Does the repair facility utilize technical data from air carriers and is that data current and approved?			
4. Does the repair facility make technical data available to all personnel?			
6. Does the repair facility have SRMs available?			
7. Does the repair facility have Illustrated Part Catalogs available?			
8. Does the repair facility have the OEM's drawings available?			
9. Does the repair facility have the OEM's process specifications available?			
10. Does the repair facility utilize approved data for all major repairs and major alterations?			



### Section F: Repair Procedures

	YES/NO	N/A	REMARKS
1. Does the repair facility follow technical data in repair processes?			
2. Does the repair facility utilize NDI and test equipment per the approved technical data for a repair to determine extent of damage?			
3. Does the repair facility utilize clean rooms, drying areas, etc., during repair processes?			
4. Does the repair facility control temperature and humidity as required for a specific repair?			
5. Does the repair facility perform periodic inspections of works in progress?			
6. Does the repair facility inspect the finished repair utilizing NDI to ensure complete bonding of the repair area and surrounding areas, and to properly return the article to service?			

### Section G: Repair Records

	YES/NO	N/A	REMARKS
1. Does the repair facility have a procedure that describes the required records and recordkeeping system?			
2. Does the repair facility have documents defining procedures for discrepancies?			
3. Does the repair facility include all of the technical references, material specifications, and process specifications utilized for a repair in the work order? For example: <ul style="list-style-type: none"> <li>a. Cleaning process,</li> <li>b. Water break test,</li> <li>c. Strip chart from hot bonder,</li> <li>d. Pressure chart for vacuum bagging,</li> <li>e. Lay-up plies and orientation,</li> <li>f. NDI procedures utilized, and</li> <li>g. A copy of FAA Form 8110-3 or 8100-9 included with the records for a major repair or alteration.</li> </ul>			

## Section H: Equipment, Tooling, and Calibration

	YES/NO	N/A	REMARKS
1. Does the repair facility have the tools qualified in a controlled manner in the facility?			
2. Does the repair facility fulfill the tool and equipment manufacturer's requirements for control, maintenance, use, and storage?			
3. Does the repair facility have all tooling and test equipment calibrated and traceable to a standard recommended by the manufacturer and the National Institute of Standards and Technology (NIST), or other national authority?			
4. Does the calibration and tracking system include employee-owned tooling and test equipment?			
5. Does the repair facility maintain a list of all calibrated equipment by name, model, or part number; serial number; date of calibration; and next calibration due date?			
6. Does the repair facility identify tooling and test equipment to prevent the inadvertent use of non-calibrated equipment in the maintenance process?			
7. Does the repair facility identify equipment and tools that are not used to make airworthiness determinations?			
8. Does the repair facility perform in-house calibration of its equipment and tools?			
9. Does the repair facility verify that test and measuring equipment to be used as an equivalent piece of equipment are recommended by an article's manufacturer, and that it meets the calibration standards recommended by the manufacturer of the article being measured or tested?			
10. Does the repair facility have a process for tooling qualification (e.g., molds, mandrels, fixtures, etc.)? a. Process specification, b. Conformity checks, c. Materials, and d. Testing.			

### Section I: Material Handling

	YES/NO	N/A	REMARKS
1. Does the repair facility have designated storage areas for raw materials?			
2. Does the repair facility have raw materials clearly labeled?			
3. Does the repair facility have raw materials separated based on individual material specifications?			
4. Does the repair facility have a tracking procedure for temperature and humidity control of materials from the manufacturer to the facility storage area?			
5. Does the repair facility retain documentation of batch/roll numbers of all composite materials utilized for repairs?			
6. Does the repair facility have an approved/accepted document defining material qualification processes?			
7. Does the repair facility have an approved/accepted document defining material testing processes?			
8. Does the repair facility have designated storage areas for spare parts?			
9. Does the repair facility have procedures in place to document material in/out times?			
10. Does the repair facility have all repair materials approved/accepted by OEMs?			
11. Does the repair facility have a process to control shelf life of consumable materials?			