



**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

National Policy

**ORDER  
JO 3000.22B**

Effective Date:  
05/01/2020

**SUBJ:** Air Traffic Organization Technical Training Management

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This order defines the requirements for the development and management of Air Traffic Organization (ATO) technical training, from identification of the training need through development, maintenance, and management of the training curricula. All Federal Aviation Administration organizations, external government agencies, and public/private sector organizations supporting ATO technical training are required to be familiar with and comply with this order. Personnel and facilities must comply with this order within 90 days of the effective date.

A handwritten signature in black ink that reads "Glen A. Martin".

Glen A. Martin  
Vice President of Safety and Technical Training  
Air Traffic Organization

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## Chapter 1. General Information and Requirements

**1. Purpose of This Order.** This order defines the requirements for the development and management of Air Traffic Organization (ATO) technical training, from identification of the training need through delivery, evaluation, maintenance, and revision of the training curricula.

**2. Audience.** This order applies to all personnel involved in aspects of the AJI-2 technical training management and development process, from initial requirements definition, to development and maintenance, quota management and delivery, and evaluation.

**3. Where Can I Find This Order?** This order is available on the FAA Directives website at [https://employees.faa.gov/tools\\_resources/orders\\_notices/](https://employees.faa.gov/tools_resources/orders_notices/) or [https://www.faa.gov/regulations\\_policies/orders\\_notices/](https://www.faa.gov/regulations_policies/orders_notices/).

**4. Cancellation.** This order cancels FAA Order JO 3000.22A, dated September 15, 2014.

**5. Explanation of Changes.** This revision of FAA Order JO 3000.22A addresses these changes:

**a.** Sets this revision as overarching ATO technical training directive for FAA Orders JO 3000.57 and JO 3120.4.

**b.** Changes the title of FAA Order JO 3000.22 from “Outcomes-Based Training” to “Technical Training Management.”

**c.** Clarifies roles of the Technical Training Directorate (AJI-2), including approval authority of waivers to technical training orders and management of training equivalency program.

**d.** Removes training development processes that are covered in the Technical Training (AJI-2) Training Development Process Overview.

**e.** Reorganizes content in Chapters 3 through 5 to consolidate general policy, training development policy, and technical training management policy into corresponding chapters.

**f.** Clarifies the purpose and attendees of Operational Try-Out (OTO) and First Course Conduct (FCC). Specifically, students do not attend OTOs.

**g.** Establishes that proctoring is not allowed with distance learning (e.g., correspondence courses, eLearning or web-based training (WBT)).

**h.** Clarifies that seventy percent (70%) is the passing score for all graded/scored knowledge, performance, and skill assessments.

**i.** Adds requirement that local and service center/area training conduct OTOs and FCCs.

**6. Distribution.** This order shall be distributed to the following offices through the internet via the FAA Directives website listed in Chapter 1, Paragraph 3 above: AJW – Technical Operations, AJR – System Operations Services, AJT – Air Traffic Services, AJF – Flight Program Operations, AJV – Mission Support Services, AJM – Project Management Organization, AJG – Management Services, AFN – Finance and Management, AOV – Air Traffic Safety Oversight, and AMA-1 – FAA Academy.

**7. Background.** FAA Order JO 3000.22A introduced the outcomes-based training concept by shifting focus from what is being taught to what is being learned. This revision applies to all ATO technical training and aligns three major ATO technical training orders to minimize

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redundancy and conflicting policy guidance. Various ATO technical job specialties have training orders/guidance material that specifies training requirements to achieve specific job certification. National technical training for each specialty must comply with that specialty's training order and any relevant collective bargaining agreements. This order serves as an overarching technical training order, containing essential policy elements for making technical training decisions, while allowing other directives/SOPs to provide related processes, guidelines, and tools to meet/implement technical training policy and requirements.

**8. Delegation of Authority.** The ATO Chief Operating Officer has delegated the responsibility for administering the national technical training program for the ATO operational workforces to the Vice President of Safety & Technical Training (AJI-0).

**9. Authority to Change This Order.** Requests for changes, modifications, and waivers to this order must be submitted in writing to the Director of Technical Training (AJI-2) (or designee). (See Chapter 3, Paragraph 2)

**10. Related Publications.** Appendix B contains internal FAA orders and publications related to this order, and Appendix C contains external orders and publications related to this order.

**11. Definitions.** Appendix A contains definitions used in this order.

**12. Public Law (Public Law 112-55).** All technical training must meet the requirements of Public Law 112-55.

## Chapter 2. Roles and Responsibilities

### 1. Vice President of Safety & Technical Training (AJI-0).

a. Ensure technical training compliance with equal employment opportunity laws, regulations, and agency guidance when developing, offering, and providing training and development activities.

b. Provide the ATO operational workforce with the technical skills training and development necessary to achieve agency and ATO mission requirements and strategic objectives.

### 2. Technical Training Directorate (AJI-2).

a. Establish policy for all ATO national technical training for the ATO operational workforce.

b. Oversee all ATO national technical training for the ATO operational workforce in order to meet critical operational training needs.

c. Establish the strategic direction and policies for the training program that meet applicable laws and regulations, letters of authorization and agreement, and requirements from the FAA Human Resource Policy Manual (HRPM).

d. Coordinate the development of training needed across the ATO, including training mandated from outside of the ATO.

e. Validate training requests.

f. Approve or deny any waivers to requirements in ATO technical training orders.

g. Establish national training standards, and validate and evaluate training for effectiveness against those standards.

h. Oversee curriculum management and technical training catalog.

i. Oversee a single, official source of training content, as well as user access to training materials.

j. Manage the equivalency program for technical training by serving as the intake office for requests to equivalencies to technical training and maintaining records of requests and the disposition of said requests.

k. Oversee the process for establishing training prerequisites.

l. Provide guidance and oversight for funding, maintenance, and lifecycle management of technical training (e.g., the transition to operations maintenance process).

m. Manage and oversee the Collegiate Training Initiative.

n. Manage the call for training and the quota.

o. Manage the Technical Training (AJI-2) Training Development Process Overview.

p. Maintain currency of training materials.

q. Coordinate maintenance of the official job task analysis for the technical training workforce.

- r. Identify a need for training.
- s. Define training requirements.
- t. Manage training acquisition and development.
- u. Provide training analysis, development, maintenance, and other training-related support.
- v. Manage major course revision and provide oversight for minor course revisions.

### **3. Sponsoring Organization.**

- a. Notify AJI-2 of changes that could impact training.
- b. Provide for training acquisition and development in accordance with FAA's Acquisition Management System.

### **4. FAA Academy.**

- a. Deliver initial and specialized national technical training as requested by AJI-2.
- b. Support development and maintenance of training and training systems as requested by AJI-2.

### **5. Service Center Training Managers.**

- a. Submit requests for changes, modifications, and/or waivers to this order in writing to the Director of Technical Training (AJI-2) (or designee) through [9-AJO-AJI-TTS@faa.gov](mailto:9-AJO-AJI-TTS@faa.gov). (See Chapter 3, Paragraph 2)

### **6. ATO Service Units.**

- a. Submit requests for changes, modifications, and/or waivers to this order in writing to the Director of Technical Training (AJI-2) (or designee) through [9-AJO-AJI-TTS@faa.gov](mailto:9-AJO-AJI-TTS@faa.gov). (See Chapter 3, Paragraph 2)
- b. Provide subject matter experts (SMEs) who are operationally current on the training subject to support technical training development and revision efforts.

**7. Subject Matter Expert.** A representative of the specialty workforce (Air Traffic or Technical Operations) for whom training will be developed who ensures the technical accuracy of the training.

- a. Provide expert input regarding the completeness and accuracy of the technical content of training materials.
- b. Provide specific information from technical documents and interpretations of policy.
- c. Provide a technical evaluation of the content of a final training product.
- d. Review, provide comments, and report on the technical accuracy and completeness of training deliverables.

### **8. Local Facilities and Service Centers/Areas.**

- a. Design, develop, and deliver local technical training.
- b. Request assistance, as needed, with training development.
- c. Comply with FAA Order 1370.120, if delivering training electronically.

## Chapter 3. Training Policy

**1. Training Policy Requirements.** All national training products must meet the following requirements:

**a. Job Tasks.** Job tasks identify work performed in a specific position. Validated job tasks must form the basis of training. When job tasks do not exist for needed training (for example, due to new equipment or a new job function), the development workgroup will identify relevant knowledge and skill areas and recommend new job tasks in the Analysis Report. Job tasks are recommended for informational briefings but not required.

**b. Technical Training Standards.** All content must be developed and managed in accordance with AJI technical training policies and standards (See FAA Resources and References and AJI Standards and Guidance). Any deviation from the policies or standards must be coordinated by waiver with the Director of Technical Training (AJI-2) (or designee). (See Chapter 3, Paragraph 2)

**c. Passing Score.** 70% is the passing score for all graded/scored knowledge, performance, and skill assessments.

**d. Proctoring.** Proctoring must not be used with distance learning (e.g., correspondence courses, eLearning or WBT, and associated assessments), unless coordinated by waiver with the Director of Technical Training (AJI-2) (or designee). (See Chapter 3, Paragraph 2)

**e. Copyright.** No copyrighted material (e.g., training content, images or graphics, photographs, videos, audio clips, articles, or websites) may be used without written permission from the author or owner.

**f. Contracts.** All training-related material developed for the FAA is the sole property of the FAA and will not be used by the contractor for any purpose other than that specified in the contract.

**g. Accessibility.** All content must be compliant with FAA Order 1370.120, *Section 508 Accessibility Policy*.

**h. Training Credit.** Learners participating in the first course conduct of a course or workshop will get credit for it in their training record only if that iteration of the training successfully meets validation criteria.

**i. Out of Agency Training (OAT).** OAT is the first option to be considered for all commercially available equipment, systems, or Commercial Off-the-Shelf (COTS) products/services.

(1) AJI-2 validates OAT and COTS training to determine it meets the goals and needs of the training requirement.

(2) Other deliverables depend on the scope of the provider's involvement in the training development and delivery process but can include deliverables from Training Development.

**j. Service Center/Area or Local Training.** Service center/area or locally-delivered training must meet the requirements of Chapter 3, Paragraph 1(c) and Chapter 6 of this order.

**2. Changes, Modifications, and Waivers.** Requests for changes, modifications, and waivers to this order must be submitted in writing to the Director of Technical Training (AJI-2) (or



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designee) through the applicable District Office and Service Center training managers. If the request is coming from a non-field facility, it should be routed through the applicable Headquarters Service Unit. Waiver renewal requests must be submitted at least 60 days prior to the expiration date. Unless otherwise specified, waivers are valid for two years.

**Note:** Requests for changes, modifications, and waivers may be submitted electronically with electronic signatures to [9-AJO-AJI-TTS@faa.gov](mailto:9-AJO-AJI-TTS@faa.gov).

Requests for changes or modifications to this order must contain the following information:

- Paragraph to be changed/modified
- Suggested change/modification
- Reason for suggested change/modification

Requests for waivers to requirements in this order must contain the following information:

- Requested requirement to be waived
- Justification for the requested waiver

**3. Interpretations to this Order.** All requests for interpretations to this order must be forwarded to [9-AJO-AJI-TTS@faa.gov](mailto:9-AJO-AJI-TTS@faa.gov) through the Service Center training managers and/or Headquarters of any Service Unit.

## Chapter 4. Training Development

### 1. General.

**a. Outcomes-Based Training** is designed based on the job tasks and associated knowledge and skills the learners are expected to perform on the job after they complete the training (as opposed to what can be performed only in a classroom). An *outcome* is a clear, observable demonstration of learning that reflects any or all of the following:

- (1) What the learner knows.
- (2) What the learner can actually do with that knowledge.
- (3) How well the learner can demonstrate skills (proficiency).

**b. Overview of Instructional Systems Design (ISD) Process.** ISD is the science and psychology of sound instruction that uses a systematic, iterative, and, when necessary, flexible approach to plan, analyze, design, develop, implement, and evaluate training in an effective and efficient manner. The ISD process is followed in the development of ATO technical training.

**c. AJI-2 Instructional Design Guidance, Templates, and Tools.** All technical training content must be developed and managed in accordance with AJI technical training policies and standards. All templates and guides referred to in Chapter 4 are listed in AJI Standards and Guidance.

**d. Types of Training Events.** AJI-2 oversees development of three types of training events: courses, workshops, and informational briefings. Types of ATO Technical Training Events describes the design elements required for each type of learning event.

**2. Training Development and Revision Requests.** Requests to develop new training or revise existing training are submitted through the AJI-2 Request Center on the AJI-2 KSN site found here: <https://ksn2.faa.gov/stt/TTPPM/SitePages/Home.aspx#>. Details on the process and associated responsibilities are found in the AJI-2 Standard Operating Procedure referenced in Appendix B.

**3. Need Identification and Planning.** All development requests must go through a process of gathering and defining requirements. AJI-2 will determine if the training request and requirement is valid based on the information provided during this process. The requirements process must include:

**a.** A training needs assessment that identifies training as both necessary and appropriate to accomplish official duties.

**b.** A preliminary analysis of validated job task data as it relates to the proposed training, the impact of the proposed training to existing training, and any applicable research and recommendations that may be applied to the proposed training.

**c.** A requirements document that includes information about the training need, scope, outcomes, audience, funding, and priority; a complete list of all source materials and resources; and a recommended instructional approach.

**d.** Estimates on the cost and staffing need based on the requirements and proposed training solution(s) contained in the requirements document.

**4. Analysis.** Analysis must consider existing data and research, including any preliminary analysis conducted. Multiple analyses may be conducted at the start of a training effort. The AJI Analysis Guide provides guidance on how to meet the requirements for Analysis. The following types are included in a single Analysis Report:

**a. Audience Analysis.** Identify how audience characteristics such as job position, experience, and education affect the training approach.

**b. Task and Skills Analysis.** Identify applicable job tasks from the validated job task data, develop additional subtasks or steps, connect related knowledge and skills, and recommend delivery methods. This analysis helps AJI focus funded training on providing knowledge, skills, and abilities connected to job tasks.

**c. Media Analysis.** Justify the delivery method and technology platform identified in the requirements document. The major types of delivery methods are:

(1) Resident training, usually combining classroom instruction and laboratory work.

(2) Distance learning via correspondence courses, computer-based instruction, eLearning or WBT (e.g., eLMS, Blackboard) or the Aviation Training Network (ATN).

(3) On-the-Job Training (OJT) to gain mastery over skills introduced in resident and distance learning.

**d. Content Gap Analysis.** Identify whether proposed new or revised training can reuse, replace, link to (such as a prerequisite), or otherwise affect existing training.

**e.** The Analysis Report is required for all training development projects that are courses, and recommended for those that are workshops and briefings. The Analysis Report template is required for this deliverable. It contains sections for all required analyses, as well as flexibility for other optional analyses. Refer to AJI Standards and Guidance for the location of the AJI Analysis Guide and the template.

**5. Design.** Course design uses the results of the Analysis Report to build a structure for the course. The AJI Design Guide provides guidance on how to meet the requirements for the Design phase. The following elements are required in a Course Design Guide (CDG):

**a.** Objectives and outcomes derived from job tasks contained in the Analysis Report.

**b.** Alignment of prerequisites with job tasks and/or knowledge and skills.

**c.** Assessment methods that measure how the objectives and outcomes are met (Assessment Strategy). The assessment strategy must include:

(1) A list of all assessments used in the training.

(2) Assessment types.

(3) Grading methods.

(4) How assessments are weighted (if weighted).

(5) Retake and remediation options (when retake or remediation are available).

**d.** Instructional strategies that give learners the information, resources, and practice they need to accomplish the objectives and outcomes.

e. Adult Learning principles.

f. A course design guide (CDG) is required for all workshops and courses (briefings are optional). The CDG Template is required. It contains sections for all required elements of design, as well as flexibility for optional additional design considerations. Refer to AJI Standards and Guidance for the location of the AJI Design Guide and template.

**6. Written and Performance Assessments.** Written and performance assessments are instruments that evaluate the learners' mastery of the learning objectives, and, therefore, how well they meet the job requirements. The AJI Testing Guide provides guidance on how to meet the requirements for developing assessments and assessment items. Decisions to make the 70% passing score based on cumulative scoring with weighted criteria, or apply to each section or module separately before a learner can move on or if there is just an End of Course test at 70% are made by during the design phase of the project by the development team. Assessments must meet the following requirements:

a. All objectives must be assessed.

b. Assessment items must be valid: measure objectives to the extent required for performing the job.

c. Performance assessments must be conducted with only the tools and resources available on the job.

d. Assessments must be reliable: consistently achieving similar results over time and across other variables, such as instructors.

e. Assessments must demonstrate integrity: being considered secure and having measures that prevent cheating and memorization of test questions and answers.

f. Assessments must be controlled and not stored on an unsecure site.

g. Assessments must reflect the assessment strategy documented in the CDG.

h. The design of assessments must reflect the safety criticality of the training and impact on the learner of failing the training (high-stakes decisions, such as certification, promotion, or other job-related impact).

i. Any by-pass or test-out opportunities must use the same question bank or equivalent as assessments delivered in the training. By-pass/test-out assessments shall not require a higher passing standard than assessments used in training. By-pass/test-out opportunities for performance training are not permitted unless specifically authorized by the Director of Technical Training (AJI-2) or designee.

j. All assessments will have a test blueprint, a document linking assessment items with their corresponding objectives. The approved AJI-2 test blueprint templates (written and/or performance) must be used to develop the test blueprints. Refer to AJI Standards and Guidance for the location of the AJI Testing Guide and templates.

k. Proctoring is the practice of monitoring learners during an assessment to prevent them from using unauthorized outside sources. Proctoring may be used in several parts of training, such as instructor-led training (ILT), labs, qualifications, and by-pass exams. Proctoring must not be used with distance learning (e.g., correspondence courses, eLearning or WBT, and associated

assessments), unless coordinated by waiver with the Director of Technical Training (AJI-2) (or designee). (See Chapter 3, Paragraph 2)

**7. Developing Training Content.** Training content is developed based on the topic outline contained in the CDG. The completed instructional and technical content and activities will prepare the learners to achieve the required job performance and stated objectives. The materials created must reflect the design from the CDG and test blueprints. The AJI Development Guide provides guidance on the use of the AJI training material templates.

**a. Operational Try-Out.** The purpose of an Operational Try-Out (OTO) is to locate and eliminate potential problems in the instruction, and familiarize instructors with delivering national training material. An OTO often identifies issues with the course that could impact course validity, and, therefore, prevent students from gaining credit for the training. OTOs must follow these requirements:

(1) Participants in OTOs may include workgroup members, as well as additional SMEs outside of the workgroup, such as personnel who are currently certified on (or practice the subject of) the training.

(2) Students from the target audience shall not be participants in an OTO.

(3) OTOs are not required for self-paced eLearning or WBT.

**b. Deliverables** must include all instructional materials appropriate for the delivery method, which may include but are not limited to:

(1) Lesson plans.

(2) Instructor materials.

(3) Learners' guide, which may include case studies, exercises, handouts, labs, etc.

(4) eLearning or WBT storyboards, videos, graphics, and simulations.

(5) Written assessments.

(6) Performance assessments, such as problems or scenarios.

(7) Source files and code, programmed training, and packaging based on delivery platform being used.

**8. Validation.** The AJI Validation Guide provides guidance on how to meet the requirements for validation.

**a. First Course Conduct.** The purpose of a First Course Conduct (FCC) is to finish validating that the training meets the intended learning outcomes for national training. In order for an FCC to be considered for validation of the training program, the following requirements must be met:

(1) Learners must be representative of the target audience. For example, delivering an introductory or concepts course to an experienced audience would not meet the requirement.

(2) There must be enough learners in the instructor-led training delivery (75% of the intended class size) for substantive feedback and assessment data. For example, an initial delivery with nine learners for a course intended for a class of 20 would not meet the requirement. For eLearning, at least 10 participants are needed for substantive feedback.

(3) The material must be delivered as specified without alteration.

(4) All possible assessment items in a course must be delivered to all learners in order to determine test item validity and reliability.

(5) Instructors must be qualified (e.g. have the necessary knowledge and skills) to deliver the training prior to the initial delivery. For example, delivery intended to provide instructors an opportunity to practice in front of learners from the target audience would not meet the requirement. “Qualified” includes experience in using any and all technology used in delivery of the training (e.g., Blackboard, Adobe Connect, iPads).

(6) Course content and materials must be complete before first delivery to the target audience. For example, delivery intended to identify issues with the content or missing materials would not meet the requirement.

**b. Other Validation Requirements.** All technical training courses intended for national delivery must be validated before widespread delivery. The validation of training is dependent on successfully meeting the validation criteria. It also provides the opportunity to determine the potential of the training to meet interim or long-term program needs. OJT and performance examinations that are attached to national training must be validated as well. Validation is optional for workshops but recommended based on the risk and nature of the content. For training to be considered valid at the time of the FCC, it must meet the following criteria:

(1) The training is instructionally sound.

(a) All deliverables are completed according to the requirements in this order.

(b) Training outcomes and objectives are clear and align with performance-based job tasks.

(c) Written and/or performance assessments measure each objective and demonstrate how well learners meet the performance-based job requirements.

(d) Instructional strategies are founded in adult learning principles and provide the information, resources, and practice needed for learners to demonstrate their capabilities in meeting the objectives.

(2) The training is technically accurate.

(a) Policies and procedures referenced in the training are accurate.

(b) References and resources are current and properly cited in materials.

(c) Job tools are used properly.

(3) The training is job appropriate.

(a) Content addresses the critical points of the job as related to the job tasks.

(b) Activities, written and/or performance assessments, and labs/simulations reflect the actual job performance requirements.

(4) The trainees are assessed using instruments that are valid, reliable, and secure.

(a) Written and/or performance assessment items clearly link to job requirements through job tasks.

(b) There are multiple versions, alternate assessment items, and/or randomization, as needed.

(c) Accompanying tools and instructions are sufficient to promote reliability and consistency in testing.

**c.** The Validation Report is required for all courses; it documents the results and recommendation(s) from both the training development workgroup and the validators. Validation is recommended for workshops, not required; however, if a workshop is to be validated, a Validation Report is required. The Validation Report template is required for this deliverable.

**d.** If validation requirements are not met, a Second Course Conduct (SCC) must be completed (following any recommended changes being accomplished from the report) and a second report issued with the new recommendation for validation. "Required changes" identified in the report must be completed for validation to occur. All other changes will be tracked as deferred and addressed in future maintenance cycle. An SCC must meet the same requirements as an FCC as listed above in Paragraph 7.

**8. Evaluation.** The AJI Evaluation Guide provides guidance on how to meet the requirements for evaluation. Evaluation refers to two separate activities:

**a.** Summative Evaluation. All training must be evaluated using written end of course and post-course surveys to assess, at a minimum, participant reaction, vendor and instructor performance, learning outcomes, and the effectiveness of participatory learning techniques.

**b.** Comprehensive Evaluation. Detailed appraisal of a particular course or workshop to determine its effectiveness. Comprehensive evaluation has the following requirements:

(1) Evaluations must use the same requirements as the current validation criteria; however, the intent of evaluation is not to invalidate existing training and pull it from delivery unless it is a threat to safety in the National Airspace System or there are other egregious problems.

(2) Periodic evaluations must be conducted to determine how well a training item contributes to mission accomplishment and meets organizational performance objectives and goals. Evaluators must provide recommendations for improvement.

**c.** An Evaluation Report is required for all training activities that undergo a comprehensive evaluation. The Evaluation Report template is required for this deliverable and contains sections for validation factors, as well as flexibility for optional additional design considerations.

## Chapter 5. Training Curriculum Management

**1. Overview.** Responsibility for training continues well after it is validated and delivered as a regular part of the curriculum. Training must be periodically reviewed to make sure it continues to be effective, as required by HRPV Vol. 5.3. Decisions about resources for managing content and the currency of legacy content must be based on sound evaluation. Any identified issues are resolved through maintenance or revision.

**2. Maintenance and Revision.** Maintenance and Revision are activities involved in keeping training materials up to date. The difference between the two activities has to do with the scope of work involved; maintenance does not fundamentally alter the training, but revision does.

**a.** Maintenance of training materials is a minor, small-scale activity that does not fundamentally change the design or substantive elements of the training. Maintenance activities include:

- (1) Refining materials for spelling, grammar, references, etc.
- (2) Updating technical content due to a minor equipment change or changes to orders or references, when these changes do not affect the objectives or certification parameters, require adding or deleting any objectives, or change the length.
- (3) Routine updates of automated information (e.g., runway configurations, flight paths, system updates) used in training throughout the training curriculum.
- (4) Administrative content.
- (5) Modifying/updating design elements as appropriate to improve educational quality (e.g., updating animations within PPTs; updating media used for exercises/activities). Functional testing may be required depending on scope of changes.

**b.** Revision of training materials is broader in the scale of work and is typically an activity that results in major changes to the design of the training or the substantive elements of the training. Revision activities include:

- (1) Modifying, adding, or deleting training outcomes, as well as significant changes to job tasks and instructional objectives.
- (2) Necessary design changes (e.g., more or fewer exercises, simulations).
- (3) Significant changes to training delivery method (e.g., from ILT to entirely self-paced distance learning).
- (4) Major changes or replacement of equipment (e.g., new equipment or major equipment modifications).
- (5) Changes to the assessments or pass/fail standard that affect alignment with objectives.
- (6) Changes in length by 10% of the training delivery time.
- (7) A full re-design of the existing course.

**c.** Both maintenance and revision activities must take into consideration the impact on related training items in the catalog, such as prerequisites.



**d.** When training that is under revision is missing required course structure, formatting, or documentation (such as an analysis report or CDG), the workgroup will determine whether to produce that documentation in accordance with the SOP.

**e.** The organization responsible for maintenance (AJI or a sponsoring organization) depends on the contract terms for the project. Any organization with the authority to maintain or revise training materials must notify AJI-2 of these activities and provide the updated materials to AJI-2.

**f.** Revision activities must meet the requirements of this order in Training Development. AJI-2 and all stakeholders must jointly determine the scope of the changes to training material and which portions need re-validation.

**g.** Revised training requires a new training item identification number (sometimes referred to as a course number) if its learning outcomes change so much that learners who completed earlier versions would not meet the revised outcomes.

**h.** In addition to the revised or maintained material (including the creation of any missing, required deliverables), the following must also be provided:

(1) A record of the changes made to the materials.

(2) A new version number to the materials in accordance with the catalog/maintenance process.

**3. Training Administration.** Training administration includes all efforts to label, organize, store, and group training. In accordance with HRP Vol. 5.3.6, administration allows ATO to record, track, and report on training offerings and individual user progress.

**a. Requirements**

(1) Data generated in the course of training, such as individual learner scores and survey and feedback responses, must be stored in the system profile in accordance with FAA policy on security and records keeping. (See FAA Order 1350.14, Records Management)

(2) AJI-2 will assign and/or approve, as required for each training item (course, workshop, or briefing), a standardized training item identification number that follows a consistent numbering system. This training item ID must appear in each system FAA uses to track the training.

(3) Each version of the training must be assigned a new version number, following a consistent numbering system.

(4) Training information must not be deleted and must remain in the FAA's official system of record for training even if the training item is cancelled.

**b. Other Applicable Policies:**

- OPM Guide to Personnel Recordkeeping
- OPM Guide to Human Resources Reporting
- General Records Schedule 2.6: Employee Training Records
- FAA Order 1350.14, *Records Management*

## Chapter 6. Local and Service Center/Area Training

**1. Local and Regional Facilities.** Local and Service Center/Area facilities should design, develop, and deliver outcomes-based training using a systematic approach to training design and development. It is strongly recommended that local and Service Center/Area training include the same phases and requirements as national training to help produce high-quality training in the field.

**2. Technical Training.** AJI will make its national curriculum available to field facilities for reuse. When requested by districts and field facilities, resources permitting, AJI-2 will assist with training analysis, development, maintenance, and other training-related support. The following are recommendations to be instituted in training development.

**a.** Conduct analysis to determine:

- (1) The affected job tasks.
- (2) The outcomes.
- (3) The training audience.
- (4) Connection to other training, if any (as a prerequisite or follow-on training item).

For additional guidance on analysis, refer to Chapter 4, Paragraph 4.

**b. Compliance with FAA Order 1370.120.** Should a facility choose to deliver training electronically (e.g., eLearning or WBT) such training must be compliant with FAA Order 1370.120. Refer to Chapter 3, Paragraph 1(f) of this order for directions on compliance.

**c.** Create a design plan that includes:

- (1) Course or workshop outcomes.
- (2) Course or workshop instructional objectives.
- (3) Topics and other content needed to teach the objectives.
- (4) An outline of the objectives, topics, and associated content to be taught.
- (5) Instructional strategies and media choices for each objective or section of content.
- (6) Whether and how you will assess objectives.
- (7) Adult Learning Principles.

For additional guidance on design, refer to Chapter 4, Paragraph 5.

**d.** Develop training materials such as:

- (1) Lesson plans or outlines with content to be covered and exercises and activities for learner interactivity.
- (2) Handouts or other resource materials.
- (3) Assessments for objectives or activities and remediation plans, if permitting remediation. Assessments must meet requirements of Chapter 3, Paragraph 1(c).
- (4) Programming and packaging training content.

For additional guidance on development, refer to Chapter 4, Paragraph 7.

**e.** Validate training using the following criteria:

- (1) Instructional soundness.
- (2) Technical accuracy.
- (3) Job appropriateness.
- (4) Valid, reliable, and secure assessment instruments.

For additional guidance on validation, refer to Chapter 4, Paragraph 8.

**f.** Evaluate each training item to assess, at a minimum, participant reaction, vendor and instructor performance, learning outcomes, and the effectiveness of participatory learning techniques. For additional guidance on evaluation, refer to Chapter 4, Paragraph 9.

**3. Course File.** AJI-2 recommends that the facility creating the learning event establish and maintain a file for each learning event's documentation and materials, all stored in a courseware management system approved by AJI-2, in accordance with FAA Order 1350.14.

## Appendix A. Terms Used in This Order

**ADDIE Model:** Analyzing the problem, Designing a training solution, Developing the courseware, Implementing the solution, and performing Evaluations throughout the process.

**Analysis:** Analysis is the process of determining what information the audience needs to learn, the most effective way to present that information, and where it fits into an existing curriculum of training.

**Analysis Report:** The result of the analysis phase, this report documents analysis activities conducted including specific tasks, skills, and/or knowledge requirements for a particular job(s) or topic to be trained, prerequisites, and a description of the audience for training.

**Assessment:** A process for obtaining information that is used for making decisions about learners, curricula and programs, and educational policy.

**Assessments:** Instruments that evaluate the learners' mastery of the learning objectives, and, therefore, how well they meet the job requirements. They may also be used for informing decisions about learners, curricula and programs, and educational policy. Assessments fall under two broad categories: written and performance.

**Audience Analysis:** Determination of learner characteristics, such as current level of knowledge, skill, or experience, availability to receive training, number of learners to be trained, and appropriate class size for learning content.

**Briefing:** An organized body of information delivered to learners.

**Commercial Off-the-Shelf (COTS):** Products or services purchased from a vendor and delivered as-is without customization or other modification.

**Comprehensive Evaluation:** Detailed appraisal of a particular course or workshop to determine its effectiveness that takes place after the course or workshop has been delivered several times or at the request of stakeholders.

**Course:** A training event structured by measurable objectives that is designed for a particular target audience.

**Course Design Guide (CDG):** This document specifies the training outcomes, sequence of lessons, lesson and topic objectives, sequence of objectives, specific instructional methods and media to be used, and the assessment strategy.

**Course Walk-Through:** An abbreviated presentation of training to SMEs, instructional systems specialists, and instructors to ensure that revisions from technical and instructional reviews were made, instruction is logically sequenced, materials are of required quality and consistency, and any logistical problems have been resolved.

**Curriculum:** An organized body of training events along with the appropriate sequence, recommended delivery and assessment methods, and the level of proficiency learners attain as a result of the training events and curriculum.

**Curriculum Management:** Curriculum Management refers to training-related activities occurring after validation: the administration, storage, organization, maintenance, and revision of training.

**Design:** Design is the task of building a blueprint for learning based on creating objectives that align with the job tasks from the analysis report, and organizing them into a coherent sequence that includes topics, instructional strategies, and an assessment strategy.

**eLearning:** Training conducted via an online platform including but not limited to FAA eLMS, Blackboard, Adobe Connect, ATN, etc.; also referred to as WBT.

**Evaluation:** A systematic procedure for determining the effectiveness of a course, workshop, or briefing using criteria governed by a set of standards.

**First Course Conduct (FCC):** Delivery of training to target audience, observed by technical content lead and training development lead to determine if training meets validation criteria (for example, instructional materials and associated documentation are complete, accurate, ready for delivery), and determine whether the training is effective, adequate and acceptable to the learners during the first delivery. The First Course Conduct is part of training validation.

**High-stakes Decisions:** Decisions related to placement, promotion, or certification of personnel.

**Instructional Systems Design:** The science and psychology of sound instruction that uses a systematic, iterative, and, when necessary, flexible approach to plan, analyze, design, develop, implement, and evaluate training in an effective and efficient manner.

**Instructor-Led Training (ILT):** Training that involves delivery by an instructor either in the same location as the learners or remotely through distance delivery methods. May also be referred to as Facilitated Training.

**Job Task Analysis:** Identifies the job tasks performed by controllers and technicians as part of their daily work.

**Local and Service Center/Area Training:** Training that may or may not be developed with assistance from AJI-2 and intended for delivery only within a specified area or facility.

**Media:** Options for delivering training. One or more forms of media can be contained within a training platform.

**National Training:** Training developed through AJI-2 with standardized content for delivery to designated personnel across the country with no or minimal modification dependent on delivery location.

**Objective:** Statement of what the learners are expected to know or do when they have completed a lesson or entire learning event based on requirements for job performance.

**Operational Tryout (OTO):** A presentation of training in front of workgroup members and SMEs to identify and correct potential issues with the instruction, directions, content, and materials. Provides instructor orientation to materials and methods and allows other stakeholders to review. (*Precedes First Course Conduct in Validation process.*)

**Out of Agency Training (OAT):** Training that is conducted by or obtained from sources other than the FAA.

**Proctoring:** Supervising the delivery of an assessment or test.

**Remediation:** Method or process provided to allow a learner to improve written test or performance results outcomes.

**Second Course Conduct (SCC):** Delivery of training to target audience after a failed First Course Conduct. It is observed by the technical content lead and training development lead to determine if training meets validation criteria and if all the required changes from the First Course Conduct were completed. The SCC must meet all validation criteria in order to be considered valid for delivery to a wider audience.

**Simulation:** Imitation of an operation of a real-world process or system over time. Simulations present instructional scenarios and are delivered by media that create a realistic model of an actual situation or environment. Examples of simulations include tabletop reenactments, role-playing, mock review panels, and mock software displays.

**Subject Matter Expert (SME):** A representative of the specialty workforce (Air Traffic or Technical Operations) for whom training will be developed who ensures the technical accuracy of the training.

**Summative Evaluation:** Methods of judging the value/effectiveness of training at the end of training activities. These may include knowledge checks, quizzes, or scored assessments.

**Technical Training:** Instruction intended to prepare employees to perform the tasks specific to their job using applicable tools, equipment, and processes within the ATO operational workforce.

**Training Event:** Training that is part of a learners training record when successfully completed, and can consist of a course, workshop, or briefing.

**Training Materials:** These materials contain the content of the training as specified in the course design guide, for example, a programmed distance learning course, lesson plans for instructor led training, learner guides, resource materials, and assessments.

**Validation:** The process through which instructional designers and technical content personnel verify instructional materials and associated documentation are complete, accurate, ready for delivery, and are effective, adequate, and acceptable to the learners.

**Vendor Developed Training:** Training that is contracted out by the FAA for some or all of the deliverables.

**Workshop:** A structured training event designed for a particular target audience. Differs from a course in that a workshop doesn't necessarily contain learning objectives or assessments.

## Appendix B. FAA Resources and References

**FAA Order JO 3120.4, *Air Traffic Technical Training*.** This order prescribes instructions, standards, and guidance for the administration of technical training for ATO air traffic controllers.

**FAA Order JO 3000.57, *Air Traffic Organization Technical Operations Training and Personnel Certification Programs*.** This order specifies the policies necessary to implement and sustain uniform national Technical Operations Training and Personnel Certification Programs.

**FAA Order 1320.1, *FAA Directives Management*.** This order specifies requirements for the publication and management of directives in the FAA.

**FAA Order 1350.14, *Records Management*.** This order prescribes the requirements and responsibilities for conducting the agency's Records Management Program.

**FAA Order 1370.120, *Section 508 Accessibility Policy*.** This order establishes the Federal Aviation Administration's (FAA) enterprise-wide Section 508 Accessibility Policy.

### **FAA Human Resources Policy Manual, Vol. 5**

These resources may be found here, [https://employees.faa.gov/tools\\_resources/orders\\_notices/](https://employees.faa.gov/tools_resources/orders_notices/), with the exception of the Human Resources Policy Manual, which is found here: [https://employees.faa.gov/org/staffoffices/ahr/program\\_policies/policy\\_guidance/hr\\_policies/hrpmtoc/](https://employees.faa.gov/org/staffoffices/ahr/program_policies/policy_guidance/hr_policies/hrpmtoc/).

## **Appendix C. AJI Standards and Guidance**

### **AJI-2 Standard Operating Procedures and Approved Development Authoring Tools**

- FAA Learning Content Management System (LCMS) and Learning Content Governance
- Technical Training (AJI-2) Training Development Process Overview
- Global Non-Proprietary Training Development Tools Approved for Use

### **AJI-2 Guides**

- AJI Analysis Guide
- AJI Design Guide
- AJI Development Guide
- AJI Testing Guide
- AJI Validation Guide
- AJI Evaluation Guide

### **AJI-2 Templates**

- Analysis Report Template
- CDG Template
- Training Material Templates
- Written Test Blueprint
- Performance Test Blueprint
- Validation Report Template
- Evaluation Report Template

### **AJI-2 Checklists and Tools**

- CDG Alignment Checklist
- Technical Accuracy Review Sheet
- Instructional Design Review Sheet
- Training Observation Review Sheet
- Errata Workbook
- Test Blueprint Job Aid

The AJI-2 SOPs, guides, templates, and other resources are available on the Technical Training Knowledge Services Network site:

(<https://ksn2.faa.gov/stt/TT/CTG/CM/ICOP/SitePages/Home.aspx>).



## Appendix D. External Resources and References

Access Board Electronic and Information Technology Accessibility Standards:

<https://www.access-board.gov/guidelines-and-standards/communications-and-it/about-the-section-508-standards/section-508-standards>

2012 Consolidated and Further Continuing Appropriations Act (Public Law 112-55), Section 408: <https://www.congress.gov/112/plaws/publ55/PLAW-112publ55.pdf>

Standards for Educational and Psychological Testing:

<https://www.apa.org/science/programs/testing/standards>

Principles for the Validation and Use of Employee Selection Procedures:

<https://www.apa.org/ed/accreditation/about/policies/personnel-selection-procedures.pdf>

OPM Guide to Personnel Recordkeeping: <https://www.opm.gov/policy-data-oversight/data-analysis-documentation/personnel-documentation/personnel-recordkeeping/recguide2011.pdf>

OPM Guide to Human Resources Reporting: <https://www.opm.gov/policy-data-oversight/data-analysis-documentation/data-policy-guidance/reporting-guidance/part-a-human-resources.pdf>

General Records Schedule 2.6: Employee Training Records:

<https://www.archives.gov/files/records-mgmt/grs/grs02-6.pdf>

**Appendix E. Types of ATO Technical Training Events**

	<b>Course</b>	<b>Workshop</b>	<b>Briefing</b>
<b>Description</b>	A training event structured by measurable objectives that is designed for a particular target audience	A structured training event designed for a particular target audience	An organized body of information delivered to learners
<b>Purpose</b>	Performance improvement/change	Provide practice and/or hands-on activities for skill improvement or acquisition	Disseminate information
<b>Type</b>	Instructional and Experiential	Experiential	Informational
<b>Objectives</b>	Required	Required	Recommended
<b>Structure</b>	Objective driven	Objective and/or activity driven	Topic driven
<b>Documentation</b>	<b>Required:</b> Analysis Report, CDG, Test Blueprints, Validation Report	<b>Recommended:</b> Analysis Report <b>Required:</b> CDG, Test Blueprints (if using assessments), Validation Report (if validating)	<b>Recommended:</b> Analysis Report, CDG, Test Blueprints (if testing), Validation Report (if validating)
<b>Evaluation of Training Materials</b>	Required for technical content and instructional design	Required for technical content and instructional design	Required for technical content; recommended for instructional design
<b>Interactivity</b>	Includes interaction via exercises, case studies, scenarios, etc.	Includes interactions, such as hands-on activities, opportunities to collaborate	Little or no interaction
<b>Assessment</b>	Measurable written and/or performance tests for all designated objectives	Testing objectives is recommended; there may be subjective assessment	No testing or feedback required
<b>Validation</b>	Required	Recommended	Not Required