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Advisory Circular

Subject: Continuous Airworthiness
Maintenance Program (CAMP)
Training Program

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Change:

This advisory circular (AC) provides Federal Aviation Administration (FAA)-acceptable information to use in the development of the required maintenance training program element of a Continuous Airworthiness Maintenance Program (CAMP).

The AC contains methods that operators of aircraft under Title 14 of the Code of Federal Regulations (14 CFR) parts [121](#), [135](#), and [91](#) subpart [K](#) (part 91K) (fractional ownership operations) that maintain their aircraft under a CAMP may use to comply with the maintenance training requirements of the regulations. Operators may elect to follow an alternate method, provided it is acceptable to the FAA. Because the means of compliance we present in this AC is not mandatory, the term “should” applies only if you choose to follow these particular methods. Operators must tailor their maintenance training program to their specific operation, personnel, management structure, and organizational needs. The contents of this document do not have the force and effect of law and are not meant to bind the public in any way, and the document is intended only to provide information to the public regarding existing requirements under the law or agency policies.

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CHAPTER 1 GENERAL

- 1.1 Purpose of This Advisory Circular (AC).** This AC explains the scope and detail the Federal Aviation Administration (FAA) expects of a Continuous Airworthiness Maintenance Program (CAMP) Training Program and offers a means (but not the only means) of compliance with Title 14 of the Code of Federal Regulations (14 CFR) part [91](#), § [91.1433](#); part [121](#), § [121.375](#); and part [135](#), § [135.433](#), the regulations requiring maintenance and preventive maintenance training programs.
- 1.2 Terms We Use in This AC.**
- 1.2.1** When we use “must” or “will” in this AC, we are referencing actual regulatory requirements.
- 1.2.2** When we use “we,” “us,” or “our” in this AC, we mean the FAA. When we use “you,” “your,” or “yours,” we mean you, the air carrier certificate holder (CH), or the part 91 subpart [K](#) (part 91K) program manager.
- 1.2.3** We use the term “person” as defined in 14 CFR part [1](#), § [1.1](#), meaning an individual, firm, partnership, corporation, company, association, joint-stock association, or governmental entity. It includes a trustee, receiver, assignee, or similar representative of any of them.
- 1.2.4** When we use the acronym “CAMP,” we are referring to an “Aircraft Maintenance – Continuous Airworthiness Maintenance Program (CAMP) Authorization” the FAA issues to you via operations specification (OpSpec) D072 if you are a part 121 or 135 air carrier, or via management specification (MSpec) D072 if you are a part 91K fractional ownership operations program manager. A table within each D072 specification identifies a document or set of documents that describe comprehensively, and in detail, your maintenance program design. The table associates your document(s) (i.e., your maintenance program) with the specific make/model/series (M/M/S) aircraft you intend to maintain by following it. FAA authorization of a CAMP includes acceptance that the CAMP Training Program is compliant with §§ 91.1433, 121.375, and 135.433.
- Note:** Incorporation by reference: instead of repeating information contained in another document, a CAMP operator may incorporate information from a document or part thereof, by referring and/or providing links to it in the text of its CAMP manual.
- 1.2.5** The regulations related to CAMP authorizations and use are essentially the same for parts 91K, 121, and 135 operations. Therefore, phrases such as “CAMP operators,” “CAMP operations,” “CAMP organization,” and “CAMP Training Program” address parts 91K, 121, and 135 operations that maintain aircraft subject to a CAMP.
- 1.3 Applicability.** A CAMP authorization is a requirement for all CHs operating under part 121. A CAMP authorization is also the preferred means of meeting the continuing maintenance requirements of § [135.425](#) for part 135 aircraft that are type certificated for a passenger-seating configuration, excluding any pilot seat, of 10 seats or more. It is an

option for part 135 CHs who are not otherwise required to maintain their aircraft under a CAMP, as well as an option for part 91K fractional ownership operations.

- 1.4 Audience.** This AC applies to persons who obtain MSpec or OpSpec D072. To receive this authorization, you must have a CAMP Training Program that is acceptable to the FAA.
- 1.5 Where You Can Find This AC.** You can find this AC on the FAA’s website at https://www.faa.gov/regulations_policies/advisory_circulars and the Dynamic Regulatory System (DRS) at <https://drs.faa.gov>.
- 1.6 What is “Competent” as Used in the Regulations and This AC?** Competent, as used in §§ [91.1425](#), 91.1433, [121.367](#), 121.375, 135.425, and 135.433, means a measurable pattern of knowledge, skills, and abilities; as well as past behavioral experience and expertise that is relevant to an individual’s specific duty, task, or job assignment. The specific competency may be substantiated by a certificate, authorization, training record, résumé, or some other form of documentation.
- 1.6.1 General and Technical Competencies.** Competencies tend to be either general or technical. General competencies reflect the cognitive and social capabilities (e.g., problem solving, interpersonal skills) required for job performance in a variety of occupations. On the other hand, technical competencies are specific and require you to tailor them to the particular knowledge and skill requirements necessary for a specific job.
- 1.6.2 A Competent Person.** A competent person knows how to determine the adequacy of the work they do and, if required, the work others do in accordance with your procedures. A competent person has a full understanding of their assigned duties and authority and fully understands their part in your overarching responsibility to ensure airworthiness.
- 1.7 What is the Regulatory Basis for the CAMP Training Program Element?** Sections 91.1433, 121.375, and 135.433 provide the direct requirements for you to have a maintenance training program. In addition, you are required to ensure the provision of competent personnel to perform maintenance, preventive maintenance, and alterations (§§ [91.1427](#), [121.369](#), and [135.427](#)). Title 14 CFR part [119](#), §§ [119.65](#) and [119.69](#) require specific training requirements for parts 121 and 135 CHs’ management and technical personnel and anyone in a position to exercise control over operations.
- 1.8 Who Accepts CAMP Training?** The FAA must accept your training program’s documented design and validate its performance before issuing a D072 authorization. You should assess, accept, and authorize contractor maintenance training when you choose to use them. The FAA expects your documented training program design will cover the access, use, and content of your CAMP manual; your assessment methods that ensure a person is fully informed and competent; training recordkeeping; acceptance of contract maintenance programs when you choose to use them; and a solid interface with your Continuing Analysis and Surveillance System (CASS).

- 1.8.1** Basic Content of the Maintenance Manual. The emphasis and significance of your manual cannot be overstated. Your CAMP is unique to you, and therefore §§ [91.1023](#), [121.133](#), and [135.21](#), in conjunction with §§ [91.1437](#), 121.369, and 135.427, require you to produce a manual that reflects your design. Your manual provides personnel with your direction, procedures, instructions, guidance, and information that you require them to follow in order for you to meet your primary responsibility requirements and maintain safe operations. Therefore, an acceptable CAMP Training Program must derive its basic content and curriculum from your CAMP manual and will address the unique nature and requirements your CAMP requires. The FAA should be able to identify some form of introductory training that ensures each person knows how to access the CAMP manual part(s) that is relevant to them. The CAMP Maintenance and Preventive Maintenance Training Program must inform, teach, reinforce, and emphasize the methods, techniques, and practices of your CAMP manual.
- 1.8.2** Method to Ensure a Person is Fully Informed and Competent. A CAMP Training Program is your means to present, explain, and ensure maintenance personnel understand the methods, techniques, and practices defined in your manual. Your CAMP Training Program is your means to emphasize to those you employ, contract with, and authorize to perform maintenance (including inspection), preventive maintenance, and alterations that they must do so in accordance with your manual. Your CAMP Training Program is where you determine personnel are fully informed and competent based on your standards and expectations. The method you use to meet the requirements of §§ 91.1425, 121.367, and 135.425 to provide competent personnel must be documented in your CAMP manual per §§ 91.1427, 121.369, and 135.427.
- 1.8.3** Training Recordkeeping. The FAA expects your CAMP Training Program to gather, produce, and maintain training records of your employees and include a method that explains how you oversee and verify contractor employee records. Training records validate that personnel have a full understanding and are competent. These records should show that you or your contract provider have considered past and present training, experience, and certifications; compared them to the competency standards you have set in your manual; and provided additional training as required to fill any identified knowledge or competency gaps.
- 1.8.4** Contract Provider Training Programs. You should assess, accept, and authorize contractor maintenance training when you choose to use them. The regulations accommodate the significant safety benefits afforded by contract maintenance providers, especially in highly technical and specialized areas of maintenance; however, doing so induces risks that the CAMP operator needs to control and explain within its CAMP manual. The CAMP operator has overarching responsibility for training regardless of whose program it is or who is delivering it. Sections 91.1427, [121.368](#), 121.369(b)(10), [135.426](#), and 135.427(b)(10) require your manual to include your methods to evaluate maintenance provider training, supplement it as is necessary, accept its content and delivery methods, authorize its use through a maintenance provider agreement or method your manual describes, and continuously verify training performance and effectiveness.

- 1.8.5 CASS Interface.** Sections [91.1431](#), [121.373](#), and [135.431](#) require CHs to establish and maintain a system for the continuing analysis and surveillance of the performance and effectiveness of its inspection program and the program covering other maintenance, preventive maintenance, and alterations. This includes the correction of any deficiency in those programs, regardless of whether those programs are carried out by the CH or by another person. Therefore, regardless of whether your CAMP Training Program is of your design or a contract maintenance provider training program you accept as part of your design, your CASS must be able to influence your training when it identifies or associates root cause deficiencies with your training program design or delivery of your maintenance training. You are responsible for ensuring that maintenance, preventive maintenance, and alterations performed by your maintenance employees, or by other persons for you, is performed in accordance with your manual.
- 1.9 Who Receives CAMP Training?** The CAMP Training Program applies to your entire maintenance organization. Sections [91.1423](#), [121.365](#), and [135.423](#) require an organization to adequately perform maintenance, preventive maintenance, alterations, and required inspections. Sections [91.1427](#), [121.369](#), and [135.427](#) require you to place in your manual a chart or description of your organization and a list of the persons you have arranged with to perform any of your required inspections, other maintenance, preventive maintenance, or alterations. The performance of maintenance (including inspection), preventive maintenance, and alterations, followed by the article's subsequent return to service, is an organizational responsibility with individual duties that are often divided and diverse. Each person performing functions such as manual management, maintenance control, records control, maintenance scheduling, assuring serviceability of parts, and maintaining your CASS has a role in determining the "adequacy of work." As such, your CAMP Training Program, per §§ [91.1433](#), [121.375](#), and [135.433](#), should ensure each individual (within their respective organizational roles) is fully informed about procedures, techniques, and new equipment in use, and is competent to perform their duties as they relate to determining the adequacy of the work done under your CAMP authority.
- 1.9.1 Your CAMP Organizational Management.** The management-related provisions for part 91K for fractional ownership operations, and those in §§ [119.65](#) and [119.69](#) for parts 121 and 135 air carriers, require sufficient management and technical personnel who are qualified through training, experience, and expertise. AC [120-16](#), Air Carrier Maintenance Programs, explains these positions are necessary to perform, supervise, manage, and amend your CAMP; manage and guide your maintenance personnel; and provide the direction necessary to achieve your CAMP objectives defined in §§ [91.1425](#), [121.367](#), and [135.425](#). The duties, responsibilities, and authority of personnel that fill these required or approved positions must be as stated in the general policy provisions of the manual required by §§ [91.1023](#), [121.133](#), and [135.21](#). While you may hire individuals with the training, experience, and expertise you require, your CAMP Training Program should ensure the personnel you provide have a full understanding of their duties, authority, and responsibility. The CAMP Training Program empowers you to train and prepare your employees for management roles and responsibilities within your organization. To the extent of their responsibilities (per §§ [119.65](#) and [119.69](#)), these individuals should fully understand:

- Aviation safety standards and safe operating practices;
- Title 14 CFR Chapter [I](#) (Federal aviation regulations);
- Your OpSpecs;
- All appropriate maintenance and airworthiness requirements (e.g., 14 CFR parts 1, [21](#), [23](#), [25](#), [43](#), [45](#), [47](#), [65](#), 91, and 121); and
- Your manual required by §§ 91.1023, 121.133, and 135.21.

1.9.2 Those Who Perform Maintenance, Preventive Maintenance, and Alterations and Those Who Approve Work for Return to Service.

1.9.2.1 The training program must ensure that CAMP operator personnel, or the persons with whom the CAMP operator has arranged to perform the work, understand the policies, procedures, and instructions in their maintenance manual; are fully informed about procedures, techniques, and new equipment in use; and are competent to perform their duties. Sections [121.379](#) and [135.437](#) grant parts 121 and 135 CHs the authority to perform maintenance, preventive maintenance, and alterations as provided in their maintenance manuals. In addition, they authorize those CHs to approve for return to service any airframe, aircraft engine, propeller, rotor (rotorcraft may be used in part 135, but not part 121), or appliance after performing that maintenance, preventive maintenance, or alteration. As part of the approval for return to service, §§ [121.709](#) and [135.443](#) restrict airworthiness releases, logbook entries, and approvals for return to service to only appropriately certificated persons.

1.9.2.2 Unlike air carriers, part 91K operators are not maintenance entities. The performance of maintenance, preventive maintenance, and alterations, and the subsequent approval for return to service, must be by a certificated person authorized to do so under part 43. A part 91K program manager may perform and/or approve maintenance for return to service only if properly certificated. However, the part 91K program manager still has the responsibility, with the Director of Maintenance (DOM), to ensure the personnel they employ or contract with are appropriately certificated, have a full understanding of the CAMP manual procedures and techniques, are fully informed of any new equipment in use, and are competent in accordance with their manual.

1.9.3 Required Inspection Personnel. Sections [91.1429](#), [121.371](#), and [135.429](#) provide that persons who perform required inspections for you must be appropriately certificated, properly trained, qualified, and authorized to do so, and must perform under the supervision and control of an inspection unit.

1.9.4 Contract Maintenance Personnel. It is common for persons performing maintenance, preventive maintenance, or alteration functions for you to have a training program of their own. When you arrange with others to perform work for you, your responsibility is to ensure these individuals are fully informed about your procedures, techniques, and new

equipment in use, and are competent to perform their duties in accordance with your manual.

- 1.9.5 Individuals Who Perform CASS Functions.** Individuals who perform CASS functions must be able to validate your CAMP's performance and assess its effectiveness. These individuals collectively determine the adequacy of all CAMP work; therefore, the CAMP Training Program is a method to ensure they are competent to do so.
- 1.9.6 Maintenance Department Employees.** Parts clerks, records clerks, and auditors may not need training under your CAMP Training Program; however, parts and records control, as well as complete and accurate audits, are essential to ensure airworthiness. Competent performance of these duties is expected, necessary, and may be required. Refer to §§ 91.1433, 121.375, and 135.433.
- 1.10 How Does Your CAMP Training Program Interface With Your Safety Management System?** The Airline Safety and Federal Aviation Administration Extension Act of 2010 directed the FAA to "require all part 121 air carriers to implement a safety management system." As a result, in 2015, the FAA published 14 CFR part [5](#), Safety Management Systems, applicable to air carriers conducting operations under part 121. *Persons other than part 121 air carriers are encouraged to implement a Safety Management System (SMS) voluntarily.* AC [120-92](#), Safety Management Systems for Aviation Service Providers, provides an acceptable means of complying with part 5. SMS is not a standalone program; rather it is a system that emphasizes safety and is integrated throughout all aviation-related facets of an organization. An SMS does not have to be extensive, expensive, or sophisticated to do what it is supposed to do. Part 121 air carriers and others with an FAA-accepted SMS should understand that developing and delivering any training (including maintenance training) is an opportunity to promote safety. Because the performance and approval of maintenance is relative to your safety performance, your maintenance executives, managers, and other employees are all accountable for your safety performance (refer to § [5.23](#)). Note that the requirements in § [5.91](#) (competencies and training) and § [5.93](#) (safety communication) apply for part 121 operators and should be considered in developing your CAMP Training Program. Note also that § [5.97\(c\)](#) (SMS records) requires you to maintain a record of all training provided under § 5.91 for each individual, and that those records must be retained for as long as the individual is employed by the operator. Additionally, § 5.97(d) requires part 121 operators to retain records of all communications provided under § 5.93 for a minimum of 24 consecutive calendar months.
- 1.10.1 Your CAMP Training Program May be a Mitigation Strategy.** You may use a CAMP Training Program as a mitigation strategy to address the hazard/risk of a "nonproficient" employee or work unit.
- 1.10.2 Your CAMP Training Program is a Means to Gather Safety Data.** Existing programs, such as an Aviation Safety Action Program (ASAP), the CAMP Training Program, and the CASS, provide valuable data that you can integrate into an SMS. Feedback from these programs will "feed" your system, which may often identify underlying causes and identify additional hazards or increased risk.

1.11 Is My Non-Extended Operations (ETOPS) CAMP Training Program Sufficient for ETOPS? No. A CH conducting ETOPS with two-engine airplanes must enhance its CAMP Training Program to comply with the ETOPS maintenance requirements as specified in §§ [121.374](#) and [135.411\(d\)](#). An ETOPS CAMP has additional training requirements and expectations. In accordance with § 121.374(m) and part 135 appendix [G](#), subparagraph G135.2.8(m), for each airplane-engine combination, you must develop a maintenance training program that provides training adequate to support ETOPS. This may be a standalone program or an enhancement to your existing non-ETOPS CAMP Training Program. Either way you must ensure ETOPS-specific training for all persons involved in ETOPS maintenance, and this training must focus on the special nature of ETOPS. This training is in addition to your CAMP Training Program used to qualify individuals to perform work on specific airplanes and engines.

1.12 What Determines the Complexity and Scope of a CAMP Training Program? Your CAMP Training Program is unique to your organization. The complexity of your CAMP Training Program is proportional to the maintenance organization, the number of aircraft, aircraft make, aircraft model, and aircraft equipment configurations. The number of courses, content, time requirements, training methods, and sources within a CAMP will vary accordingly. For example, one maintenance organization may have separate indoctrination courses for technicians, inspectors, managers, and supervisors. Another maintenance organization may have only one indoctrination course appropriate for all of its employees, including temporary personnel. The FAA expects the CAMP Training Program, like the CAMP itself, to be sufficiently comprehensive in scope and detail to fulfill its responsibility to provide competent personnel and authorize inspection personnel to maintain the aircraft in an airworthy condition in accordance with the regulations. Competent individuals who perform the inspections and other maintenance, preventive maintenance, and alterations under the CAMP:

1. Understand and use the applicable portions of the CH's/program manager's manual to perform their assigned tasks;
2. Perform the work;
3. Determine the adequacy of the work;
4. Determine the adequacy of the work done under their supervision;
5. Accomplish the approval for return to service under §§ [91.1443](#), 121.709, and 135.443, as applicable, on behalf of the maintenance organization;
6. Identify Required Inspection Items (RII) and ensure they are verified and that the required items are correct; and
7. Create complete and accurate maintenance record entries.

1.12.1 Persons tasked with reliability program or CASS data collection and analysis duties may require specialized training and technical backgrounds. It is your responsibility to ensure those who perform these duties are competent to do so. In general, these auditors and analysts should:

1. Have a sufficient maintenance background applicable to your program.
2. Be familiar with your maintenance procedures, technical documents, and aircraft systems.
3. Be able to understand and interpret data to evaluate the facilities, equipment, and processes you use.
4. Have training and experience specific to their assigned functions and duties.
5. Have systems analytical skills.
6. Have skills in auditing techniques.
7. Be able to apply risk assessment and risk management (RM) techniques.
8. Be able to perform Root Cause Analysis (RCA).
9. Fully understand and consider human factors.

1.13 Which Regulations and Other Guidance Material are Related to This AC? For more information, consult the current editions of the following documents:

1.13.1 Title 14 CFRs.

1. Part [1](#), Definitions and Abbreviations. Part 1 contains the definitions of some of the words used in 14 CFR.
2. Part [5](#), Safety Management Systems: Subpart E—Safety Promotion.
3. Part [43](#), Maintenance, Preventive Maintenance, Rebuilding, and Alteration. Part 43 contains the rules for maintenance, preventive maintenance, rebuilding, and alteration.
4. Part [91](#), General Operating and Flight Rules: Subpart K—Fractional Ownership Operations.
5. Part [119](#), Certification: Air Carriers And Commercial Operators: Subpart C—Certification, Operations Specifications, and Certain Other Requirements for Operations Conducted Under Part 121 or Part 135 of This Chapter.
6. Part [121](#), Operating Requirements: Domestic, Flag, and Supplemental Operations: Subpart L—Maintenance, Preventive Maintenance, and Alterations.
7. Part [135](#), Operating Requirements: Commuter and On-Demand Operations and Rules Governing Persons On Board Such Aircraft: Subpart J—Maintenance, Preventive Maintenance, and Alterations.

1.13.2 Advisory Circulars (AC).

1. AC [120-16](#), Air Carrier Maintenance Programs. This AC describes a Continuous Airworthiness Maintenance Program (CAMP). It explains the background as well as the FAA's regulatory requirements for these programs.
2. AC [120-66](#), Aviation Safety Action Program. This AC provides information encouraging employees to voluntarily report safety information.

3. AC [120-72](#), Maintenance Human Factors Training. This AC presents guidelines for developing, implementing, reinforcing, and assessing Maintenance Human Factors (MxHF) training programs for improving communication, effectiveness, and safety in maintenance operations.
4. AC [120-78](#), Electronic Signatures, Electronic Recordkeeping, and Electronic Manuals. This AC provides information on electronic recordkeeping.
5. AC [120-79](#), Developing and Implementing an Air Carrier Continuing Analysis and Surveillance System. This AC provides information on how to implement a CASS, which is required for CAMP operators.
6. AC [120-92](#), Safety Management Systems for Aviation Service Providers. This AC provides information on how to develop an SMS.

1.13.3 Other Publications.

1. FAA Order [8900.1](#), Volume 3, Chapter 24, Evaluate 14 CFR Parts 91 Subpart K/121/135.411(a)(2) Maintenance Training Program Record. Section 1 provides guidance for training program evaluation and Section 2 provides guidance for evaluating and accepting a human factors training program.
2. The FAA Office of Aerospace Medicine (AAM) Operator's Manual: Human Factors in Aviation Maintenance. This manual is available at https://www.faa.gov/data_research/research/med_humanfacs/oamtechreports/2010s/2015/201502. As stated on FAA.gov, "This manual recognizes that readers already know the importance of human factors – a science that pays attention to physical, psychological, and other human attributes to ensure that we work safely and efficiently with minimal risk to others and equipment. The chapters discuss seven critical human factors topics that contribute to the goal of creating and reinforcing a safety culture where employees practice safe habits, both at work and at home:
 1. Hazard Identification,
 2. Procedural Compliance and Documentation,
 3. Human Factors Training – Evolution and Reinforcement,
 4. Fatigue Risk Management,
 5. Human Factors Health and Safety Program,
 6. Considering Human Factors Issues in Design and Installation, and
 7. Measuring Impact and Return on Investment."

Note: A downloadable PDF is available at https://www.faa.gov/sites/faa.gov/files/data_research/research/med_humanfacs/oamtechreports/201502.pdf.

3. Air Transport Association (ATA) Specification 104, Guidelines for Aircraft Maintenance Training, Washington, DC, Airlines for America (2017). The document provides guidance on training development including task analysis and

industry-defined training levels. This document is available at <https://publications.airlines.org/CommerceProductDetail.aspx?Product=236>.

4. International Civil Aviation Organization (ICAO) Doc [9683](#)-AN/950, Human Factors Training Manual (1998). This document provides overview information on training content for human factors programs.
5. European Union Aviation Safety Agency (EASA) Acceptable Means of Compliance (AMC) and Guidance Material (GM). This information may have value for those interested in the training design and maintenance certification guidance used by EASA. The information is available at <https://www.easa.europa.eu/document-library/acceptable-means-of-compliance-and-guidance-materials>.

CHAPTER 2 TYPES OF TRAINING

2.1 Purpose of This Chapter.

2.1.1 The AC explains various types of training that you should consider in the following sections:

- 2.2 CAMP Indoctrination.
- 2.3 Code of Federal Regulations (CFR).
- 2.4 Maintenance Policies and Procedures Content and Usage.
- 2.5 Human Factors Training (Initial and Recurrent).
- 2.6 Initial Training.
- 2.7 On-the-Job Training (OJT).
- 2.8 Recurrent Training.
- 2.9 Requalification Training.
- 2.10 Remedial Training.
- 2.11 Aircraft/Airplane Equipment Specific Training.
- 2.12 Specialized Tasks.
- 2.13 Competency-Based Training.
- 2.14 Maintenance Provider Training.

2.1.2 Your CAMP Training Program should be flexible enough to adjust as needs arise and include additional types of training as dictated by maintenance program assessments, changes in operations, and regulatory requirement changes.

2.2 CAMP Indoctrination.

2.2.1 Indoctrination training should introduce new employees to the organization and its operations and serve as core training for all employees. Indoctrination training usually is required only for new employees shortly after an employee is hired. The scope and depth of indoctrination training will vary based on the employee's job function and the complexity of the organization. However, to establish a common company core of knowledge, indoctrination training should be similar for all employees.

2.2.2 Indoctrination training usually covers the following subject areas:

- The operator's basic policies and procedures, company manuals, and organizational and administrative practices.
- Applicable sections of 14 CFR.
- Facility security.

- Maintenance department and quality control policies, procedures, and practices; maintenance manuals; and forms.
- Company and maintenance department computer systems and software training.
- Maintenance recordkeeping and documentation.
- Human factors and safety management procedures overview.
- Hazardous materials (HAZMAT), Environmental Protection Agency (EPA), and Occupational Safety and Health Administration (OSHA) regulations familiarization.

2.2.3 The maintenance training portion of the manual should contain the training program subject areas, define to whom and when indoctrination training is required, and define the timeframe for delivery (e.g., within 30 days of hiring).

2.3 Code of Federal Regulations (CFR).

2.3.1 All employees should receive a basic introduction to the 14 CFR and the applicable sections as described in the indoctrination training.

2.3.2 Many employees require a more detailed review of the applicable regulations as they apply directly to their specific job responsibilities. For example, inspectors and those with approval for return-to-service signature authority may require additional or an indepth review of the regulations as applied to their job responsibility.

2.3.3 A CAMP Training Program task analysis should determine and justify the amount of regulations training required beyond indoctrination training.

2.4 Maintenance Policies and Procedures Content and Usage.

2.4.1 Improper use of or failure to use documentation to follow established procedures is a leading contributing factor to human error in maintenance. Therefore, training for maintenance policies and procedures is important to all employees.

2.4.2 Training should ensure that it addresses the Continuing Analysis and Surveillance System (CASS) analysis and assessments, disclosure reporting, and regulatory noncompliance related to documentation and manual use.

2.4.3 Training for use of procedures should be matched to each employee's job requirements. This training should also be reinforced in the human factors training.

2.5 Human Factors Training (Initial and Recurrent).

2.5.1 FAA investigations and data analysis show that human factors have contributed to approximately 80 percent of all maintenance-related accidents and incidents. Research and experience show human factors training can address many issues that contribute to these maintenance events. Attention to maintenance human factors will raise efficiency, effectiveness, and safety in aviation environments. That translates to better expense control and long-term safety benefits.

- 2.5.2** Training in maintenance human factors is an essential part of a maintenance training program. The CAMP Training Program, and any revision to it, should include human factors elements.
- 2.5.3** Many companies have European Union Aviation Safety Agency (EASA) certificates and have implemented training accordingly. This AC encourages CAMP Training Programs to conform to EASA's suggestions for training content. However, the maintenance organization can base its human factors training on a training needs assessment that may not include all the EASA elements.
- 2.5.4** Human factors training can be delivered using multimedia, including web-based training. However, the value of additional instructor-led discussion is extremely valuable.
- 2.5.5** When human factors training is provided by contracted providers, the manual should state the way the contracted program is evaluated and authorized to deliver this training.
- 2.5.6** The maintenance training portion of the manual should contain human factor subject areas, define how outside influences affect human behavior, provide human factor awareness training, and contain a student assessment evaluation concerning content and instructional delivery.
- 2.5.7** Maintenance human factors experts and other regulatory agencies, including EASA, have identified the following key topics to include in a training program.
1. General/introduction to human factors.
 2. Safety culture/organizational factors.
 3. Error (error principles, event investigation, and case studies).
 4. Human performance and limitations.
 5. Environment (physical and social).
 6. Procedures, information, tools, and task signoff practices.
 7. Planning of tasks, equipment, and spares.
 8. Communication.
 9. Teamwork and leadership.
 10. Professionalism and integrity.
 11. Shift and task turnover.
 12. Undocumented maintenance.
 13. Fatigue management/fitness for duty.
 14. The Dirty Dozen. (The Dirty Dozen refers to twelve of the most common human error preconditions, or conditions that can act as precursors, to accidents or incidents. Refer to AC [120-72](#), Maintenance Human Factors Training.)

2.6 Initial Training.

- 2.6.1** Initial training is where you establish the minimum competency levels individuals must meet when performing their work assignments. It is here that you ensure personnel are fully informed about your procedures, techniques, and equipment. Individuals leave initial training knowing their duties and authorities and they are now fully aware of what you expect of them. Initial training enables individuals (at the level they are assigned) to determine the adequacy of the work they do (and if required) the work others do in accordance with your procedures. Through initial training, each individual understands their part in your overarching responsibility to ensure airworthiness.
- 2.6.2** Initial training may be tailored according to job functions and position. For example, initial training for maintenance technicians would be different than that for stockroom clerks. Initial training should be matched to the aircraft type(s) on which the employee is likely to work. Regardless of their work assignments, initial training is where you relate your methods, techniques, and practices defined in your manual as it applies to their duties and responsibilities.
- 2.6.3** Initial training based on CAMP competencies ensures each employee has a validated set of knowledge, skills, aptitude, and ability, and is not measured in course hours or time. Initial training is your opportunity to evaluate each person's skill level and assess how their skills meet your CAMP needs and expectations. This determination is based on each employee's previous experience and demonstrated capabilities. It is best established through a needs assessment process (see paragraph [3.4](#)). This needs assessment is a critical part of establishing each individual's training requirements. There could be different standards and program requirements depending on the measured skills and past experience of each maintenance employee. The following are some standards you could apply:
- Individuals with no prior experience,
 - Individuals with prior experience on the same aircraft type,
 - Individuals with prior experience not on the same aircraft type,
 - Individuals with experience working under a CAMP organization,
 - Individuals without experience working under a CAMP organization,
 - Individuals with prior repair station experience, and/or
 - Individuals with prior military experience.
- 2.6.4** Initial training could have minimum hour requirements; however, achieving individual competency must be the output of your CAMP Training Program. The CAMP Training Program portion of your manual will identify the minimum competency standards each employee must possess prior to being used in your maintenance organization. For example, the minimum initial training requirements for all maintenance technicians may be 40 hours, but maintenance technicians with no prior experience may require 80 hours or more in order to reach the competency level expected of them.

2.6.5 While not all-inclusive, initial training topics usually cover:

- Company and aircraft manual management;
- Records control and its associated system of reporting;
- Maintenance scheduling;
- Organizational procedures and techniques;
- Specialized equipment and its use;
- Aircraft type, aircraft systems, and ground equipment;
- Specific skills, such as avionics, composite repair, aircraft run-up and taxi training, and skills upgrade;
- A general overview of human factors training as applicable to aircraft type; and
- Other task-specific training that ensures predefined and validated competencies.

2.7 On-the-Job Training (OJT).

2.7.1 OJT is direct instruction, usually one-on-one training located at the job site. A large majority of maintenance learning occurs through OJT training. OJT is a planned, structured training event conducted at a worksite and validated by a designated OJT trainer. This type of training provides direct experience in the work environment in which the employee is performing or will be performing on the job.

2.7.2 Since OJT is a one-on-one exchange, it provides a method for the CAMP organization to evaluate individual competencies and ensure employees understand the task expectations and performance standards. It is often the final validation that employees have the knowledge and skill to perform a task competently before being fully authorized to perform on their own. A well-managed OJT program that utilizes instructors that are current and well-versed in the task is an asset to a CAMP Training Program. However, a poorly managed OJT program presents a high-risk safety issue. It can be the root cause of bad habits, tribal knowledge, and repeated norms that can cause noncompliance or create unsafe conditions.

2.8 Recurrent Training.

2.8.1 Recurrent maintenance training, also known as refresher training, is continuing education that occurs on a repetitive basis to ensure the individual maintains a required level of competency and remains capable of properly performing their assigned job. Recurrent training also is used to introduce the employee to aircraft modifications; new or different ground equipment; new procedures, regulations, techniques, and methods; or other new information. The training program should have procedures to determine the type and frequency of recurrent training required for each of its employees through the needs assessment process (see paragraph [3.4](#)).

2.8.2 The recurrent training program usually includes two types of training:

- Training conducted on demand to bring employee skills and competencies up to date with existing equipment, new/different equipment, and/or procedures; and
- Training conducted on a scheduled basis to maintain employee competency (refresher training).

2.8.3 Recurrent training should not include repetitive information unless it is necessary to maintain the desired degree of competence. Examples of recurrent training include:

- Continuing training based on individual competencies that is designed to maintain regulatory and certificate currency requirements;
- Training on a seldom-accomplished task or seldom-used skill;
- Update training for particular tasks or skills, which can include the use of training bulletins, bulletin board items, self-study tasks, and computer-based instruction;
- Scheduled recurrent human factors and safety management training;
- Specific training designed to correct deficiencies identified by CASS, self-disclosure programs, or other event reporting systems; and
- Any other continuing education or training not provided on a defined schedule.

2.9 Requalification Training.

2.9.1 Requalification training is conducted specifically to restore previously qualified maintenance personnel to a qualified status in a particular task or job assignment. To be eligible for requalification, maintenance personnel must have been previously qualified in that particular task or job assignment and have subsequently lost that qualification.

2.9.2 Maintenance personnel become unqualified when they fail to:

- Remain current through experience as required by the regulations (i.e., are not current), or
- Complete recurrent training within the eligibility period established by the CAMP Training Program (i.e., becoming overdue).

2.9.3 Maintenance personnel meet requalification training objectives by completing requalification curriculum segments. The reasons for and the length of the maintenance personnel's unqualified status will usually determine the training and qualification curriculum segments needed for requalification. Requalification may be as simple as having individuals demonstrate their ability to accomplish tasks for which they were previously qualified, or having the individual repeat the initial training for the task.

2.10 Remedial Training.

- 2.10.1** Remedial training assists an employee in building knowledge, skill, or aptitude for performing specific tasks where deficiency in competence has been demonstrated. The maintenance training portion of the manual should have procedures to determine when an individual requires remedial training. In some instances, this type of training should consist of a suitably experienced individual who reviews procedures with an employee through OJT. The maintenance training program should be especially flexible in this area and provide the means necessary to provide the individual in need with the immediate knowledge or skill in which they were found to be deficient. Remedial training may focus on one individual at a time, but can also be delivered to several individuals at the same time if more than one person was involved with triggering the specific or reoccurring event.
- 2.10.2** Successful remedial training will show an individual what happened, why it happened, and, in a positive manner, how to prevent it from happening again. Remedial training and its general use and descriptions will be part of the maintenance training portion of the manual and may be included within the recurrent training requirements.
- 2.11 Aircraft/Airplane Equipment Specific Training.** For example, type, engine, accessories, etc.
- 2.11.1** The CAMP Training Program portion of your manual outlines and explains your expectations in order to qualify individuals to perform work for you on specific airplanes or other products or articles. This training is specific to the type of work being performed (e.g., heavy maintenance, light maintenance, or aircraft line maintenance, and considers aircraft size and type). Aircraft/airplane equipment-specific training is technical training applied formally and followed up with OJT. It is very specific in the use and references within your manual system that provides the methods, techniques, and practices that must be followed.
- 2.11.2** Your CAMP Training Program is your method to ensure each person performing maintenance, preventive maintenance, or an alteration on an aircraft, engine, propeller, or appliance knows where to find and use the methods, techniques, and practices prescribed in your manual. Each person must know how to obtain and use the tools, equipment, and test apparatus necessary to assure completion of the work in accordance with your procedures. If the manufacturer recommends special equipment or test apparatus, you must ensure they know how to use that equipment or apparatus or its equivalent.
- 2.11.3** Your CAMP Training Program should provide sufficient instruction so that individuals know how to determine that the adequacy of their work, and (if required) the work of others, is in the manner prescribed by you. Personnel should receive instruction in the use of your manuals and equipment. This enables them to be able to validate that the work done is in such a manner and the materials used are of such a quality that the condition of the aircraft, airframe, aircraft engine, propeller, or appliance worked on is at least equal to its original or properly altered condition. This is with regard to aerodynamic function,

structural strength, resistance to vibration and deterioration, and other qualities affecting airworthiness, as required by part [43](#), § [43.13\(b\)](#).

- 2.11.4** Your CAMP Training Program should educate individuals in your approved methods to identify inspections or other maintenance identified as airworthiness limitations (AL). Individuals must understand the strict need to follow your approved instructions for continued airworthiness when performing an AL inspection or maintenance.

2.12 Specialized Tasks.

- 2.12.1** Maintenance training for specialized tasks focuses on competency in specific tasks or areas of responsibility. The training program may combine specialized task training with initial or recurrent training. The maintenance training portion of the manual should identify job assignments that require special skills or are complex. It should also identify the associated specialized training needed to validate that the individuals assigned have the skills and ability to competently perform the work. Some subject areas that may require specialized training include:

- Special inspection or test techniques, such as nondestructive inspections;
- Special machining operations;
- Complex welding operations;
- Complex assembly operations;
- Complex rigging procedures;
- Engine test cell runs; and
- Engine overhauls.

Note: Individuals who attend specialized training and develop competency in a particular job assignment or task may be tasked by the organization to convey the information to other employees. This would be a form of OJT.

- 2.12.2** Specialized training also may include enrichment training courses that are not necessarily required for a qualification but are simply a means to enhance skills and knowledge in support of an individual's trade or subjects that are not maintenance related, such as:

- Management skills training for new supervisors,
- Computer skills, or
- Other training necessary because of a change in an individual's duties and responsibilities.

2.13 Competency-Based Training.¹

- 2.13.1** This training measures employee learning rather than time spent in training or in class. Its focus is on the learning achieved in the course and the rate of its transfer to the performance context. It allows flexibility to move through training based on the skills of the learner. Learners are able to tackle chapters and exercises in any order they desire. The grading scheme measures student knowledge, skills, ability, and performance.
- 2.13.2** Consider the power of technology for teaching and learning. This can give learners the ability to respond to each other's help questions, making leaders in those respective areas. A typical feature of competency-based training is that it may be computer mediated. This training could be online in a learning management system, or it could be standalone. Educational technology provides the desired flexibility to modify the training and development plans according to the learners. Technology fulfills the learning measurement requirement of the competency-based program. Have the learners submit their assignments using a variety of educational technology tools. Create links to tutorials or create short tutorials that teach learners how to use a tool to develop an assignment. You can use Facebook, YouTube, and Twitter to communicate with your learners by creating dedicated course pages in these social media applications. In short, try to re-create the real-world work environment scene through productivity-enhancing technology.
- 2.13.3** Shift the focus from the trainer to the trainee. When trainers become talking heads holding scheduled training sessions for a predetermined time, the instruction takes place at the trainers' pace. For most trainees, this will be the wrong pace. Some will need to go more slowly; others will be able to move much faster. Competency-based learning shifts the role of the trainer from that of "a sage on the stage" to a "guide on the side." Trainers become the mentors who redirect conversations to synthesize and transfer knowledge according to the work context of the learners. This is one of the biggest benefits of an eLearning course. Learning is focused more on the learner than on the trainer. This means that the course dynamics will change with each batch of learners based on their unique needs, experiences, and goals.

2.14 Maintenance Provider Training.

- 2.14.1** You may arrange with another person for the performance of your CAMP. A maintenance provider is a person other than one you have trained and employed directly. However, you must ensure those maintenance providers who determine the adequacy of work know how to access your manuals and are able to meet your expectations. Persons who perform work under your CAMP must have a full understanding of their assigned duties and authority and fully understand that performance in accordance with your CAMP is required. You may administer your CAMP Training Program to a maintenance provider, or you may accept the maintenance provider's training. To accept a maintenance provider's training, your CAMP manual will include policies, procedures,

¹ The information cited in paragraphs 2.13.1 through 2.13.3 is available at <https://www.efrontlearning.com/blog/2015/10/4-ways-to-implement-a-competency-based-training-program.html>.

methods, and instructions for you to assess the maintenance provider's training and ensure competence by your standards. Your CAMP manual will include a means to present, explain, and ensure the methods, techniques, and practices defined in your manual are understood.

- 2.14.2** When you arrange with another person to perform the work of your CAMP, your CASS must be especially diligent to validate the performance and effectiveness of your CAMP. Your CASS is always required to correct deficiencies in your program regardless of whether those programs are carried out by you or by another person. When deficiencies (related to competence) are identified, your CASS must be able to influence and correct a maintenance provider's training whether this training is administered by you or by the provider. A maintenance provider may have a very robust training program; however, you must ensure those you contract with and authorize to perform maintenance (including inspection), preventive maintenance, and alterations understand and do so per your manual. You may arrange with another person for the performance of any maintenance, preventive maintenance, or alterations. However, this does not relieve you of the responsibility for the airworthiness of your aircraft (including airframes, aircraft engines, propellers, appliances, and parts thereof) and the performance of the maintenance, preventive maintenance, and alteration of your aircraft (including airframes, aircraft engines, propellers, appliances, emergency equipment, and parts thereof) in accordance with your manual.

CHAPTER 3 TRAINING PROGRAM BASIC COMPONENTS

3.1 General Components.

3.1.1 An effective CAMP Training Program will reflect the size and complexity of your CAMP. These training programs can range from small and simple to large and complex. The following sections describe components of an effective CAMP Training Program. These sections or their equivalent should be documented in the manual section that contains your CAMP:

3.2 Job Analysis.

3.3 Competency Standards.

3.4 Training Needs Assessments.

3.5 Course Development.

3.6 Training Completion Documentation.

3.7 Training Program Review and Evaluation.

3.2 Job Analysis.

3.2.1 Job analysis is the foundation for all competency assessments and selection decisions. To identify the best person for the job, it is crucial to fully understand the nature of that job. Job analysis provides a way to develop this understanding by examining the tasks performed in a job, the competencies required to perform those tasks, and the connection between the tasks and competencies.

3.2.2 Information from a job analysis is used to determine job requirements within your CAMP. From this analysis, you can establish your training needs and position descriptions. Job analysis will establish where you need positions and which of these positions are directly in charge of your maintenance activities. It is through job analysis that you are able to accomplish performance appraisals, enhancements, correction, and job promotion.

1. Job analysis of your CAMP requires you to evaluate measurable patterns of knowledge, skills, abilities, behaviors, and other characteristics (competencies) that an individual needs to perform your CAMP tasks and functions successfully.
2. Your CAMP job task analysis should focus on the “how” of performing CAMP job tasks, or what the person needs to do in order to accomplish the task successfully.

3.3 Competency Standards.

3.3.1 Competency standards are the measurable pattern of knowledge, skills, abilities, behaviors, and other characteristics that are needed to perform your CAMP duties and job tasks.

3.3.2 Your CAMP job tasks require competencies that are general, technical, or both.

1. General competencies reflect the cognitive and social capabilities (e.g., problem solving and interpersonal skills) required for job performance under your CAMP.
2. Technical competencies are more specific as they are tailored to the particular knowledge and skill requirements necessary for a CAMP-specific job.

3.3.3 A person who is competent in your CAMP knows how to determine the adequacy of their own work, and (if required) the work others do, in relation to and in accordance with your manual.

3.3.4 To perform under your CAMP, individuals must understand their respective roles toward releasing airworthy aircraft into service. Competent personnel have a full understanding of their assigned duties and authority. They fully understand their part in your overarching responsibility to ensure airworthiness.

3.4 Training Needs Assessment.

3.4.1 Assessing what knowledge, skills, and abilities your entire CAMP organization needs to manage and apply your CAMP effectively will allow you to structure your CAMP Training Program to the size and scope of your overall CAMP maintenance organization. A training needs assessment ensures that throughout your organization competent personnel are available to determine the adequacy of work.

3.4.2 Assess three levels of your CAMP organization:

3.4.2.1 An organizational assessment determines where you need certain competencies to lead, guide, perform, and control your CAMP. This assessment relies on real-life analysis of your CAMP and the conditions under which your operation exposes it. An unbiased analysis of these conditions will identify where you need leadership, technical skill, inspection expertise, and supervisory competencies. Reliance on facts and data rather than norms, favoritism, cronyism, and office politics will allow you to take advantage of personnel strengths, mitigate process risk, and manage human behavior. Continual analysis and surveillance of positions within your CAMP organization will allow you to ensure the right people, with the right skills, are in the right position regardless of changing demographics, operational trends, technology, and the economy. Understanding the competency demands of your organization's positions will allow you to take full advantage of the strengths of your people and prepare them for the duties you expect them to perform both now and in the future.

3.4.2.2 Occupational assessments examine the knowledge, skills, and abilities in relation to the authority you delegate to individual groups (e.g., directors, managers, inspectors, Required Inspection Item (RII) authority, mechanics, maintenance control, maintenance planning and scheduling, recordkeeping, receiving inspection, etc.). Continual occupational assessment of group performance of your CAMP will identify discrepancies or gaps that creep in over time. Regularly scheduled and routine occupational assessments will

allow you to enhance through training the competencies needed to perform your CAMP job-related duties and tasks. Your occupational assessment becomes the mechanism to introduce new and more efficient ways to do the work of your CAMP while eliminating competency gaps.

- 3.4.2.3** Individual assessments analyze how well an individual employee is doing a job and determines the individual's capacity to do new or different work. Individual assessment provides information on which employees need training and what kind.

3.4.3 Training needs assessment process:

1. Establish training program goals and standards.
2. Perform CAMP organizational, occupational group, and individual job analysis.
3. Establish certification and qualification standards for:
 - Your Director of Maintenance (DOM) and Chief Inspector.
 - Those directly in charge of maintenance (including inspection).
 - Those who may perform maintenance (including inspection), preventive maintenance, and alterations.
 - Those with approval for return-to-service authority.
 - Those required to perform required inspections.
 - Those who review records to ensure aircraft airworthiness.
4. From your job analysis, identify specific competencies (e.g., knowledge, skills, and abilities) needed by:
 - Those who work under your CAMP to fill specific CAMP organizational oversight positions.
 - Those who work under your CAMP to fill an occupational group position.
 - All individuals who perform under your CAMP, including maintenance provider individuals performing contracted CAMP work.

- 3.4.3.1** A CAMP organization must have a means to determine that all of its maintenance personnel, including maintenance provider personnel, are competent to accomplish their duties. An individual needs assessment evaluates the current capability of its technical and nontechnical employees. An employee needs assessment usually is performed when an individual is hired; however, the CAMP organization may require a needs assessment when an employee changes jobs. Even though only those individuals performing maintenance, preventive maintenance, alterations, or required inspections (and those who determine the adequacy of work) must be trained under §§ [91.1433](#), [121.375](#), and [135.433](#), the certification rules §§ [119.65](#) and [119.69](#) require the organization to have sufficient management and technical personnel to ensure

safety. These individuals who serve in the organization must be qualified (through training, experience, and expertise to the extent of their responsibilities) and have a full understanding of the material governing the operation. While you may hire individuals with the training, experience, and expertise you require, your CAMP Training Program identifies the competencies required of these positions. The CAMP Training Program empowers you to train and prepare your employees for management roles and responsibilities within your organization.

- 3.4.3.2** The training program should differentiate between those employees that require training under §§ 91.1433, 121.375, and 135.433, and those trained at its discretion and in accordance with its organizational procedures. An assessment of each employee's capabilities should be made as it relates to the tasks they are expected to perform and will identify employee-specific training needs.
- 3.4.3.3** When carrying out any assessment of an individual's capabilities, the assessment process should be as objective as possible and well-structured to produce consistent results. The training program should have procedures to ensure the individual conducting the assessment is qualified to conduct the evaluation and interpret the results. It may be necessary to use more than one method to adequately assess an individual's capability.
- 3.4.3.4** The training program also should have procedures to accept prior experience, training, or education to establish an individual's capability. For example, a CAMP organization may accept graduation certificates from a 14 CFR part [147](#) school and/or an Airframe and Powerplant (A&P) certification as acceptable evidence of a basic knowledge and skill level in a particular area. A CAMP organization also could have procedures for accepting certificates/documentation of previous training by manufacturers, airlines, operators, or associations, and also maintenance experience obtained at airlines, operators, repair stations, or the military. The CAMP organization should have procedures to document the assessment in the individual's training records.
- 3.4.3.5** Your CAMP training assessment must ensure competent people are available. Employee evaluation methods and their usefulness are listed in Table [3-1](#).

Table 3-1. Employee Evaluation Methods

Method for Capability Evaluation	Usefulness of Method
Formal examination	This may include development of formal written test procedures with pass/fail criteria. While it is an effective method for assessing knowledge, it does not necessarily determine whether an individual can apply the knowledge to the assigned tasks.
Certificate	Possessing a certificate may be a prerequisite for some specialized positions. The certification of qualifications or education from a credible source can measure an individual's knowledge. However, it does not necessarily assess the individual's ability to apply that knowledge to assigned tasks.
Completion of a training course	A review of the documentation or instruction provided may be used to establish an individual's knowledge of a subject. Completion of training courses is most useful when there is some verification, through testing or demonstration, that the individual absorbed the course objectives. However, successful completion of a training course does not necessarily translate into the ability to accomplish a task.
Practical evaluation	A practical evaluation permits the employee to demonstrate skills in a controlled environment that is similar to a situation, or part of a situation, encountered in real life. Such an evaluation might, for example, allow the reviewer to focus on the critical steps in a time-consuming process without actually going through the entire process. This can be an effective way to determine an individual's capability; however, the assessment can depend on the skills of the individual designing the practical evaluation mechanism.
Group exercise	A properly designed group exercise can help demonstrate the understanding of a group that must work together on a project. Where an employee's understanding of their role in a larger scheme is important, a group exercise that tests that knowledge in an appropriate context can illuminate whom within the group needs assistance and can illuminate human factors elements of the training that might otherwise be misunderstood by the students. This process lends itself well to immediate remedial training as well as reinforcement of the training given to other members of the group, where properly administered.
On-the-job assessment	These types of assessments should be objectively based and judged by successful accomplishment of specified tasks. This is an effective way to determine an individual's capability; however, the assessment can depend on the skills of the individual accomplishing the assessment unless objective criteria are established.

Method for Capability Evaluation	Usefulness of Method
Oral examination in the working environment	These types of assessments should be objectively based and judged by the proper response to a consistent set of questions. This is an effective way to assess an individual's knowledge and ability to apply that knowledge. It also is a valid method of determining whether an inspector or supervisor is capable of reading, writing, and understanding the English language. However, it can depend on the skills of the individual conducting the examination unless objective criteria are established.

Note: The above list of evaluation methods should not be considered exhaustive. Unique instructional and teaching methods often give rise to unique evaluation mechanisms. The FAA encourages the use of new techniques for conducting evaluations.

3.4.3.6 Your CAMP training assessment can allow you to address human error due to lack of competency.

1. A human factors analysis looks at how your employees communicate and perform in the work environment and then seeks to incorporate that knowledge into the design of equipment, processes, and organizations.
2. Analysis of human factors will identify issues affecting how people interface with technology and operational systems; how well people understand new or changed equipment, technology, and documentation; and how well people perform within the general workplace environment.
3. Knowledge gained from human factors analysis can help you avoid maintenance errors, ensure that an individual's initial skill sets match task requirements, and enhance the overall work environment.

3.4.3.7 Document the results of the training assessment and the standards required for each job position or task. Each CAMP organization may approach this documentation differently, but the ultimate outcome should be a document outlining the training requirements by category. For example, a CAMP organization may define training based on:

- Job positions or functions,
- Job tasks,
- Aircraft worked on, or
- A combination of the above.

3.4.4 Figures [3-1](#) through [3-4](#) provide examples of documentation for a training needs assessment. These are examples; the exact format is up to you.

Figure 3-1. Sample Training Needs Assessment Documentation by Job Description and Task

Mechanic/Inspector		
To Sign	Training Required	Experience Required
Airworthiness release	Maintenance initial training applicable to aircraft type; OJT	90 days of aircraft type experience or 1 year experience on air carrier, transport category jet aircraft
Job procedure cards	General familiarization course for aircraft type	90 days of aircraft type experience or 1 year experience on air carrier, transport category jet aircraft
Servicing	OJT familiarization course for aircraft type	90 days of aircraft type experience or 1 year experience on air carrier, transport category jet aircraft

Personnel Assigned to B737		
Task	Minimum Training Required	Course
Receipt and dispatch	Pushback procedures B737 familiarization OJT	No. 123 No. 347
Sign maintenance checks	B737 initial	No. 476
CAT II/III Autoland	B737 initial or recurrent B737 OJT B737 CAT II/III initial/recurrent B737 CAT OJT	No. 123 No. 173 No. 456 No. 217

Figure 3-2. Sample Training Needs Assessment Documentation by Type of Work

<p>Line Maintenance</p> <p>B737</p> <p><i>Initial Qualification</i></p> <ul style="list-style-type: none"> • General Familiarization • Avionics Systems • Policies and Procedures • System Review • Cockpit Proficiency <p><i>Requalification — Every 2 years</i></p> <ul style="list-style-type: none"> • Policies and Procedures • System Review • Cockpit Proficiency
<p>Engine Start/Run Up/Taxi</p> <ul style="list-style-type: none"> • Policies and Procedures • Ground Handling Engine Operation • Safe Aircraft Movement • Qualification
<p>JT8 RII (Engine Shop Personnel Only)</p> <p><i>Initial Qualification</i></p> <ul style="list-style-type: none"> • JT8 General Familiarization • Required Inspection Items <p><i>Requalification — Every 2 years</i></p> <ul style="list-style-type: none"> • Required Inspection Items

Figure 3-3. Sample Training Needs Assessment Documentation by Job Description

<p>Mechanic General</p> <p><i>Work Scope</i></p> <ul style="list-style-type: none"> • Qualified to perform maintenance, preventive maintenance, alterations, inspections, and repairs in accordance with approved data on any fleet type aircraft under the supervision of a fleet-type qualified mechanic <p><i>Requirements</i></p> <ul style="list-style-type: none"> • Maintenance Orientation Course • GMM Familiarization Course • General Safety Course • Federal Regulations Course • Human Factors in Maintenance Course <p><i>Certifications</i></p> <ul style="list-style-type: none"> • FAA mechanic certificate with airframe and/or powerplant ratings <p>B737 Mechanic</p> <p><i>Work Scope</i></p> <ul style="list-style-type: none"> • Qualified to perform B737 aircraft maintenance, preventive maintenance, alterations, inspections, and repairs in accordance with approved data. Work limited to FAA mechanic certificate rating. Qualified to sign approval for return to service. <p><i>Requirements</i></p> <ul style="list-style-type: none"> • Mechanic General Qualification • B737 Aircraft Familiarization Course <p><i>Certifications</i></p> <ul style="list-style-type: none"> • FAA mechanic certificate with airframe and/or powerplant ratings
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Figure 3-4. Sample Training Needs Assessment Documentation by Job Description and Timeframe

<p>Line Mechanic Training Requirements</p> <p><i>Within the first 15 days of employment</i></p> <ul style="list-style-type: none"> • Paperwork Policies and Procedures • Maintenance Basic Safety Awareness • Computer Systems <p><i>Annual required after first year</i></p> <ul style="list-style-type: none"> • Maintenance Basic Safety Recurrent <p><i>Within 2 years of employment</i></p> <ul style="list-style-type: none"> • Aircraft-Specific Systems <p><i>Every 3 years after the first year of employment</i></p> <ul style="list-style-type: none"> • Paperwork, Policies, and Procedures <p><i>Within 15 days of assignment to ABC station</i></p> <ul style="list-style-type: none"> • Station Ramp Safety Procedures <p><i>Annual for ABC station specific personnel only</i></p> <ul style="list-style-type: none"> • Deicing/Anti-Icing

3.5 Course Development.

3.5.1 Develop the Course. Once the CAMP organization identifies its training requirements for each job function from its needs assessment, it should have procedures to begin developing or defining the individual courses it needs to meet those requirements. The training program should have procedures to develop each course or course of study, regardless of whether the course will be taught in-house or by an outside vendor. Consider the following as you develop a training course:

- Purpose of the training;
- The in-service experience of the personnel on the aircraft type or equipment, if applicable;
- Feedback from in-service difficulties/occurrence reporting;
- Significant Airworthiness Directives (AD) and/or Service Bulletins (SB); and
- Known human factors issues associated with the particular aircraft type.

Note: An outside vendor may be used to develop any part of a training course or develop and provide the entire training program. However, the CAMP organization is responsible for its performance and effectiveness.

3.5.2 Define the Course. Each course should define the following:

- Purpose,
- Applicability,
- Prerequisites,
- Detailed subject matter to be covered,
- Objective or desired outcome (gained technical knowledge or skill),
- Time requirements (if desired), and
- Course completion standards.

Note: Studies have shown that it may be better to train individuals to a competence-based standard rather than require a specific number of training hours to ensure employees have the competencies needed for their jobs. This type of training does not need to be done on a defined schedule or for a specific number of hours. Rather, CAMP organizations would test each individual to evaluate what training they need. Training to competence permits a CAMP organization to tailor its training programs to the specific requirements of its individual maintenance personnel and maintenance providers.

3.5.3 Identify the Training Method. The training program will outline and describe the appropriate training method for each course. There are many training delivery methods available. Each training program may include some or all of the following training delivery methods, as applicable to a particular course or operation.

3.5.3.1 Formal Classroom Instruction. Training can be structured as a formal course delivered by an instructor in a classroom setting. The value of this delivery method depends on the objectives and subject matter of the training. The interaction among students and between students and a knowledgeable instructor is very important for certain types of information to be transferred. Consequently, classroom discussions are important. This type of training, which is typical in a formal school environment, depends heavily on the quality of the instructor. It also requires relatively long periods away from the normal workplace. However, it may be cost effective because a classroom setting can accommodate a number of students at once.

3.5.3.2 On-the-Job Training (OJT). OJT is a process of learning while watching another demonstrate a task, and then accomplishing the same task under that individual's supervision. It is a very effective method of training for subject matter and tasks that are difficult to understand if described, but relatively easy to understand while observing the task being performed. Practical skills are best taught using OJT. OJT depends heavily on the capability of the instructor. Typically, OJT is given by an individual very experienced in the technical subject matter being taught. Even with a very capable instructor, the training organization should ensure all OJT is well structured to ensure all the key elements of the training are included and treated the same way from one instructional period to another. It is paramount that OJT be provided by maintenance production personnel and no other individuals, such as quality control inspectors. Having well-qualified OJT instructors is essential for OJT to be effective. The instructors should be thoroughly familiar with the knowledge, skills, and objectives of the training and should be capable instructors. It is not enough for an instructor to be technically qualified. An instructor also should be able to impart that knowledge and/or skill to another. The training program should have a process to verify that its OJT instructors are qualified and the quality of the OJT instruction is acceptable. The FAA expects the CAMP organization to have a logical process for selecting and monitoring its instructors. OJT usually is most effective when:

1. The trainees already have prerequisite knowledge and skills and do not need detailed explanations or lengthy discussions.
2. The target skill or knowledge can be taught or is best learned only in an actual work environment.
3. The work environment cannot be reasonably simulated or replicated in the classroom or with computer-based training (CBT) devices.
4. The training process very closely matches the actual tasks that would be performed.

5. OJT best matches the needs and constraints in terms of scheduling, costs, and human resources.
6. There are documented course outlines, measures of effectiveness, and training records.
7. There are qualified instructors readily available.

3.5.3.3 Computer-Based Training (CBT). Interactive CBT courses can be used to impart knowledge and teach practical skills at the correct pace for each employee and produce certificates of training at the completion of the course. CBT can be accomplished at any location at times convenient for each employee. To ensure the effectiveness of this type of training, the training program, Continuing Analysis and Surveillance System (CASS), and Safety Management System (SMS) should evaluate the information provided against its particular needs.

3.5.3.4 Distance Learning. Distance learning applies to situations where the instructor and the employees are not in the same location. It can take the form of mail-based correspondence courses using written, videotaped, or CBT materials; videoconferencing, teleconferencing, or a combination of both, sometimes called “virtual” classrooms; or intranet-based instruction that allows employees to interact with an instructor or with courseware similar to CBT. The advantages of this training method are that the courses can be tailored to a specific need and an instructor can respond to individual questions. The disadvantages are that the communications can be misinterpreted because of technical difficulties, and the interaction of the employee and instructor may be inhibited.

3.5.3.5 Embedded Training. Some equipment, particularly those that use software for testing or to perform a maintenance function, have training embedded into the process. Incorporating a tutorial or “help” menu are simple examples of how a software program can provide instruction as the user performs a specific task. Embedded training is most useful when:

1. The employee already knows the underlying technical information related to the basic task and needs only to learn the details of the procedure;
2. The procedure is straightforward and can be easily understood with a written explanation;
3. The media and method in which training is embedded are part of the task or equipment to be learned; and
4. There is a method to assess the employee’s performance and a record that the training took place.

- 3.5.3.6 Other Methods.** Other methods include self-study, case study, video-recorded demonstrations, and seminars. These methods of training or acquiring knowledge may be appropriate provided the information gained applies to the job function and skills required to perform the work capably.
- 3.5.4 Identify the Training Sources.** The training program should describe procedures for selecting a particular training source. The CAMP organization may elect to provide training in-house using its own personnel or contract with an outside vendor. Some common vendor training sources include the following:
- 3.5.4.1 Original Equipment Manufacturers (OEM).** OEMs may deliver technical information regarding maintenance or alteration on its articles by formal classroom instruction, OJT, distance learning, embedded technology, or CBT material. OEM instructors may come to a CAMP facility to conduct training onsite or deliver the information during seminars, sessions, or extended study at other locations. When the organization chooses to use an OEM course, it should ensure its employees have the prerequisite training and/or experience for the course to be most effective. In addition, the organization should verify that the area of study, course objective, material, and any instructors assigned by the OEM meet the CAMP organization's training standards.
- 3.5.4.2 Aviation Maintenance Technician Schools (AMTS).** An AMTS approved under part 147 can be an effective source of training, particularly for basic knowledge and skills. A CAMP Training Program may need to supplement the training with information unique to its operations and equipment.
- 3.5.4.3 Repair Stations.** Repair stations may provide specific employees with specialized training by contract.
- 3.5.4.4 Government Agencies.** Government agencies provide training on Occupational Safety and Health Administration (OSHA) regulations, Environmental Protection Agency (EPA) regulations, and hazardous materials (HAZMAT) recognition and handling. They also may be a source of training related to maintenance human factors and general safety subjects.
- 3.5.4.5 Trade Associations.** Entities that represent certain segments of the aviation or business community offer training classes on technical and regulatory subjects. Again, the training organization must ensure the individual attending the training completed the course and acquired the necessary knowledge required by the particular maintenance operations and that the course meets the CAMP requirements.
- 3.5.4.6 Other Sources.** There are a variety of other training sources, including independent seminars, product demonstrations, computer-based instructions, and videos. Your CAMP Training Program should view all sources of information as potential training sources. The training program should have a

method of incorporating training opportunities to ensure each employee is capable of performing their assigned task.

Note: Regardless of the training source, the CAMP organization remains responsible for the administration, adequacy, and currency of its training program and for maintaining the training records.

3.5.5 Define Instructor Qualifications and Classification.

3.5.5.1 During the development of the course, the CAMP Training Program should have procedures to define instructor qualifications and qualify instructors. The procedures will include employees, individuals hired temporarily, and vendor instructors. The CAMP organization must have controls that ensure the instructor has the technical background and teaching skills necessary to effectively communicate the course material. When developing instructor qualifications, the CAMP Training Program should:

1. Define the instructors' experience requirements, including the minimum maintenance experience and/or certifications required.
2. Define any requirement to maintain appropriate other certifications, such as those related to the requirements of OSHA, the EPA, and the Department of Transportation (DOT).
3. Define the instructors' duties and responsibilities.
4. Define instructor evaluation, qualification, and authorization, to include:
 - Evaluate an instructor's level of knowledge, experience, and background relevant to a course.
 - Evaluate an instructor's communication and teaching skills.
 - Initially qualify an instructor to teach a particular course.
 - Provide formal instructor training and professional development.
 - Continually evaluate instructor proficiency.
 - Document instructor qualifications and authorizations.

Note: The CAMP Training Program will define the qualifications of its instructors and describe the methods used to ensure any instructors it uses meet those qualifications.

3.5.5.2 Industry research has shown that instructors usually are classified by type, such as:

1. Maintenance Instructor. This is usually a full-time organizational employee who has met the qualifications for the position as described by the job description to teach and/or participate in the development of certain courses.

2. **Contracted Instructor.** This is a third-party training vendor contracted and authorized by the maintenance department to teach. A CAMP organization may use contracted instructors to supplement its training program to develop and teach specialized courses or to train maintenance instructors. However, contracted instructors must still follow the CAMP Training Program.
3. **Assigned Maintenance Instructor.** An assigned maintenance instructor provides instruction on an as-needed basis. These individuals usually teach specialized skills requiring expertise in a particular subject area, such as fueling, deicing, or taxi/engine run. These instructors should be fully versed and knowledgeable in their specialty.
4. **Adjunct Instructor.** This is an employee with great skill in a particular area with the authority to teach a course usually taught only by a maintenance instructor. Adjunct instructors differ from “assigned maintenance instructors” in that an adjunct instructor usually is, for practical purposes, a member of the training department, and their duty is to teach courses that “assigned maintenance instructors” are qualified to teach.
5. **OJT Instructor.** This is an employee and experienced subject matter expert who teaches task-specific skills and information to others on the job. This type of instructor should be able to perform the assigned tasks satisfactorily and should be able to transfer competency skills, knowledge, and techniques to students. This person will monitor the performance level of students and determine their competency skills, knowledge, and abilities.
6. **Practical Examiner.** The CAMP organization will designate these individuals. They can be either an organization’s employee or a third party. They administer practical tests, such as engine run and taxi practical tests.

3.5.6 Measure Training Effectiveness. The CAMP Training Program will describe a process to evaluate training effectiveness from different perspectives. This process is distinct from your CASS and SMS reviews; however, the data your CAMP Training Program review produces will be assessed by CASS and SMS.

3.5.6.1 Does the employee understand the material? The first measure of effective training is usually accomplished with oral or written tests. After each course, employees should be able to demonstrate (via an examination) an understanding of applicable systems and their operation. They should be allowed and encouraged to access maintenance manuals or instructions as the ultimate source for task performance. Regular use of approved manuals is essential to ensure safe and effective performance of maintenance and inspection tasks.

3.5.6.2 Did the employee demonstrate the ability to perform the tasks for which the training was given? This normally consists of a practical demonstration of the task by the student. Individuals should be able to demonstrate their skill and ability to:

1. Work according to the maintenance manual and other relevant instructions appropriate for the type of aircraft and task at hand;
2. Correctly use technical literature and documentation associated with the performance tasks;
3. Correctly identify and use special tooling and test equipment; and
4. Competently perform removal and replacement of components and modules unique to the type, including any on-wing maintenance activity.

3.5.6.3 As a course concludes, training instructors should evaluate the effectiveness of that course as well as their own performance.

3.5.6.4 The CAMP Training Program should obtain feedback from employees and review subject areas that may have been commonly misunderstood. Training instructors should be open minded and allow course critiques, self-evaluations, and information sharing to improve the overall effectiveness of the course.

3.5.7 Course Curriculum and Outline. At the completion of the course development phase, the CAMP Training Program will produce a course curriculum or equivalent that includes:

1. The course title.
2. Applicability. Identify to whom the course applies.
3. Objective or desired outcome. A statement that clearly describes what employees will be able to do at the conclusion of the training. For example, successfully perform and document maintenance actions.
4. Prerequisites or minimum student qualifications prescribed by the regulations or required by the CAMP organization for enrollment in the course. For example, the type of airman certificate, aircraft, product and/or article qualifications, previous training, experience with other operators, and recent experience requirements.
5. Anticipated time of instruction for completion and/or the knowledge or skill requirements that must be demonstrated to obtain credit for the course/lesson.
6. Training methods. How the course will be taught, such as classroom or OJT.
7. Training sources. Identifies who teaches the course, and whether it is taught in-house or provided by a vendor.
8. Instructor qualifications. The qualifications an instructor needs to have to teach the course.
9. Qualified instructors. Identifies who is qualified and authorized to teach the course.

10. Method of evaluation/course completion standard. The method the instructor will use to validate the degree to which learning objectives have been met, including minimum test scores.
11. A course outline arranged by major topics and subtopics.
12. A lesson plan that includes teaching aids, major points, notes, and references for use by the instructor.
13. A study guide containing training data for the employee that supports the course presentation and allows the employee to take notes.
14. Training certificates, forms, and/or training records. These types of documents are used for recording student attendance, progress, and/or completion and to justify certain authorizations, such as airworthiness release, approval for return to service, RII, engine run, and aircraft taxi.

3.5.8 Documentation Examples. Figures 3-5 and 3-6 provide examples of course requirements documentation. The FAA is not prescribing these examples, but merely providing samples used by the industry.

Figure 3-5. Sample 1 of Course Requirements Documentation

COURSE NO. 123 Recurrent Paperwork Class 4 HOURS	
Training Objective:	<i>To provide personnel with refresher training on common and new paperwork in daily use.</i>
Performance Objective:	<i>Upon completion, the student will have demonstrated working knowledge of all covered maintenance paperwork.</i>
Course Requirement:	<i>Student must participate in class.</i>
Course Prerequisite:	<i>Open to anyone in the maintenance and engineering department.</i>
Course Content:	
	I. Introduction
	II. Flight Log Book
	III. MEL/CDL
	IV. Deferred Maintenance
	V. Non-routine Card
	VI. RIIs
	VII. Parts Tags
	VIII. Etc.

Figure 3-6. Sample 2 of Course Requirements Documentation

<p>1.1.0 Initial Maintenance Employee Recurrent Training</p> <p>A. Guidelines</p> <ol style="list-style-type: none"> 1. Student: All Maintenance Department employees 2. Objective: To provide the training required to perform duties as outlined in the GMM. 3. Method: Classroom lecture 4. Course Time: 16 hours: Hangar/shop personnel 12 hours: Planning/records personnel 8 hours: Stores personnel 5. Necessary Equipment: Projector 6. Materials: Training handouts 7. References: GMM, FAA regulations 8. Recurrent training: 9. Course Completion Standards: 80% on written test <p>B. Course Outline</p> <ol style="list-style-type: none"> 1. Company History 2. Introduction to the Maintenance Department <ul style="list-style-type: none"> ▪ Organizational Chart ▪ Job Descriptions ▪ Key Personnel 3. Safety <ul style="list-style-type: none"> ▪ Policies and Procedures ▪ Fire Extinguisher Training ▪ Lockout/tag Procedures ▪ Eye Wash Stations ▪ First Aid Kits 4. <i>Etc.</i>

3.6 Training Completion Documentation.

3.6.1 A CAMP Training Program should provide a means to document employee training. The competency of each employee depends on acquired training, knowledge, and experience. Consequently, an important source of information to determine employee competencies is the employee's training records.

3.6.2 A CAMP Training Program should provide a means to retain its training records electronically or as a hard copy. In either case, standardize the format and content of your training records according to your organizational, occupational, and individual training needs assessments. A review of industry practices suggests that each employee's record should contain at least the following information:

1. Name and job position.
2. Employment history or résumé.
3. Training requirements as determined by the employee's needs assessment, including requirements for indoctrination, initial and recurrent, and other training required by areas and course titles.

4. FAA certificates applicable to the employee's qualifications. For example, supervisors, RII personnel, and individuals approving articles for return to service must be appropriately certificated under 14 CFR part [65](#).
5. Other certifications, diplomas, and degrees.
6. Authorizations and qualifications (other than those listed in item 4).
7. Proof of training course completion, if determined applicable to capabilities. This includes training provided by other employers.
8. A list of accomplished training, to include enough information to determine whether it is applicable to the employee's capability to perform assigned tasks. Such information may include:
 - Course title or description,
 - Course objective,
 - Date completed,
 - Test results,
 - Total hours of training,
 - Location of training,
 - Name of instructor and instructor qualifications, and
 - Signature of employee.
9. Any other relevant documentation determining the capability to perform tasks associated with assigned duties, such as past employment as well as written, oral, and practical test results.

3.6.3 The CAMP Training Program, CASS, and SMS should have procedures to regularly review all training records to ensure they comply with the requirements set forth in the training program manual.

3.7 Training Program Review and Evaluation.

3.7.1 The CAMP Training Program and your CASS should have documented schedules set to provide for periodic review of the training program. During this review, determine if any changes should be made to the program, including revising, adding, or deleting courses. These periodic reviews should validate that your annual training plan is effective. The program should have a means to document this review.

3.7.2 A variety of sources will influence a CAMP Training Program evaluation:

1. Student course feedback through course evaluations and student course assessment results.
2. Negative trends in quality control inspection results for finished work.
3. Voluntary disclosures that have root causes of improper training or a lack of training.

4. Internal audit results.
5. CASS program findings.
6. Aircraft, equipment, or tooling changes.
7. Employee recommendations or concerns due to competencies for work assignments or training needs.
8. Industry trends and shared information.
9. FAA and operator information gathered during an investigation of noncompliance.

CHAPTER 4 MAINTENANCE TRAINING COURSE SUBJECTS

4.1 Regulatory Maintenance Training Course Subjects.

4.1.1 The Manual.

4.1.1.1 A manual is required of part [91K](#) fractional ownership program managers and part [121](#) and most part [135](#) air carriers. It is the foundational document that includes the instructions and information necessary to allow personnel concerned to perform their duties with a high degree of safety. Sections [91.1427](#), [121.369](#), and [135.427](#) require you to place in your manual:

- The inspection program;
- The program covering other maintenance, preventive maintenance, and alterations;
- A chart or description of the CAMP organization;
- A list of persons with whom the CAMP organization has arranged for the performance of any of its required inspections;
- A list of persons with whom the CAMP organization has arranged for the performance of maintenance, preventive maintenance, or alterations; and
- A general description of arranged work.

4.1.1.2 The relevance and importance of this manual, as well as its outline and availability, is normally covered during indoctrination training. Every aspect of the CAMP is explained within this manual and the FAA expects it to be easily understood, easily accessed, and frequently referred to and used.

4.1.2 Course Subjects. It is through your CAMP Training Program that you ensure competent personnel (those who are fully informed about procedures, techniques, and new equipment in use) are provided to perform maintenance, preventive maintenance, and alterations. A competent person knows how to determine the adequacy of their work, and (if required) that the work of others is done in accordance with your procedures and they have a full understanding of their assigned duties and authority. They should fully understand their part in your overarching responsibility to ensure airworthiness. Your CAMP Training Program is your means to present, explain, and ensure the methods, techniques, and practices defined in your manual are understood. Those you employ, contract with, and authorize to perform maintenance (including inspection), preventive maintenance, and alterations must fully understand your manual procedures and techniques and fully understand that they must perform as your manual prescribes. The following is a list of suggested subjects that are reflective of the CAMP elements as explained in AC [120-16](#), Air Carrier Maintenance Programs:

1. The CAMP airworthiness responsibility.
2. The manual (in general):

- a. Maintenance manuals.
 - b. Revising and availability.
 - c. The manual's role.
 - d. Major sections of the manual, such as:
 - Administrative policies and procedures.
 - Instructions for the administration, management, and accomplishment of the CAMP.
 - Technical data, standards, methods, techniques, and procedures.
 - Work cards (e.g., job or task cards).
 - Inclusion of contract maintenance policies, methods, techniques, procedures, and instructions.
3. The CAMP organization:
- a. The CAMP organizational structure, to include company rules and policies.
 - b. Separation of required inspections from maintenance.
 - c. Director of Maintenance (DOM) roles and responsibilities.
 - d. Chief Inspector roles and responsibilities.
 - e. Management personnel.
 - f. Technical personnel.
4. Accomplishment and approval of maintenance and alterations:
- a. Maintenance procedures (e.g., manuals, on-the-job training (OJT), or job aides, such as YouTube or computer-based training (CBT)).
 - b. Airworthiness Directive (AD) management.
 - c. Major repairs and alterations.
 - d. Airworthiness Release Form or aircraft log entry and approval for return to service.
 - e. Scope of maintenance:
 - Scheduled maintenance, to include part airworthiness, tagging, and identification.
 - Unscheduled maintenance:
 - Minimum equipment list (MEL) methods, policies, and procedures.
 - Logbook procedures.
 - Specific maintenance requirements for major components:

- Engine program.
 - Propeller program.
 - Emergency evacuation systems.
 - Off-wing parts and appliances maintenance program.
5. The maintenance schedule:
 - a. Time limitations or standards for determining time limitations.
 - b. The FAA's role.
 - c. Maintenance schedule task organization and content.
 - d. Standards that determine maintenance schedules.
 6. Required Inspection Items (RII):
 - a. The RII list.
 - b. The RII procedures standards and limits.
 - c. RII inspector certification, qualification, training, and authorization, to include a list of authorized RII personnel.
 7. The maintenance recordkeeping system:
 - a. The significance of making and keeping maintenance records as they relate to the U.S. Standard Airworthiness Certificate.
 - b. Title 14 CFR part [43](#) requirements.
 - c. Interfacing with and meeting 14 CFR part [145](#) certificated repair stations' requirements, as applicable.
 - d. Making and keeping required records within the recordkeeping system:
 - Familiarity and use.
 - Record locations.
 - AD status.
 - e. Required records. This includes accounting for and retrieval (e.g., total time in service, current status of life-limited parts, time since last overhaul, current inspection status of aircraft, current status of ADs, current major alterations for the entire aircraft).
 - f. Maintenance log.
 - g. Airworthiness release.
 - h. Mechanical interruption reports.
 - i. Service Difficulty Reporting (SDR).
 - j. Reporting major repairs and alterations.

8. Contract maintenance, to include scope and responsibility (see Chapter [5](#) for more information).
9. Continuing Analysis and Surveillance System (CASS):
 - a. Report a program deficiency to CASS.
 - b. Specific training for CASS auditors and analysts.

4.2 Maintenance Human Factors Training.

- 4.2.1** The objectives of human factors training are to improve safety, decrease personnel and organizational exposure to risk, and capture and reduce errors. An important aspect of accident decline is the reduction of human errors generated during the maintenance of aircraft. An understanding of human limitations improves an individual's ability to recognize situations that can lead to errors.
- 4.2.2** Although training is an important part of human factors, reducing human errors requires more than just training. It requires a total error reduction program involving maintenance personnel and their senior managers.
- 4.2.2.1** An effective human factors training program begins at the highest level of an organization. This is where an organization:
1. Defines the environment in which individuals conduct their tasks;
 2. Defines the policies and procedures individuals must follow;
 3. Allocates the resources individuals need to achieve safety and meet production goals; and
 4. Investigates system failures and takes remedial action to avoid repetition.
- 4.2.2.2** Human factors training will have a maximum impact only if it is reinforced by other related program elements and a supportive corporate culture. In addition, consistent follow-through over time is required to encourage maintenance personnel support and participation. To promote this, the CAMP organization should establish a clear, fair, and consistently applied discipline policy that encourages maintenance personnel to provide critical data about the factors that caused the error. To achieve this goal, design your human factors training program with policy and practices that do not punish maintenance personnel for unintentional errors. Your policy and practices should encourage immediate notification, open information sharing, and honest accountability with the intent being to identify what caused the error to occur. It is essential for the causal factors to be shared with the CASS and Safety Management Programs in order to identify possible systemic problems that have resulted from weak or incorrect training.
- 4.2.2.3** The FAA encourages voluntary safety reporting systems, such as the Aviation Safety Action Program (ASAP) and Voluntary Disclosure Reporting Program (VDRP). A good human factors program should incorporate ASAP as a means

for reporting otherwise missed safety events. The overall objective of the ASAP is to encourage voluntarily reporting of safety information that may be critical to identifying potential precursors to accidents. The FAA has determined that identifying these precursors is essential to further reducing the already-low accident rate. For further information on the ASAP, refer to AC [120-66](#), Aviation Safety Action Program.

4.2.3 Human factors training should cover basic safety principles and practices as part of an organization's safety management and quality systems. The training should ensure maintenance personnel carry out their work in a professional manner and aircraft are released into service in a safe and airworthy condition. The objectives of human factors training should be to:

- Improve safety;
- Decrease personnel and organizational exposure to risk;
- Capture and reduce errors; and
- Reduce the potential for incidents and accidents.

4.2.4 Human factors training objectives are achieved by:

- Imparting knowledge on human factors and safety;
- Identifying how the human factors training program works;
- Developing skills, where appropriate;
- Affecting people's attitudes; and
- Affecting behavior.

4.2.5 Where possible, relate human factors training to maintenance practices. Give examples and scenarios. The following are suggested human factors elements for inclusion into the CAMP Training Program:

1. General/introduction to human factors;
2. Statistics;
3. Safety culture/organizational factors;
4. Contributing factors and human error;
5. Types of errors in maintenance tasks;
6. Human reliability;
7. Human performance and limitation;
8. Vision and hearing;
9. Stress and workload management;
10. Situational awareness;

11. Error investigating process;
12. Personal error reduction strategies;
13. Environment;
14. Communication;
15. Procedures, information, tools, and task signoff practices;
16. Teamwork, professionalism, and integrity;
17. Shift and task turnover procedures;
18. Fatigue management and duty time limitations;
19. Undocumented maintenance; and
20. Introduction to the Dirty Dozen. (The Dirty Dozen refers to twelve of the most common human error preconditions, or conditions that can act as precursors, to accidents or incidents. Refer to AC [120-72](#), Maintenance Human Factors Training.)

Note: For additional information regarding human factors programs and training, refer to the FAA Operator's Manual: Human Factors in Aviation Maintenance located at https://www.faa.gov/sites/faa.gov/files/data_research/research/med_hum_anfacs/oamtechreports/201502.pdf.

- 4.3 Safety and Risk Management Subjects.** As you develop your CAMP Training Program, application of the following Safety Management System (SMS) pillars will ensure your CAMP Training Program is designed well, performing as it should, and the maintenance you perform is done with the highest degree of safety.
- 4.3.1 Safety Policy.** As you develop your CAMP Training Program, your policy will identify its role toward ensuring safety and will include individual accountability for its development, implementation, and continual improvement.
- 4.3.2 Safety Risk Management (SRM).** Systematic review of maintenance organization deficiencies in relation to your CAMP Training Program will assist in identifying hazards and manage their associated risk. When you identify competency issues, you can improve training and/or establish controls to mitigate safety risks.
- 4.3.3 Safety Assurance (SA).** Systematically monitoring the competencies required of your maintenance organization in relation to your training program will produce data validating that your CAMP organization is competent, functioning as designed, and the work you and those you contract with is done with the highest degree of safety.
- 4.3.4 Safety Promotion.** The CAMP Training Program is one of the means needed to ensure competency, apply training, and communicate information.

Note: For further information on an SMS, refer to AC [120-92](#), Safety Management Systems for Aviation Service Providers.

4.4 Maintenance-Specific Courses.

- 4.4.1** A review of industry practices has shown Air Transport Association (ATA) codes in conjunction with aircraft make, model, and type are an effective means to organize training directly related to the performance of aircraft-related maintenance tasks. Organizing training by ATA codes and aircraft make, model, and type can identify if a person's experience and skills are adequate to perform the work they are expected to perform.
- 4.4.2** To meet the CAMP requirement to ensure competent personnel are provided to perform maintenance, a typical CAMP Training Program provides indoctrination courses that are broad in nature. As individuals work and authority becomes more defined, their education must continue. The subject matter must become more refined to their assignments and prepare them to perform competently. Additional training tools become more relevant and effective than structured classroom-type training. CBT courses, which could include technologies like YouTube and video recordings, are advanced training methods that combine visual with audio instruction. CBT courses are stored on the computer and can be accessed, scheduled, and performed by individuals as their time permits and as often as they feel the need to review the subject. OJT is a time-proven method that also provides direct one-on-one training around specific competencies that must be acquired and mastered by individuals new to the tasks at hand. The following are areas where subject matter would be more refined and offered on a continuing or recurrent basis.

4.4.2.1 Line and Base Maintenance Training.

1. Line maintenance is any unscheduled maintenance resulting from unforeseen events or scheduled checks that contain servicing and/or inspections that do not require specialized training, equipment, or facilities. Line and base maintenance training may include:
 - Troubleshooting;
 - Logbook discrepancies;
 - Component replacement to include the use of external test equipment, up to and including components, such as engines and propellers;
 - Scheduled maintenance and/or checks, including visual inspections that will detect obvious unsatisfactory conditions/discrepancies, but that do not require extensive indepth inspection;
 - Internal structures, systems, and powerplant items visible through quick-opening access panels/doors;
 - Minor repairs and modifications that do not require extensive disassembly and that can be accomplished by simple means;

- MEL and the proper procedures on how to defer an MEL item, including special procedures; and
 - Configuration Deviation List (CDL) and the proper procedures on how to defer a CDL item, including special procedures.
2. At the completion of line and base maintenance training, personnel should be able to:
- Perform system, engine, component, operational, and/or functional checks, as specified in the maintenance manual;
 - Correlate information for the purpose of making decisions with respect to fault diagnosis and rectification to maintenance manual level; and
 - Describe procedures for replacing components unique to aircraft types.

4.4.2.2 Structural and Special Process Repair Training. This type of training includes maintenance, repair, and fabrication of aircraft structural members, sheet metal, and stress panels. Also included is the identification, use, and maintenance of common, special, and precision tools. This type of training may include courses on:

1. Fabricating aircraft and related sheet metal parts and assemblies, which may include:
- Making layouts on sheet metal for parts fabrication in accordance with instructions from applicable technical orders;
 - Cutting and trimming metal parts using snips, powered and non-powered shears, and saws;
 - Drilling and punching holes using hand and pneumatic drills, drill presses, and rotary punches;
 - Forming sheet metal parts (using bending, shrinking, and stretching machines and hand-forming techniques) and assembling and fastening parts using solid rivets, blind rivets, and special fasteners; and
 - Proper use and referencing of the Structural Repair Manual (SRM) and Aircraft Maintenance Manual (AMM), including all other approved repair data.
2. Repairing and modifying aircraft metal structures, which may include:
- Inspecting aircraft metal structures to determine repair procedures necessary to restore original strength and contour;
 - Repairing damaged aircraft structure;
 - Removing and/or replacing aircraft structural parts for repair or modification; and
 - Modifying aircraft structural parts as specified by technical orders.

3. Repairing special composition aircraft structures, which may include identifying and inspecting plastic, fiberglass, honeycomb, and composite bonded structures.
4. Using special aircraft hardware, which may include installing specialty fasteners, determining working length, cuts, swage terminals, and testing aircraft control cables, and cutting to length.

4.4.2.3 Avionics Maintenance Training. Avionics maintenance training includes inspecting, servicing, maintaining, troubleshooting, and repairing avionics systems that perform communications, navigation, collision avoidance, and automatic flight-control functions. The training may include courses on the following:

1. Preventive maintenance on mechanical/avionics instruments systems, which may include:
 - Troubleshooting, adjusting, bench checking, and performing operational checks on electromechanical devices;
 - Barometric flight instruments;
 - Engine and temperature instruments;
 - Pressure, position, and liquid level indicating systems;
 - Integrated flight and navigational instruments;
 - Electronic compass systems;
 - Autopilot;
 - Flight director systems; and
 - Global Positioning Systems (GPS) through proper use of technical order procedures.
2. Operation and use of test equipment, which may include:
 - Performing operational checks;
 - Calibrating and troubleshooting mechanical/avionics instruments and component parts using test equipment and special test sets, such as vacuum/pressure-operated barometers and manometers; electronic compass compensators; capacitance type fuel quantity testers; multimeters, tachometers, and thermometer testers; attitude gyro testers; flight director system testers; dead weight; and auto synchro and fuel flowmeter testers; and
 - Swinging and compensating magnetic and electronic compass systems.

4.4.2.4 Mechanical and Electrical Maintenance Training. Training in this area includes inspecting, servicing, maintaining, troubleshooting, and repairing aircraft batteries, AC and DC power generation, conversion, and distribution

systems, as well as the electrical control and indication functions of all airframe systems, including hydraulic, flight control, landing gear, fuel, environmental control, powerplant, drivetrain, anti-ice, and fire detection systems. The objective of this training is for employees to have a working knowledge of mechanical, electrical, and powerplant systems. Courses associated with this training could include:

1. A review of the aircraft systems component locations;
2. Servicing;
3. Minor and major maintenance;
4. Troubleshooting; and
5. Ramp maintenance and the associated safety precautions, such as:
 - Engine and auxiliary power unit intake and exhaust areas,
 - Inadvertent control surface operation and thrust reversers,
 - Transmitting radio frequency energy during refueling and maintenance activities,
 - Cautions and hazard avoidance associated with systems servicing during in-transit maintenance, and
 - Precautions during towing, taxiing, push-back operations, and docking.

4.4.2.5 Other Component Maintenance Training. Component maintenance training includes inspecting, servicing, maintaining, troubleshooting, and repairing a subassembly of an aircraft that is usually removable in one piece and interchangeable with other standard components, such as engines and engine parts. The objective of this training is for the employee to have working knowledge of operations procedures, equipment, and the tools necessary for various maintenance specialties; special reference documents; and engineering data and media pertinent to appropriate tasks for the various specialties. This training may include courses on:

- Engine and engine components,
- Hydraulic system components,
- Associated engine and accessory overhaul,
- Hydrostatic testing,
- Equipment and furnishings, and
- Evacuation emergency equipment.

- 4.4.2.6 Engine Run and Taxi Training.** This type of training includes the policies/procedures for the engine run and taxi process, including runway incursion precautions and preventions.
- 4.4.2.7 High-Load Events and Lightning Strike Training.** This type of training involves the specialized policies and structural inspection procedures that must be followed after a lightning strike or high-load event, such as a hard landing, turbulence, or excessive airframe loads associated with abnormal flight operations occur.

CHAPTER 5 CONTRACT MAINTENANCE TRAINING

5.1 Contract Maintenance Oversight. An air carrier/program manager may arrange with another person to perform maintenance, preventive maintenance, and alterations. However, the air carriers/program managers are always primarily responsible for the airworthiness of its aircraft, as stated in §§ [91.1413](#), [121.363](#), and [135.413](#). This responsibility may not be delegated.

Note: Safety Management Systems (SMS) and Continuing Analysis and Surveillance Systems (CASS) must provide adequate oversight of contract maintenance to reduce the risk of returning aircraft to service that are not airworthy.

5.1.1 Aircraft accident reports identify failure to maintain sufficient oversight and control over contract maintenance and Required Inspection Item (RII) procedures as a contributing factor in the probable cause of some accidents that resulted in loss of life. A contributing factor to this loss of control is the natural interface that exists between a CAMP organization and contract maintenance. Due to the separation between the contracting operator and its contracted maintenance provider, it is important to mention the additional FAA regulatory controls within part [121](#) (§ [121.368](#)) and part [135](#) (§ [135.426](#)). While these regulations do not apply to part [91K](#) operations, the expectations are the same. These requirements are overarching in regards to each element of a CAMP and apply indirectly to contract maintenance provider training. FAA regulatory controls within §§ [121.368](#) and [135.426](#) provide these definitions.

1. A maintenance provider is any person who performs maintenance, preventive maintenance, or an alteration for a certificate holder (CH) other than a person who is trained by and employed directly by that CH.
2. Covered work means any of the following:
 - Essential maintenance that could result in a failure, malfunction, or defect endangering the safe operation of an aircraft if not performed properly or if improper parts or materials are used;
 - Regularly scheduled maintenance; or
 - An RII on an aircraft.
3. Directly in charge means having responsibility for covered work performed by a maintenance provider. A representative of the CH directly in charge of covered work does not need to physically observe and direct each maintenance provider constantly, but must be available for consultation on matters requiring instruction or decision.

5.1.2 The above regulations use these definitions to require part [121](#) and [135](#) CHs to be directly in charge of all covered work done for them by a maintenance provider. They require the maintenance provider to perform all work per the CH's manual and restrict maintenance providers from performing covered work unless that work is carried out under the supervision and control of the CH.

- 5.1.2.1** Each part 121 and 135 CH who contracts for maintenance, preventive maintenance, or alterations must develop and implement policies, procedures, methods, and instructions for the accomplishment of all contracted maintenance, preventive maintenance, and alterations. These policies, procedures, methods, and instructions must provide for the maintenance, preventive maintenance, and alterations to be performed in accordance with the CH's maintenance program and maintenance manual.
- 5.1.2.2** Each part 121 and 135 CH who contracts for maintenance, preventive maintenance, or alterations must ensure that its system for the continuing analysis and surveillance of the maintenance, preventive maintenance, and alterations carried out by a maintenance provider contains procedures for the oversight of all contracted covered work. (Refer to § [121.373\(a\)](#) or § [135.431\(a\)](#).) All the policies, procedures, methods, and instructions for the accomplishment of all contracted maintenance, preventive maintenance, and alterations (as well as the CASS procedures for oversight of all contracted work) must be acceptable to the FAA and included in the CH's manual as required by either § [121.369\(b\)\(10\)](#) or § [135.427\(b\)\(10\)](#).
- 5.1.2.3** Finally, each CH who contracts for maintenance, preventive maintenance, or alterations must provide to its appropriate FAA office (in a format acceptable to the FAA) a list of its maintenance providers. The list must include the name of each maintenance provider, its physical (street) address(es) where the work is carried out, and a description of the type of maintenance, preventive maintenance, or alteration performed at each location. The CH must update this list with any changes, including additions or deletions, and provide it to the FAA in a format acceptable to the FAA by the last day of each calendar month.
- 5.1.3** Additional regulatory controls governing contract maintenance were not applied to part 91K operations; however, the responsibilities in § 91.1413 are equivalent. This regulation places primary responsibility on the CAMP program manager for:
1. Maintaining the airworthiness of all program aircraft, including airframes, aircraft engines, propellers, rotors, appliances, and parts;
 2. Maintaining all program aircraft in accordance with the applicable regulatory requirements; and
 3. Repairing defects that occur between regularly scheduled maintenance required under part [43](#).
- 5.1.3.1** Additionally, per § 91.1413(b), each CAMP program manager must employ a Director of Maintenance (DOM) or equivalent position. The DOM must be a certificated mechanic with Airframe and Powerplant (A&P) ratings and have responsibility for the maintenance program for all program aircraft maintained under a CAMP. This person may not also act as Chief Inspector. The program manager must also employ a Chief Inspector or equivalent position. The Chief

Inspector must be a certificated mechanic with A&P ratings and have overall responsibility for the inspection aspects of the CAMP. This person may not also act as the DOM.

- 5.1.3.2** Finally, per § 91.1413(c), the CAMP program manager must have the personnel to perform the maintenance of program aircraft, including airframes, aircraft engines, propellers, rotors, appliances, emergency equipment, and parts under its manual and the applicable regulations. The program manager may choose to make arrangements with another person for the performance of maintenance. However, the program manager must ensure that any maintenance, preventive maintenance, or alteration that is performed by another person is performed in accordance with the program manager's operating manual and the applicable regulations.
- 5.1.3.3** Section [91.1437](#) allows a CAMP program manager to employ or make arrangements with other persons to perform maintenance and preventive maintenance as provided in its maintenance manual. Section [91.1435](#) requires that, except when maintenance, preventive maintenance, alterations, and required inspections are performed by FAA-certificated repair stations located outside the United States, each person who is directly in charge of maintenance, preventive maintenance, or alterations for a CAMP (and each person performing required inspections for a CAMP) must hold an appropriate airman certificate.
- 5.1.3.4** Section 91.1435 also explains that a person "directly in charge" is each person assigned to a position in which that person is responsible for the work of a shop or station that performs maintenance, preventive maintenance, alterations, or other functions affecting airworthiness. A person who is directly in charge need not physically observe and direct each worker constantly, but must be available for consultation and decisions on matters requiring instruction or decisions from a higher authority than that of the person performing the work.
- 5.1.3.5** Finally, § [91.1431](#) requires a program manager who maintains program aircraft under a CAMP to establish and maintain a system for the continuing analysis and surveillance of the performance and effectiveness of its inspection program and the program covering other maintenance, preventive maintenance, and alterations. This includes the correction of any deficiencies in those programs, regardless of whether those programs are carried out by employees of the program manager or by another person.

5.2 Basic Training Program Requirements.

- 5.2.1** CAMP Training Program. Sections [91.1433](#), [121.375](#), and [135.433](#) require those who maintain aircraft under a CAMP, or the persons performing maintenance or preventive maintenance functions for the aircraft, have a training program to ensure each person (including inspection personnel) who determines the adequacy of work done is fully

informed about procedures, techniques, and new equipment in use and is competent to perform that person's duties.

5.2.2 Required Inspection Personnel.

5.2.2.1 Sections [91.1429](#), [121.371](#), and [135.429](#) require that persons who perform required inspections be appropriately certificated, properly trained, qualified, and authorized to do so. Each CAMP organization must maintain (or must ensure that each person with whom it arranges to perform required inspections maintains) a current listing of persons who have been trained, qualified, and authorized to conduct required inspections. A significant output of the CAMP Training Program is the ability of the CAMP organization to maintain (or determine each person with whom it arranges to perform required inspections maintains) a current listing of persons who have been trained, qualified, and authorized to conduct required inspections.

5.2.2.2 Per §§ 91.1429(d), 121.371(d), and 135.429(e), persons who perform required inspections must be identified by name, occupational title, and the inspections they are authorized to perform. The CAMP organization (or person who performs its required inspections) must give written information to each person authorized describing the extent of that person's responsibilities, authorities, and inspectional limitations. This written information authorizing them is normally done as training is completed. They are placed on the list available for inspection by the FAA upon request.

5.2.3 Contract Maintenance Provider Training Programs.

5.2.3.1 Maintenance provider training should include function-specific training appropriate to each contract individual's job assignment or area of responsibility. The CAMP maintenance organization does not need to provide training to maintenance provider personnel in areas that do not concern them. For example, training on aircraft log procedures and minimum equipment list (MEL) procedures would not be required for technicians working in an aircraft overhaul setting, but would be required for maintenance personnel assigned to perform on-call maintenance.

5.2.3.2 If a maintenance provider has specific types of training for its personnel, CAMP operators do not need to duplicate that training for those individuals. However, the CAMP operator must ensure that the training provided equates to maintenance provider personnel being competent to perform its maintenance program. The CAMP operator's organization and CASS are responsible to review and accept outsource maintenance provider training programs. It is the CAMP operator's responsibility to ensure that outsourced maintenance provider personnel receive training equivalent to its own. This responsibility includes ensuring that those personnel have a full understanding of the CAMP manual procedures and techniques, that they understand any

new equipment you have introduced, and that they are competent to perform their duties.

5.3 Subject Areas. Examples of subject areas typically provided to personnel at contract maintenance facilities include the following:

1. Company policies and procedures,
2. Logbook procedures,
3. MEL/Configuration Deviation List (CDL) procedures,
4. Airworthiness release procedures,
5. RIIs,
6. Parts tags,
7. Appropriate fleet training,
8. Line maintenance procedures,
9. Heavy maintenance procedures,
10. Component-level maintenance procedures,
11. Use of approved aircraft maintenance and illustrated parts manuals,
12. Working with the CAMP manual job procedure cards,
13. Proper documentation of work and turnover processes, and
14. Significant maintenance personnel contacts for guidance and direction.

CHAPTER 6 ADMINISTRATIVE INFORMATION

- 6.1 Copies of This AC and Other FAA Publications.** This AC and other FAA publications are available on the FAA website at <https://www.faa.gov> and DRS at <https://drs.faa.gov>.
- 6.2 Further Information on This AC.** For information concerning this AC, contact the Flight Standards Directives Management Officer at 9-AWA-AFB-120-Directives@faa.gov.
- 6.3 AC Feedback Form.** For your convenience, the AC Feedback Form is the last page of this AC. Note any deficiencies found, clarifications needed, or suggested improvements regarding the contents of this AC on the Feedback Form.

APPENDIX A. SAMPLE TRAINING PROGRAM

A.1 Introduction.

This appendix provides a sample training program. This example is consistent with the guidance provided in this AC. CAMP operators are not required to follow this sample to have an acceptable training program. Individual training programs may require different or additional information.

Each program should be tailored to fit the size and complexity of the CAMP organization and operation. For example, a larger 14 CFR part [121](#) air carrier will have considerably more detail in its program description than a 14 CFR part [135](#) (10 or more) operator with just a few aircraft. This sample program does not set minimum limits or describe the details of the areas of study, courses, course outlines, or instructor qualifications.

A.2 Sample Training Program. The following example is for a CAMP operator doing business as ABC Air. ABC Air has a training department and manager of training who reports directly to the Director of Maintenance (DOM).

<p>I. Introduction</p>
<p>The purpose of this manual is to establish a maintenance training program. This program ensures all personnel who perform inspections, alterations, maintenance, or preventive maintenance functions on ABC Air aircraft are fully informed about procedures, techniques, and new equipment in use and are competent to perform their duties in accordance with 14 CFR part 43 and parts 121 and 135, as applicable.</p> <p>The primary purpose of the maintenance training department is to use standardized teaching procedures, maintain maintenance personnel proficiency, improve maintenance personnel skills, and carry out the training program, as well as to remain in compliance with applicable laws and regulations. This manual also establishes the necessary training guidelines for ABC Air’s maintenance department personnel to improve workplace safety, product quality, and job performance.</p>
<p>II. Policies</p>
<p>ABC Air is committed to providing safe and reliable services; and, to ensure that commitment, we provide only first-class training to all our maintenance personnel. We train and motivate our maintenance personnel for maximum achievement through the design and delivery of high quality, cost-effective skill enhancement programs.</p> <p>Our maintenance training program is a standardized teaching process to inform maintenance personnel of procedures and techniques used in maintaining our equipment. Emphasis throughout the entire program must be on safety and airworthiness. The outcome of this program will be that each employee is competent to perform duties as assigned.</p>

It is our policy to ensure that only appropriately certificated, properly trained, qualified, and authorized employees are assigned the responsibility for maintenance, preventive maintenance, alteration, and inspection in determining the adequacy of any aircraft maintenance work accomplished.

Individuals selected for training will be notified in writing of the time and location of the training. This notification will be signed by the immediate supervisor, given to the employee for signature, and a copy returned to the training department for verification that the individual has been informed and will attend.

III. Training Department Duties and Responsibilities

The duties and responsibilities of the manager of training include the following:

1. Determining maintenance training requirements and ensuring maintenance personnel are kept up to date on procedures, techniques, and new equipment.
2. Continually analyzing the training program to ensure this manual and training content is current.
3. Developing the courses that will satisfy all established training requirements as well as the course content and presentation quality.
4. Providing formal instruction covering maintenance and inspection of aircraft, systems, and equipment.
5. Providing formal/practical on-the-job training (OJT).
6. Arranging factory and vendor training for all maintenance personnel, as required.
7. Maintaining maintenance personnel training records, a reference library, checklists, and training aids.
8. Remaining current on the latest equipment updates and maintenance methods through factory school attendance, individual study, and attendance at industry training conferences and workshops.
9. Developing new training modules, as needed, to improve the operating efficiency of the maintenance department using published manufacturer's documents.
10. Publishing a training schedule.
11. Providing training to on-call and third-party maintenance providers as required.

IV. Training Needs Assessment

The needs assessment process consists of assessing and verifying training needs before the development of training courses. These activities include identifying subject matter experts to participate in the assessment, determining if a training gap exists, and developing objectives and methods for delivering the training. The need for training and qualification generally originates from seven sources:

1. Hiring of new maintenance personnel.
2. Acquisition of new equipment or changes to existing equipment.
3. Implementation of specialized tests, inspections, or procedures.
4. Returning to a job that requires requalification.
5. Recurrent training.
6. A corrective action based on a deficiency found through the Continuing Analysis and Surveillance System (CASS).
7. Corrective actions based on comprehensive fixes as identified in Voluntary Disclosure Reporting Programs (VDRP).

NOTE: The CAMP portion of the manual should set forth its method for accomplishing the review and for identifying potential training needs.

V. Prior Training or Experience Recognition

Documentation of prior training will be collected by the manager of training during the new hire orientation. Documentation of such training will be entered into the individual's training record and the manager of training or designee will establish what further training is necessary to meet improved training requirements.

ABC Air may formally accept prior experience or training and give equivalent credit toward an ABC Air training course in accordance with the following procedures:

1. The employee must present copies of all prior experience or training supporting documentation as evidence of satisfactory completion to the training department for evaluation. Acceptable documents are copies of certificates or statements from a part 121- or 135-certificated operator, 14 CFR part [145](#) repair station, aircraft airframe or component manufacturer, or accredited college or technical school that are signed by a staff member of the organization.
2. In determining if equivalent credit may be given for an ABC Air course, the training department must take into consideration the time elapsed since the training was received, the training provider accreditation, and depth and scope of the training received.
3. If the training department approves the previous training or experience, documentation of such training will be entered into the individual's training record and the manager of training or designee will establish what further training is necessary to meet the training requirements.

VI. Contracted Training

Instruction provided by an outside agency may be provided by another certificate holder for related equipment, a manufacturer of equipment used by ABC Air, or an approved training vendor.

Training conducted by an outside agency must be performed in accordance with the training program. The manager of training or designee will investigate and evaluate the contractor's training program and facilities. The program must include sufficient material, training aids, and details to provide the trainee with adequate working knowledge. Any training conducted by an outside agency will be approved as an acceptable replacement to any training course in this manual. This approval will be given on a case-by-case basis by the director of maintenance, the director of quality control, or the vice president of maintenance.

All training and subjects taught by an outside agency will be documented by the providing agency and signed by an authorized individual of the agency. A copy of the training certificate or document will be sent to the maintenance training department and recorded in the individual's training record.

VII. Instructor Qualifications and Classification

In selecting maintenance training instructors, consideration will be given to the experience level of the individual and the individual's judgment, aptitude, knowledge, and performance within the maintenance group. Before an instructor is authorized to teach an in-house training course, the manager of training must interview that individual. During the interview, the prospective instructor's qualifications are reviewed, including training certificates, experience level on equipment, and communication skills, to ensure they have the technical background and teaching skills necessary to effectively communicate the course material.

ABC Air classifies instructors as follows:

1. **Maintenance Training Technical Instructors.** These are full-time maintenance training department employees who have met the qualifications for this position in accordance with company policies. When a new course is developed, an instructor may be authorized to teach that course by accomplishing the appropriate research and having the manager of training review the material before the first class is taught.
2. **Designated Company Instructors.** These instructors may be used to teach various in-house courses and are designated to perform instructor duties on an as-needed basis. They are designated by the manager of training and will be fully versed and knowledgeable in their specialty; however, these instructors must maintain the course training materials and must not alter them without approval from the maintenance manager. The manager of training authorizes the designated instructor by letter, which will be kept on file in the maintenance training department.
3. **Contracted Instructor.** These instructors are third-party training vendors who are contracted by ABC Air for the following situations:
 - a. To train ABC Air instructors as required.
 - b. To supplement the training program by developing and teaching courses.These instructors must follow ABC Air's established training procedures.
4. **On-the-Job Training (OJT) Instructor.** These are subject matter experts qualified by the nature of their past documented experience level, and can effectively teach specific skills and information to others on the job. OJT instructors include supervisors, lead

mechanics, or mechanics with previous experience. They also could include instructors from a manufacturer or other outside agency. To qualify for this position, the individual—

- a. Must have performed the task to the satisfaction of their supervisor.
- b. Must be able to transfer skills, knowledge, and techniques to students and determine their performance level.
- c. Must be able to assign a maintenance task and ensure that task was properly completed using acceptable reference material and maintenance procedures.

5. Practical Examiner. This classification is for employees authorized to administer practical exams, such as those for an engine run and taxi practical.

VIII. Training Courses

Each ABC Air training course contains a course description and syllabus that describes the content of the course, the objective of the course, type of training, length of course, and student grading standards, if applicable. The course description, syllabus, and hours for each course are on file in the training department. At the end of each course, each student will be provided an end-of-course evaluation. The manager of training will review this evaluation and results, or comments will be discussed with the instructors.

All training received must be documented on the appropriate form and forwarded to the training department for inclusion in the employee's training file.

ABC Air provides the following training:

Indoctrination Training

All ABC Air maintenance personnel must complete ABC Air maintenance indoctrination training. This type of training includes, but is not limited, to the following:

1. Company organization;
2. The General Maintenance Manual (GMM);
3. Professional responsibilities of technician and maintenance management;
4. Inspection systems and Required Inspection Items (RII);
5. Maintenance records and forms;
6. Safety;
7. Airworthiness release authority;
8. Minimum equipment list (MEL) policies and procedures;
9. Logbook procedures;
10. General familiarization of each aircraft type and use of manufacturer's technical data;
11. Familiarization with selected state and Federal rules;

12. Human factors overview;
13. Configuration Deviation List (CDL) policies and procedures; and
14. Company procedures on the use of parts, manufacturer parts identification and numbering, and the recognition of suspected unapproved parts.

Initial Training

This training consists of formal classroom instruction on ABC Air's airframes, engines, and avionics systems. The initial training will be conducted through classroom instruction by ABC Air, the aircraft manufacturer, or an appropriate training facility approved by the manager of training. Initial training includes the following types of training, determined by aircraft primarily worked on:

1. Line maintenance by each aircraft type.
2. Heavy maintenance by aircraft type primarily worked on (additional training when reassigned to different aircraft type).
3. Shop or special skills appropriate for an individual's assigned duties.

A nontechnical initial course may be given for each fleet type operated by ABC Air and is designed for nontechnical personnel within ABC Air. This course does not take the place of the above-listed training and is not designed for mechanics. No test will be given for nontechnical courses.

Recurrent Training

This training is provided to reinforce previous training and cover aircraft system upgrades and/or changes. Recurrent training will be conducted annually and includes changes in company policy or equipment and CASS recommendations. Courses are developed on various aircraft systems and subsystems. Recurrent training can be formal classroom, poster, video presentation, self-study, computer-based training (CBT), and OJT. Appropriate testing and grading of students will be accomplished, if applicable. The recurrent training process should capture the reasons why recurrent training was required. An effort should be made to identify and rectify unusual recurrence requirements.

Requalification Training

Requalification training will be conducted on an as-needed basis, specifically to restore a previously qualified employee to a qualified status. To be eligible for training in a requalification curriculum, the employee must have been previously qualified and have subsequently lost that qualification. Employees meet requalification training objectives by completing requalification curriculum segments. The reasons for, and the length of, the employee's unqualified status will determine the training and qualification curriculum segments needed for maintenance personnel requalification.

The requalification of an employee may be as simple as re-accomplishing the currency events in which the maintenance personnel is deficient. On the other hand, requalification may be as complex as the employee having to accomplish the events in the initial equipment category of

training when they have been unqualified for an extended period of time. The requalification training process should capture the reasons why requalification training was required. An effort should be made to identify and rectify unusual requalification requirements.

Engine Run and Taxi Training

ABC Air designed the engine run and taxi program to ensure maintenance personnel required to run-up or taxi the company aircraft are properly trained, qualified, and authorized. The maintenance training department authorizes the examiners and administers this program.

Engine run and taxi procedures will be taught hands-on and may be given by the following personnel:

1. Maintenance training technical instructors.
2. Maintenance personnel who hold current ABC Air engine run and taxi authorization for the type aircraft involved.
3. ABC Air flightcrew members type rated in the aircraft.
4. Trained personnel from the factory or other approved training facilities.
5. Contracted instructors authorized by the maintenance training technical instructor based on previous aircraft training and experience or successful completion of ABC Air's engine run and taxi authorization training.

Engine run and taxi training will be conducted only on aircraft that have no open maintenance discrepancies that may affect the safe ground operation of the aircraft. The manager of training will keep a current list of authorized instructors on file electronically.

Maintenance personnel are required to meet the following criteria to possess an engine run and taxi authorization:

1. Possession of a valid Airframe and Powerplant (A&P) certificate.
2. Employment with the company for at least 6 months.
3. Completion of the engine run and taxi familiarization class (first-time applicants only) before initial engine run and taxi authorization and a score of 85 percent or better on the engine run and taxi written examination. Training will include aircraft cockpit and checklist procedures, marshalling, towing and taxi procedures, airport operations familiarization, radio communication procedures, and runway incursion prevention.
4. Completion of a minimum of four hours of hands-on instruction in engine run and taxi training on an actual aircraft and/or simulator, including but not limited to limitations, normal and emergency procedures, and engine and aircraft operation.
5. Successfully passing an initial checkride or reauthorization by passing the 12-month recurrent checkride at the appropriate time for that specific aircraft.

ABC Air may give maintenance personnel authorization to perform engine run and taxi of the aircraft if they have held such authorizations at a previous company on the same specific

aircraft and have supplied ABC Air with the basic class training documentation from the previous experience. The manager of training will review and approve these authorizations.

The instructor providing the training sessions will record all training on the appropriate form. When the instructor feels confident that the student has mastered the engine run and taxi procedures, they will inform the supervisor, and set up an engine run and taxi checkride for the student. If the instructor understands that the student requires additional training, the instructor will annotate the additional training on the appropriate form.

After the student successfully completes the checkride, the training department will issue an engine run and taxi authorization, which will be good for one year. Individuals holding engine run and taxi authorizations will receive an annual proficiency check covering equipment operation, limitations, emergency procedures, and engine run and taxi radio communication procedures for each aircraft type. Proficiency checks must include operation of the aircraft type for recertification. Aircraft simulator time is recognized as aircraft operation. Maintenance personnel must renew their engine run and taxi authorizations within 2 months after the expiration date for each aircraft rating to be considered for recurrent renewal. Failure to meet this renewal requirement will require the authorization holder to meet initial minimum eligibility requirements as outlined in this section.

After a practical examiner gives an engine run and taxi checkride, they will complete the appropriate form and forward it to the maintenance training department, where it will be included in the employee's file. A copy of the engine run and taxi checkride form may be given to the student as proof of the qualification until they receive their authorization card.

Human Factors Training Program

Maintenance human factors training is part of a total system in managing human error designed to discourage procedural violations in maintenance. It is an essential part of this system aimed at individuals engaged in hands-on maintenance. Human factors training covers basic safety principles and practices already incorporated in ABC Air's safety management and quality system to ensure the work is carried out in a professional manner such that aircraft are released to service in a safe and airworthy condition.

The objective of ABC Air's human factors training is to provide human factors principles and techniques that will help the employee do a better job by—

1. Improving safety.
2. Decreasing organizational exposure to risk.
3. Capturing and reducing errors.

Instructors should understand the aspects of human factors by embedding it into all the training curricula. To accomplish this, instructors must—

1. Have credibility in their understanding of fundamental human factors principles and the maintenance work environment.

2. Have excellent communication and motivational skills and be able to effect attitude changes as well as impart knowledge.
3. Be aware that the instructor's attitude and behavior carry over to the students.
4. Always follow the procedures and have them in hand.
5. Discuss personal feelings and/or needs with the students. For example, let the students know if you are feeling tired, distracted, overwhelmed, etc., and ask them to watch out for your well-being. This will demonstrate how the instructor and student can help each other avoid errors.
6. Remind students of the dollars they are responsible for. For example, taxiing a \$130 million aircraft or replacing a \$200,000 part.
7. Point out personal injury potentials associated with your subject matter.
8. Point out the environmental hazards you will encounter during this training. For example, wet/slick taxiways/parking spots, poor visibility, cold/hot, power on/off, etc. Ask your students to identify "safety nets" for these conditions.
9. Use industry "lessons learned" relative to the subject matter; include associated costs and personnel injuries.
10. Debrief students after practical examinations and openly discuss mistakes and potential ramifications and how to avoid these traps on the job.
11. Advocate the training department's knowledge, experience, and lessons learned to other departments.

As part of the human factors training, instructors should consider a reference to the Dirty Dozen relative to situations.

The Dirty Dozen are as follows:

1. **Lack of Communication.** The exchange of information that conveys meaning between two or more people. Lack of communication often leads to misunderstandings and the results could be catastrophic.
2. **Complacency.** Self-satisfaction accomplished by a loss of awareness of the dangers. This often happens when doing familiar, repetitive work.
3. **Lack of Knowledge.** Insufficient experience or training in the task at hand. It is easy to see how lack of knowledge could lead to an error or an accident. Often lack of assertiveness plays a part because people do not like to admit they do not know something.
4. **Distraction.** One's attention is drawn away; mental or emotional confusion or disturbance occurs. When working among many people, when the work is constantly interrupted, or when coping with stress, it is easy to become distracted.
5. **Lack of Teamwork.** Failing to work together to achieve a common goal. Lack of teamwork creates an unhealthy environment in terms of personal dissatisfaction and group disconnect.

6. **Fatigue.** Weariness from labor or exertion, nervous exhaustion, temporary loss of power to respond. Shift work can have an enormous physical impact, but there are ways to combat fatigue. Examples include sleep and exercise regularly, avoid complex tasks at the bottom of the circadian rhythm, and ask others to check the work.
7. **Lack of Resources.** Failing to use or acquire the appropriate tools, equipment, information, or procedures for the task at hand. Lack of resources or misusing resources has been linked to many accidents or incidents.
8. **Pressure.** Pushing for something in spite of opposing odds or creating a sense of urgency or haste. This factor is most prevalent when deadlines approach or when trying to meet a schedule.
9. **Lack of Assertiveness.** Failing to behave in a self-confident manner. Lack of assertiveness has been identified as a link in the chain of events for many accidents.
10. **Stress.** Mental, emotional, or physical tension, strain, or distress. Stress is not good or bad; it is how it is handled that determines its impact on the individual.
11. **Lack of Awareness.** Failing to be alert or vigilant in observing. Lack of awareness of the situation or your surroundings often results in error or injury to yourself or others.
12. **Norms.** Unwritten and, often, unspoken rules about how work is done. Always work according to the instructions or, if they are good norms, have the instructions changed to become a part of the approved procedures.

One important aspect of the human factors training program is disclosure. It is ABC Air's policy to have maintenance personnel actively participate in the error investigation process and to reduce any anxieties maintenance personnel might have when participating in an error investigation. The purpose of the investigation is not to determine who made the error, but rather find out why the error occurred. Maintenance personnel should feel free to disclose any unintentional errors. Any good human factors program should include a company-wide, just culture without fear of punishment or retaliation.

Aircraft Fueling and Vendor Training

This training course provides information to fueling vendors to obtain authorization for fueling ABC Air aircraft to meet the requirements of ABC Air's fueling manual.

Unscheduled On-Call Maintenance Training

This training provides information to on-call maintenance technicians who may be called upon to perform maintenance functions on ABC Air aircraft.

Borescope Qualification Process

Borescope training is provided to individuals requesting level one or level two borescope qualifications. Training includes familiarization of various borescope equipment types, techniques, and return-to-service criteria.

IX. Instructional Methods

ABC Air uses various instructional methods as part of its training program. It is the responsibility of the training department to periodically revise and update, as necessary, the approved instructional methods. Currently, ABC Air has the following approved instructional methods:

1. **Classroom Training.** This method is usually conducted away from the production worksite in an academic classroom environment. It is appropriate for presenting new material, showing relationships between theory and practice, and teaching a skill. Only qualified maintenance instructors, contracted instructors, or designated maintenance instructors may teach classroom courses.
2. **Practical Training.** This method helps students gain confidence. It is prescheduled hands-on training conducted by a qualified instructor where students learn by doing, using training aids, mockups, or serviceable equipment. It is part of a planned course and does not result in actual servicing or repair.
3. **On-the-Job Training (OJT).** This method helps employees gain competence and may or may not use structured learning. It is task-specific training conducted at the worksite by an OJT instructor that involves actual work performance. Technical documents used at the worksite must be used as a performance standard reference. See OJT program.
4. **Computer-Based Training (CBT).** This method is used to provide technical information to all maintenance department personnel. The content is of an advisory nature only and cannot be used as a reference for documenting maintenance action. Examples of CBT use include the following:
 - a. Notices regarding aircraft fleet differences.
 - b. Amplifying and clarifying existing instructions found in maintenance manuals.
 - c. Tips and hints on accomplishing specific maintenance tasks.
 - d. Clarification of methods, techniques, and practices unique to the company.

X. Training Devices

To further enhance training, the training department must provide the appropriate training devices as part of the curriculum and courses it develops. These devices may include unserviceable parts. The training department will maintain an inventory of all aircraft parts used for training purposes. The manager of training is responsible for the acquisition and accountability of all training devices.

XI. On-the-Job Training (OJT) Program

The training department will manage the OJT program to augment classroom training and provide documentation for experience or tasks that are best taught through actual work performance. OJT must be conducted by a qualified OJT instructor. Once the training is accomplished, that training will be documented with the appropriate OJT form. The completed form will be sent to the training department for insertion into the individual's training file. Line

stations with only one employee will use OJT task sheets to document work experiences on nonflight critical tasks. These noncritical tasks are annotated on the individual OJT task sheet.

OJT may include, but is not limited to, tasks such as aircraft servicing, component replacements, troubleshooting skills, maintenance techniques and procedures, use of test equipment, component repair, or engine ground-runs and taxi. OJT is conducted in the work environment. OJT will be recognized for those individuals who have satisfactorily accomplished specific tasks, procedures, or techniques. The instructor conducting the training will fill out the appropriate OJT form that will contain a handwritten or computer-generated record describing the training and the source data used, as applicable. The training curriculum for each OJT segment is subject to approval by the manager of training.

OJT may be conducted by any of the following people:

1. OJT instructor.
2. Designated OJT instructor.
3. Managers, supervisors, leads, or aircraft mechanics who have previously demonstrated satisfactory completion of those specific tasks being instructed.

The training department will coordinate managers and supervisors to maintain and conduct required training as operational needs arise. The training department also will coordinate with managers and supervisors to establish training schedules for OJT. The schedule is established with a goal for maximizing training of the technical workforce while minimizing the impact on production. The manager of training may approve vendors, factory representatives, and other recognized vendor training program personnel as designated OJT instructors. The manager of training and the OJT instructors will coordinate meetings to recommend suggestions for improvement and report on the OJT program status.

XII. Training Records

The purpose of the training records system is to keep accurate records of training history and certification data for maintenance personnel. Individual training records can be generated from the training database for any ABC Air employee or nonemployee who has completed ABC Air's maintenance training lessons or holds an ABC Air maintenance qualification. Training records for outside labor personnel are recorded in the training database using the individual's name, company name, and station location.

Every employee's training records will be duplicated as a hardcopy file in the event a certificate is lost/stolen or the computer system fails. Training files for personnel who have transferred out of the maintenance department or who have terminated their employment or contract with ABC Air will be placed in a terminated/resigned file for a period of five years and archived in the computer system, and will no longer be maintained as an active record. These files will be retained in accordance with Federal law and regulations.

Each training database file must contain the following information:

1. Name, employee number, and certification number.
2. Job title, station location, and date of hire.
3. Records of training completed, including course title, description, instructor, grade, and completion date.
4. Qualification and certification records with issue and renewal dates.
5. Hours of training received.
6. Certification of all events by supervisor, instructor, or company, as appropriate.
7. Duration of initial and recurring training events.

Records of training from other approved training providers and/or vendors are acceptable documents and will be used in the approval process for entering training records into the training database. Training from other approved providers that are credited to the individual's training must be included in the records for that individual. Photocopies, facsimiles, electronically generated, emailed, hard copies, and faxed copies of training documents and forms are acceptable for use in the approval process for entering records into the training database.

All personnel authorized for aircraft maintenance records access and data entry must be given OJT for the recordkeeping system. This OJT must consist of familiarization with the system and the requirements of the maintenance personnel training program. These individuals will have a training file established to ensure all OJT training is on file.

Access to individual training records is restricted to the manager of training, vice president of maintenance, director of maintenance, director of quality control, designated data entry clerks, and FAA personnel with the proper identification. All requests for training records and all approvals or authorizations required for certification and ratings must be received in writing (email or paper copy) by the authorized department manager or their designee before making any updates to the training database. Training records will be entered into the training database only with verification that all applicable training and prerequisites have been met, and the authorized individual has provided direct approval in writing (paper or email).

For verification purposes, each mechanic employed by ABC Air will have a copy of their A&P certificate on file with the training records department. Outside labor mechanics must have their certificates verified for authenticity and records kept by their respective employer. ABC Air employees must immediately notify the training records department of certificate status changes by submitting a copy of the new certificate. For example, when the mechanic receives a new A&P number, when the temporary certificate becomes permanent, or when the certificate has been suspended or revoked.

XIII. Measuring Training Effectiveness

ABC Air has three measures to validate that maintenance employees are capable of performing the assigned tasks and that the training program has been effective:

1. **Written Tests.** ABC Air will administer written tests immediately after completion of a training course. All written test scores will be recorded as a percentage of 100. A minimum of 80 percent is required to pass, and all tests will be administered and proctored by the manager of training or their designee. The completed test will remain on file in the training department for 12 months after the testing event.
2. **Practical Tests.** ABC Air will require a demonstration of capability by employees during the performance of the task. Practical tests will be recorded as a pass or fail grade mark.
3. **Course Evaluations.** ABC Air will periodically evaluate its training courses to determine if the employee has met the training objectives and to see if the instructors appropriately transferred to the students the essential knowledge, skills, and abilities.

All instructors will report failing scores to the manager of training. Appropriate competency-based training, including testing, will be scheduled by the manager of training for individuals who do not receive a passing grade. If upon retraining, an individual does not perform to standards, the matter is referred to the appropriate department director for action.

XIV. Training Program Reevaluation

The manager of training or their designee will reevaluate ABC Air's training program and records at least annually for the need of revision based on performance of the program, CASS findings, training needs assessments, and aircraft or equipment changes.

The training program reevaluation process consists of conducting three levels of evaluation, reviewing student feedback, and taking action as required. These activities include—

1. Conducting student feedback evaluations.
2. Conducting post-test evaluations.
3. Conducting behavioral evaluations.

The manager of training will develop and oversee the evaluation process, including reviewing student feedback and any resulting corrective action. For each course, before the completion of training, students will complete a student feedback evaluation, and instructors will administer post-test and/or practical exercises covering material covered in the course.

Behavioral evaluations are conducted 60 to 90 days after training has been completed using a job performance survey/questionnaire. The survey/questionnaire will be customized to meet the needs of the training department. This activity will be conducted on an as-needed basis.

Instructors, supervisors, and the manager of training will review feedback from evaluations to determine if corrective action is required. This could include modification to curriculum, establishing course prerequisites, and/or evaluating instructor competence.

NOTE: The CAMP portion of the manual should set forth its method of documenting the annual review and for ensuring any changes to the training program are accomplished.

Advisory Circular Feedback Form

If you find an error in this AC, have recommendations for improving it, or have suggestions for new items/subjects to be added, you may let us know by contacting the Flight Standards Directives Management Officer at 9-AWA-AFB-120-Directives@faa.gov.

Subject: AC 120-124, Continuous Airworthiness Maintenance Program (CAMP) Training Program

Date: _____

Please check all appropriate line items:

An error (procedural or typographical) has been noted in paragraph _____ on page _____.

Recommend paragraph _____ on page _____ be changed as follows:

In a future change to this AC, please cover the following subject:
(Briefly describe what you want added.)

Other comments:

I would like to discuss the above. Please contact me.

Submitted by: _____

Date: _____