AIR TRAFFIC CONTROL FACILITY
OPERATIONS, TRAINING, MAINTENANCE,
AND STANDARDIZATION

OCTOBER 2019

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# Air Traffic Control Facility Operations, Training, Maintenance, and Standardization

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Preface

Training Circular (TC) 3-04.15 provides doctrinal administrative and operational standards for United States (US) Army air traffic control (ATC) facilities, and units. This publication is intended for use by all Active Army, Army National Guard (ARNG), United States Army Reserve, Department of the Army civilians (DACs), and contract personnel who perform ATC duties for the US Army. TC 3-04.15 consists of two parts—part one (chapters one through four) applies to installation (fixed) ATC facilities only and part two (chapters five through eight) applies to tactical ATC facilities. The appendices are common to both installation and tactical ATC facilities.

The principal audience for TC 3-04.15 is all members of the profession of arms. Commanders and staffs of Army headquarters serving as a joint task force or multinational headquarters should also refer to applicable joint or multinational doctrine concerning the range of military operations and joint or multinational forces. Trainers and educators throughout the Army will also use this publication.

Commanders, staffs, and subordinates ensure that their decisions and actions comply with applicable United States, international, and in some cases, host-nation laws and regulations. Commanders at all levels ensure that their Soldiers operate in accordance with the law of war and the rules of engagement. (See Field Manual [FM] 27-10.)

TC 3-04.15 uses joint terms where applicable. Selected joint and Army terms and definitions appear in both the glossary and the text. Terms for which TC 3-04.15 is the proponent publication (the authority) are italicized in the text and are marked with an asterisk (*) in the glossary. Terms and definitions for which TC 3-04.15 is the proponent publication are boldfaced in the text. For other definitions shown in the text, the term is italicized and the number of the proponent publication follows the definition.

This TC applies to the Active Army, the Army National Guard, the United States Army Reserve, and Army civilians unless otherwise stated. In addition, trainers, educators, and contractors will also use this publication as a doctrinal reference. TC 3-04.15 builds on collective knowledge and experience gained through recent operations, exercises, and the deliberate process of informed reasoning. Its principles and fundamentals address new technologies and evolving responses to diverse threats. It will also assist Army branch schools in teaching air traffic services (ATS).

The proponent of this publication is Headquarters, United States Army Training and Doctrine Command (TRADOC). Send comments and recommendations on Department of the Army (DA) Form 2028, Recommended Changes to Publications and Blank Forms, or automated link (http://www.armypubs.army.mil/) to Commander, United States Army Aviation Center of Excellence (USAACE), ATTN: ATZQ-TD-D, Fort Rucker, Alabama 36362-5263. Comments may be e-mailed to the Directorate of Training and Doctrine (DOTD) at usarmy.rucker.avncoe.mbx.doctrine-branch@mail.mil. Other doctrinal information can be found on the Internet at Army Knowledge Online (AKO) or call defense switch network (DSN) 558-3551 or (334) 255-3551.
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Introduction

To understand TC 3-04.15, the reader must understand the fundamentals contained in AR 95-2, Federal Aviation Administration Orders (FAAO) 7210.3 and 7220.1. The reader should also be familiar with the requirements contained in FAAO 7110.65 and the applicable Unified Facilities Criteria manuals.

TC 3-04.15 provides instructions, standards, and guidance for operating and managing air traffic facilities. A well-managed ATC facility results in trained, qualified, and proficient air traffic controllers ensuring safe and efficient use of airspace while supporting Army aviation operations.

TC 3-04.15 contains eight chapters:

- Chapter 1 details the processes, procedures, and requirements for ATC facility administration. It discusses facility staffing levels, currency requirements, and emergency manning levels. This chapter also discusses the facility personnel qualifications, responsibilities, and restrictions.
- Chapter 2 provides an overview of each of the various types of air traffic control facility operations and the associated requirements and responsibilities for each type of facility.
- Chapter 3 discusses the fixed base air traffic controller training program and details the requirements for the facility training program, facility training manual and the biennial skills evaluations.
- Chapter 4 provides instructions and requirements for air traffic control maintenance procedures in regards to ground inspections and the certification procedures. It also details the Air Traffic Services Maintenance Certification Program (ATSMCP).
- Chapter 5 provides basic discussion on tactical air traffic control facility administration. It outlines administration and management requirements to include tactical air traffic control ratings and certifications. It further discusses personnel responsibilities and restrictions in the tactical facilities.
- Chapter 6 describes the types of tactical air traffic services that are provided and details the capabilities, requirements, and responsibilities of each type of air traffic service.
- Chapter 7 provides an overview of tactical air traffic services training in relation to the combined arms training strategy. It also provides a detailed outline of the tactical air traffic training program and discusses the commander’s task list for each tactical system.
- Chapter 8 outlines the tactical air traffic services maintenance training program and discusses the theory of operation and performance examinations. It also discusses the maintenance training program progression.
PART ONE
Army Air Traffic Services

Chapter 1
General Information

This TC provides instructions, standards, and guidance for operating and managing air traffic facilities. A well-managed air traffic control (ATC) facility results in trained, qualified, and proficient air traffic controllers ensuring safe and efficient use of airspace while supporting Army aviation operations.

SECTION I – INTRODUCTION

1-1. The procedures within part one of this publication standardize US Army ATC operations and management of installation facilities. US Army ATC managers and supervisors will use this publication as a reference to establish facility standards.

1-2. This chapter details the processes, procedures, and requirements for ATC facility administration. ATC facilities should use local standing operating procedures (SOPs) to supplement these requirements when necessary.

APPLICABILITY

1-3. This publication provides US Army guidance for supplying ATC services and operating ATC facilities. This publication incorporates US Army applicable facility management guidance established in Federal Aviation Administrative Order (FAAO) JO 7210.3, 7220.1, and contingency planning guidance in response to the National Airspace System (NAS) equipment failures established in JO 1900.47. Additionally, the following publications apply to all Army controllers and contractors providing ATC support to the Army:

- FAAA JO 7110.65, Air Traffic Control.
- FAAA JO 7210.3, Facility Operation and Administration.
- FAAA 7220.1, Certification and Rating Procedures for Department of Defense (DOD) Personnel.
- FAAA JO 7340.2, Contractions.
- FAAA JO 7350.9, Location Identifiers.
- FAAA JO 7900.5, Surface Weather Observing.
- FAAA 8200.1, United States Standard Flight Inspection Manual (USSFIM).
- FAAA 8240.41, Flight Inspection/Air Traffic On-Site Coordination Requirements.
- FAAA 8260.15, United States Army Terminal Instrument Procedures Service.
- FAAA 8260.19, Flight Procedures and Airspace.
- FAAA 8260.3, United States Standards for Terminal Instrument Procedures (TERPS).
- FAAA 8260.42, United States Standard for Helicopter Area Navigation (RNAV).
- CFR 14, Part 65, Subpart B.
Chapter 1

- Unified Facilities Criteria (UFC) 3-260-01, *Airfield and Heliport Planning and Design*.
- UFC 3-260-04, *Airfield and Heliport Marking*.

1-4. National regulations or agreements adopted for Army use in overseas areas take precedence over this publication; however, every effort should be made to conform to this publication. Refer conflicting procedures to higher headquarters for review and direction. This TC supplements applicable Department of the Army (DA), Federal Aviation Administration (FAA), and International Civil Aviation Organization (ICAO) publications to be used in providing air traffic services (ATS). When the US Army provides ATS in overseas areas, deviations from these standards may be necessary to conform to foreign government regulations. Deviations will be outlined in an agreement between one of the following:

- Theater commander and the host government.
- Host government military commanders and US Army commanders.
- Host government ATC authorities and the US Army commanders.
- Host government ATC authorities and US Army ATC authorities.

1-5. Host regulations and procedures apply to US Army controllers who augment a civil or foreign ATS facility. US Army controllers who augment a facility operated by another branch of the US military will comply with the ATC regulations and procedures of the host service.

1-6. Supervisors of civilian controllers should review local bargaining unit agreements from their civilian personnel office. Labor management relations agreements provide overarching procedures and guidance for managers and supervisors of employees represented by an exclusively recognized union.

1-7. This TC is regulatory as directed by AR 95-2. Unless specifically identified otherwise in the text, waivers or deviations from these procedures shall be processed according to AR 95-2.

**SECTION II – FACILITY ADMINISTRATION AND MANAGEMENT**

1-8. This section provides instructions, standards, and guidance for operating and managing ATC facilities. Army ATC facilities are grouped into the following four major classifications:

- Army radar approach control (ARAC).
- Air traffic control tower (ATCT).
- Ground controlled approach (GCA).
- Flight following facility/airspace information center (AIC).

1-9. For a detailed description of each of these facilities and the services these facilities provide, refer to AR 95-2.

**COMBINED AIR TRAFFIC CONTROL FACILITIES**

1-10. Combined ATC facilities include two or more of the facilities classified in paragraph 1-8 permanently into one organization at one physical location. Operations of this type may use a combined training program the length of which will equal the sum of the time limits of the facilities which were combined. If separate rating programs are maintained, the time limits will remain as published based on facility classifications. When facilities are combined, individual facility management and administration functions are merged. Combined facilities become a larger, centralized facility providing ATC services under one management structure. Combined facilities will issue facility ratings as appropriate for the classifications of facilities making up the combined facility.

1-11. Some facilities do not lend themselves to combination and require a distinct management structure for continued, safe operations. Even when proximity is advantageous to combine facilities, other factors should be considered before combining ATC services. Facility managers should carefully weigh training, supervision, and diminishment of ATC services when considering the permanent combination of facilities. Requests to combine facilities must be forwarded through Army Command (ACOM) to Air Traffic Services Command (ATSCOM) using the facility request format and procedures detailed in AR 95-2.
LIMITED POSITION QUALIFICATIONS

1-12. When training is required to support tactical air traffic controller training, military personnel may be designated to perform limited position qualification functions within an army ATC facility.

1-13. Army tactical controllers authorized to operate in a portion of the facility's area of responsibility require a general knowledge of the facility's total area of responsibility. The facility training program (FTP) for these specialized position qualifications will consist of a detailed knowledge and separate training program established for the area in which the controller intends to operate.

1-14. Annotate participation in an installation training program in Section I of DA Form 3479, Training and Proficiency Record- Air Traffic Controller, training conducted for these position qualifications will be annotated in Section II of DA Form 3479, and completion of limited position qualification will be annotated in Section III of DA Form 3479. No entries will be made on FAA Form 7220-1, Air Traffic Control Specialists Certificate, unless the Army tactical controller completes all phases of the installation training program and receives a facility rating.

1-15. The training received at installation facilities may satisfy experience gates, proficiency hours, and commander task evaluations for tactical ratings provided unit examiners are present to observe controller performance.

MULTIPLE RATINGS

1-16. A controller with multiple ratings is one who holds ratings from two or more different facilities that are co-located. Controllers with multiple ratings must meet currency requirements of all facilities as outlined within AR 95-2. A combined facility training manual (FTM) may be prepared at locations where multiple ratings are required as a condition of employment or when a combined FTM format reduces the redundancy of training requirements for controllers pursuing multiple ratings.

FACILITY CONSOLIDATION

1-17. Facility consolidation is a temporary operation during non-peak hours and is approved by the ATC Chief. The ATC chief will define consolidated facility operations in a memorandum outlining—

- The facilities to be consolidated.
- Identification of peak operational hours.
- The hours the consolidated facilities will operate.
- The maximum traffic density allowed before additional workforce is brought in for duty and notification procedures when traffic conditions exceed maximum levels.
- The required staffing (position manning) and management oversight of the facility during consolidated operations.
- Identification of risks and actions taken to mitigate them.

Note: Facilities consolidated during non-peak hours will be manned with a minimum of two fully qualified controllers (rated in all facilities consolidated), one of which must be controller-in-charge (CIC) qualified. Position qualified (PQ) controllers authorized under combined positions (paragraph 1-40) will not be used to satisfy this requirement.

STAFFING LEVEL STANDARDS

1-18. An understanding of staffing levels is necessary to effectively manage controller personnel and ensure operational readiness of the facility. Facility managers should review AR 570-4 to better understand the Army’s planning, programming, budgeting, and execution polices regarding staffing levels and manpower determinations. For the purpose of this TC, two levels of staffing are presented—required staffing levels and emergency manning levels (EMLs).
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**REQUIRED STAFFING LEVELS**

1-19. Required staffing levels are reflected on a facility’s table of distribution and allowances (TDA) and are determined using manpower staffing standards. This staffing level represents the required number of personnel to operate a facility within mission requirements. Staffing levels developed under AR 570-4 represent the operational controller requirements only. For authorized facility management oversight personnel, and grade table allowances, refer to DA PAM 611-21. Facility TDA levels are validated by the appropriate ACOMs, Army Service Component Command (ASCC), or direct reporting unit (DRU) headquarters. Factors relevant to these calculations are—

- Days per week facility is open.
- Hours of operation per day.
- Number of peak and off peak shifts.
- Number of control or operating positions per shift.
- Day-week-month conversion factors.
- Manpower availability factor.

**EMERGENCY MANNING LEVEL**

1-20. EMLs represent the minimum number of facility-rated and position-qualified controllers necessary to support the mission for limited periods. EMLs should not be confused with required staffing levels as discussed above. EMLs are developed by the ATC/facility chief and validated by the appropriate ACOM, ASCC, or DRU headquarters. Copies of validated EMLs are furnished to local leadership and maintained by each facility. Once validated, EMLs become the basis for reporting and are used to determine facility actions as identified below. EMLs will be revalidated every two years or when a change to mission requirements is initiated.

1-21. Operations at approved EML restricts ongoing controller progression and significantly impairs administration/management functions. Facilities operating at this manning level experience increased payroll expense due to extended work schedules, restrictions of leave and school attendance, and significant changes to workforce scheduling based on unplanned controller illnesses and medical incapacitations. When developing EMLs, the following factors should be applied:

- Daily facility operational hours.
- 50-hour work week per controller.
- Consolidated positions, except when determined by the facility chief based on traffic density and complexity of positions. A statement will be added to the EML validation listing positions that cannot be consolidated, time periods (shifts), and the justification.

1-22. The following formula is used to determine EMLs: Daily hours operational times number of operational positions times number of days operational each week divided by maximum hours a controller can work in one week.

**Example**

16 hours of operation daily X 2 operational positions X 5 days operation per week = 160 divided by 50 = 3.2. (For EML purposes, the value is rounded up to the next whole number.) In this case, the EML is 4.

1-23. AR 95-2 prohibits facilities from operating at EML for longer than 60 days. When a facility reaches EML, the following additional actions should be taken to mitigate the impact on flying operations. The following actions require the involvement and support of airfield leadership, local post/camp/station commanders, and when support of adjacent FAA facilities is required, the FAA regional Department of the Army representative (DAR):

- Curtail ATC services, such as multiple precision radar approach capability and monitoring approaches during visual meteorological conditions.
- Request relief from external visits/inspections affecting facilities.
- Curtail ATC facility operating hours and temporarily return the airspace to the FAA.
- Notice to airmen (NOTAM) the facility closed and cease operations.

1-24. If the facility goes below the validated EML, or personnel actions taken have not alleviated the adverse conditions and the facility remains at EML at the end of the 60-day period, facilities must immediately reduce services or curtail operating hours. If corrective action cannot be taken in time to avoid the curtailment, the post, camp, or station commander will be notified of the anticipated reduction in ATC hours of operation or services and the date normal operations will resume.

1-25. Notification that services or hours of operation have been curtailed is sent through the airfield division chief/commander/manager to the installation commander, ACOM, ASCC, or DRU headquarters and the ATSCOM using standard memorandum format. Refer to AR 25-50 for memorandum format and standards.

**CURRENCY REQUIREMENTS**

1-26. Controller skills are perishable and require continued use to maintain the appropriate level of proficiency. All controllers in operational facilities regardless of equipment type or location must meet these currency requirements.

1-27. The currency period for installation facility controllers is based on the previous calendar month. The currency period for tactical facility controllers is based on the previous six calendar months.

1-28. Facility chiefs and training supervisors are required to rotate through all facility positions for a minimum of 24 hours total each currency period.

1-29. Facility chiefs and training supervisors holding multiple ratings are required to rotate through all positions for a total of 16 hours in each facility, each currency period.

1-30. All other controllers are required to rotate through all facility positions for a minimum of 40 hours total each currency period.

1-31. Controllers holding multiple ratings are required to rotate through all positions within those facilities for a minimum of 24 hours total for each facility, each currency period.

1-32. GCA controllers are required to complete 10 approaches each currency period, 5 of which may be conducted through simulation and one of which must be an emergency or no-gyro approach. At facilities where controllers have multiple ratings and rotate between facilities, controllers will complete 5 live approaches, one of which must be an emergency or no-gyro approach. ARAC facilities will determine precision approach radar (PAR) currency requirements for assigned controllers detailed in a facility memorandum.

1-33. No more than 50 percent of currency requirements may be met using accredited simulators or time spent providing direct one-on-one supervision.

1-34. Distribution of position time to meet currency requirements will be determined by the facility chief in a facility memorandum based upon complexity and traffic density. When working combined positions, controllers will equally divide the time between the combined positions.

1-35. Facility chiefs shall develop local measures to track controller position hours and report monthly totals on DA Form 3479-6, ATC Facility and Personnel Status Report, for the controller’s assigned facility.

**OPENING AND CLOSING FACILITIES**

1-36. ATC managers operating facilities less than 24 hours per day, 7 days per week, will establish procedures for opening and closing. They will coordinate these procedures with airfield operations and/or the ATC facility having instrument flight rules (IFR) jurisdiction. These procedures will also be included in a letter of agreement (LOA). When opening and closing, part-time facilities will broadcast the service they are resuming or terminating.
1-37. If airfield operations continue to function when the ATC facility is closed, the ATC facility and base/flight operations will exchange pertinent flight data (FD) before the facility opens or closes. These procedures will also be included in a LOA. The facility will publish hours of operation in the appropriate flight information publications (FLIPs)/NOTAMs.

SHIFT REQUIREMENTS

1-38. The shift, work week, and rest periods are as follows:

- **Shift:**
  - An 8-hour continuous shift is standard.
  - Maximum duty day will not exceed 10 hours for nonstandard shifts.
  - A duty day begins at the first required activity of the day for the controller, such as physical readiness training (PRT) formation.

- **Work week:**
  - A 40-hour work week is standard for performing ATC duties.
  - A maximum 50-hour work week is authorized for a period not to exceed 60 days.

- **Rest periods:**
  - A 15-minute rest period is required after every 4 hours of continuous ATC work, if traffic density and facility operations permit.
  - An uninterrupted 8-hour rest period is required prior to each shift.
  - Controllers must be relieved of all duties for 24 consecutive hours at least once during each 7-day period.

*Note.* The chain of command will establish written risk management procedures to address any deviations (extension) to the above work periods.

POSITION BINDERS

1-39. Air traffic managers must develop and maintain binders for each position/sector within the facility. In addition to the above, this must include a supervisor position binder. The supervisor position binder should address procedures which will enhance controller performance in areas such as scanning, coordination, use of proper phraseology, and proficiency/remedial training. The binder must contain information that is necessary for the safe and efficient operation of each position/sector, including examples and formats where appropriate. A copy of each binder must be in a location easily accessible by each position/sector. Data may be stored and displayed via electronic means on Information Display Systems (IDS) where available.

CONSOLIDATION OF OPERATING POSITIONS

1-40. The consolidation of operating positions will be determined by the facility chief in a facility memorandum outlining the circumstances in which positions may be combined, to include—

- Specific hours of the duty day that positions may be combined.
- Traffic conditions allowing position consolidation.
- Positions excluded from consolidation.

*Note.* No less than two qualified controllers will be present for duty in a control tower (TWR), GCA, and AIC—one of which must be facility rated and CIC qualified. ARAC facilities require one fully qualified (rated) controller per sector (after consolidation) and one rated controller per PAR position—one of which must be CIC qualified. No less than two controllers will be present for duty in an ARAC. The use of PQ controllers to meet manning requirements may be used in TWRs, GCAs, and AIC; although, this creates a unique risk when managing rest breaks and other relief periods.
POSITION ASSIGNMENTS

1-41. Only ATC personnel qualified to perform duties outlined in AR 95-2 and this publication will man operating positions. Controllers will be assigned to positions as required by traffic, equipment, and individual qualifications. Personnel assigned to an operating position will have their air traffic control specialist (ATCS)/control tower operator (CTO) credentials readily available and shall present the credentials to authorized personnel upon request.

1-42. Non-PQ trainees will not be assigned to positions on which they are not qualified unless they are under direct supervision of facility rated controllers (see A-35 note for definition of direct supervision). In addition, PQ controllers will not be assigned to more than one position at a time, unless they are qualified on both positions. Non-PQ trainees and PQ controllers may sign on to permanently combined positions at facilities where these positions are reflected on the facility status report, DA Form 3479-6, and manning documents.

1-43. Facility-rated controllers providing direct one-on-one supervision will sign on behind the non-PQ trainees and are directly responsible for operating the position. Personnel providing direct one-on-one supervision may not be signed on at additional positions. Non-current or non-proficient, facility-rated controllers will not be assigned to a position unless given direct one-on-one supervision by current facility-rated controllers.

1-44. At the discretion of the shift leader (SL), non-PQ trainees may conduct precision or surveillance approaches during IFR conditions under certain circumstances. They may conduct these approaches if—

- Direct one-on-one supervision is maintained.
- Direct communications override is available at the position of operation.
- Weather conditions are acceptable (not less than a 500-foot ceiling or 1-mile visibility).

Transfer of Position Responsibility

1-45. Position responsibility will be transferred according to FAAO JO 7110.65 and appropriate facility directives. All controllers, including supervisors, will know how to perform the duties of any position to which they may be assigned before they assume responsibility. Each controller will—

- Read the recent information file, DA Form 3502, Daily Report of Air Traffic Control Facility, and any other operational data specified.
- Obtain a briefing on communications, traffic and airfield conditions, equipment outages, and current and forecasted weather trends.
- Accept responsibility for the position only after ensuring the briefing is complete and all questions about the operation of the position have been resolved.

1-46. The relieving controller and the controller being relieved will share equal responsibility for the completeness and accuracy of the position-relief briefing. The ATC chief/facility chief will provide a tailored checklist of the equipment and conditions that will likely be a factor at each position during relief periods. This checklist will be posted at the position or readily available in the applicable position binder.

OPERATING INITIALS

1-47. The ATC chief/facility chief will assign controllers and maintenance personnel individual two-letter operating initials. The facility chief and maintenance chief will maintain a list of operating initials for all assigned personnel on a facility memorandum. Controllers will use the assigned operating initials on all interphone systems and facility forms and records except where signatures are required. Combined or co-located facilities may use a consolidated memorandum for this purpose.

AIRCRAFT ACCIDENTS AND INCIDENTS

1-48. When a facility, service, or navigational aid (NAVAID) is suspected to have been involved in an aircraft accident or incident, ATC must act immediately. Airfield division chief/commander/manager must perform notifications according to AR 95-2. ATC will provide the continuous safe, orderly, and expeditious movement of all air traffic operating under the jurisdiction of the ATC facility. In addition, ATC will obtain
accurate and complete information for investigations. When an accident or incident involves, or is suspected to have involved radar equipment, the facility will discontinue radar service until a flight inspection is performed.

**Responsibilities of Air Traffic Control Managers**

1–49. As soon as the ATC chief/facility chief, training supervisor/specialist, SL, or CIC receives notification of an accident or incident, he will—

- Notify the chain of command. The notification will include—
  - Date and time of accident/incident.
  - Number and type of aircraft involved.
  - Number of injuries and/or fatalities.
  - Brief synopsis of events to include ATC involvement.
  - Actions taken.
  - A point of contact by name, position, and telephone number to obtain additional information.

- Obtain a written statement about the incident or accident from all controllers and supervisory personnel involved. Written records and audio recordings pertaining to an aircraft accident will be retained for a minimum of six months. Written records or audio recordings pertaining to an aircraft incident will be retained for a minimum of 6 calendar months.

- Request aviation routine weather report (METAR) or special observation.

- Record all appropriate details, including the local weather observation, on DA Form 3502 (see appendix A).

**Note.** Immediately inform the local weather personnel of each emergency or aircraft mishap. When notified of an emergency, the weather station must intensify the weather watch to ensure the aircraft in distress receives the maximum weather support.

- Mark and safeguard the audio recordings that are (or may be) pertinent to the accident and handle them according to chapter three of this publication. In case of an incident, such as an emergency or a complaint about ATC services that does not result in an accident, removal of audio recordings before the normal rotation time is unnecessary.

- Relieve the controller for physical and psychological evaluation by the local medical officer or flight surgeon if there is any indication the controller contributed to the accident or incident. The controller will obtain a clearance from the local medical officer or flight surgeon before returning to duty.

- Examine the condition of the equipment, along with technically certified maintenance personnel, to determine whether it could have contributed to the accident or incident.

**Note.** Additional instruction pertaining to facility actions will be contained in the ATC facility position binder.

**Information Release**

1–50. No personnel may give interviews, make statements, or release any written or recorded information to news agencies or unauthorized personnel or organizations. Information on an aircraft accident, incident, or alleged violation of any kind will not be released outside official Army channels without approval from the commander, United States Army Aeronautical Services Agency (USAASA). The identity of personnel involved will be treated as restricted information. The installation commander may approve the release of information to Army organizations and Army press releases after consultation with the Public Affairs Office and the Staff Judge Advocate.
Note: Headquarters, DA Deputy Chief of Staff, Assistant Chief of Staff, Operations and Plans (G-3) is the release or denial authority for Freedom of Information Act requests. Commander, USAASA serves as the Deputy Chief of Staff G-3 responsible official for the US Army regarding airspace, aeronautical information, ATC, and flight procedures policy.

SECTION III – PERSONNEL TITLES, QUALIFICATIONS, RESPONSIBILITIES, AND RESTRICTIONS

1-51. This section outlines the individual responsibilities and addresses qualifications for the personnel listed below.

AIR TRAFFIC CONTROL CHIEF

1-52. The ATC chief must meet all requirements as outlined in AR 95-2. The ATC chief manages multiple ATC facilities at a single airfield, heliport, or installation. The ATC chief’s responsibilities include—

- Supervises and manages all ATC facilities under his control at an airfield, heliport, or field site.
- Provides liaison on matters of ATC and airspace with the AT&A; DA representative; FAA; major Army commands; local post, camp, or station commander; and representatives of other units, agencies, or commands.
- Serves as ATCS/CTO examiner according to AR 95-2, FAAO 7220.1, and this publication, as needed.
- Ensures ATC systems, facility equipment and associated NAVAIDs are operationally acceptable.
- Ensures facilities collect and safeguard data on aircraft mishaps, emergencies, or violations.
- Ensures assigned ATC personnel maintain currency.
- Ensures TERPs data collection and packets are complete and accurate according to AR 95-2 and FAAO 8260.15.
- Administers biennial written exams and conduct skill evaluations in facilities in which a rating is held, as needed.

FACILITY CHIEF

1-53. The facility chief manages a single ATC facility. They must be facility rated and have completed facility management and administration training prior to assuming the duties of the position. Facility chief duties include—

- Ensuring the facility operates according to military and FAA rules and regulations applying to ATC.
- Developing and maintaining a FTP.
- Developing and maintaining a FTM.
- Serving as ATCS/CTO examiner according to AR 95-2, FAAO 7220.1, and this publication.
- Ensuring all controllers meet the physical standards of AR 40-501, AR 95-2, DA Pam 611-21, their official job descriptions, and local/host nation requirements.
- Ensuring the operational readiness of facility equipment and associated NAVAIDs.
- Maintaining a current file of pertinent regulations, manuals, charts, maps, and training material according to this publication and AR 95-2.
- Ensuring assigned personnel maintain currency.
- Maintaining custodial control of all facility forms, records, and publications and ensuring their accuracy, completeness, and distribution.
- Initiating and maintaining a facility duty schedule.
- Conducting testing and practical evaluation for PQ or rating of trainee controllers.
• Administering biennial written exams and conducting skill evaluations.
• Ensuring the number of non-ATC personnel in an ATC facility to a minimum. The chief will be the final authority on the admittance of non-ATC personnel to the facility and the number permitted at any one time. (In the chief’s absence, the SL or CIC will assume this responsibility.)

AIR TRAFFIC CONTROL TRAINING SUPERVISOR/SPECIALIST
1-54. The ATC training supervisor/training specialist is a facility-rated ATC specialist designated by the facility/ATC chief. They must also complete facility management and administration training prior to assuming the duties of this position. The training supervisor/specialist—

• Plans, schedules, directs, and supervises the facility training of assigned ATC personnel.
• Supervises and conducts classroom and self-study training.
• Develops local course material, training aids, and control scenarios to supplement and enhance the FTP.
• Evaluates and analyzes the capabilities and progress of the ATC personnel assigned to that facility.
• Maintains training records.
• Conducts position qualification evaluations.
• Recommends to the facility chief those controllers who require proficiency or remedial training. The training supervisor/specialist bases his recommendations on—
  ▪ Personal observations.
  ▪ SL/CIC comments.
  ▪ Controller evaluations
• Serves as ATCS/CTO examiner according to AR 95-2, FAAO7220.1, and this publication.
• Administers biennial written exams and conducts skill evaluations.

AIR TRAFFIC CONTROL AUTOMATION SYSTEMS ADMINISTRATOR
1-55. The ATC automation systems administrator duties are performed by either ATC (general schedule [GS]-2152 or 15Q), ATC maintenance technicians (GS-856 or 94D), and/or foreign national equivalent employees employed by the Department of the Army in US Army ATC facilities provided they meet the training requirements according to regulatory guidance. Contractors in the aforementioned specialties may perform ATC automation systems administrator duties but shall not certify systems for use.

QUALIFICATIONS
1-56. ATC personnel are required to be facility rated and maintain proficiency within the associated facility. All ATC automation system administrators are required to complete the systems specialist course prior to performing these duties. The following are recognized training courses:

• Systems Administrators Course; Keesler AFB, MS.
• Systems Administrators Course; FAA Mike Monroney Aeronautical Center, OKC, OK.
• Systems Administrators Training associated with the installation of new systems.
• As applicable, Network+ certification and other information assurance requirements.

RESPONSIBILITIES
1-57. The ATC automation systems administrator is an assigned additional duty. The automation systems administrator ensures that the facility computer and related equipment function properly. He also—

• Analyzes, logs, tracks and resolves software/hardware matters of significance pertaining to networking connectivity issues, printer, servers, and applications to meet mission needs.
• Coordinates hardware/software installations and upgrades to ensure work is properly performed in accordance with established policy.
- Coordinates and monitors troubleshooting to isolate and diagnose common system problems.
- Coordinates testing, upgrades and configuration of system files and services. Ensures changes are in accordance with appropriate operating procedures.
- Installs, configures and maintains workstations and servers, including web based servers.
- Performs software installations and upgrades to operating systems and layered software packages and maintains them in accordance with established policies and procedures.
- Conducts routine hardware and software audits of workstations/servers for compliance with established standards, policies, procedures and configuration guidelines.
- Directs automation activities for systems analysis, program updates, security management, technical support, and resource management.
- Maintains control over the configuration of ATC automation systems, ensuring compliance with FAA, US Army, and National Airspace System specifications.
- Assists functional users define requirements to sustain or improve facility operations.
- Coordinates with ATC maintenance personnel with active certification authority to conduct systems or subsystems certification following events that effect equipment certification.

**SHIFT LEADER/SUPERVISOR**

1-58. During the SL/Supervisor’s tour of duty, they are responsible to the facility chief for the efficiency of facility operations. They must be facility rated and have completed facility management and administration training prior to assuming the duties of this position. The SL—

- Assigns and directs all phases of the subordinates’ work.
- Ensures personnel receive on-the-job training (OJT) and conducts assessments of training through the administration of controller evaluations (DA Form 3479-1, *Trainee/Controller Evaluation*).
- Conducts position qualification evaluations when directed by the facility chief or training supervisor/specialist but is restricted from conducting biennial skill evaluations.
- Assists and advises controllers during emergencies.
- Maintains facility records.
- Ensures personnel are current and proficient.
- Notifies search and rescue facilities of aircraft in distress and provides assistance and advice.
- Delegates responsibility to subordinates and assists the training supervisor/specialist.
- Evaluates the operational effectiveness of facility systems, subsystems, and equipment.
- Records and reports outages and takes action to correct discrepancies.
- Serves as ATCS/CTO examiner if requirements in AR 95-2, FAAO 7220.1, and this TC are met, as needed.

**CONTROLLER-IN-CHARGE**

1-59. A CIC will be designated to assume the duties of the SL under the following conditions:

- When supervisory personnel leave the facility or are off duty, the facility chief will designate a CIC for the period the supervisor is absent. Assigning a CIC assures coordination and cooperation will continue when the SL is not available.
- The CIC will assume the duties and responsibilities of the SL. A CIC also performs normal ATC duties in addition to those of the SL.
- CICs may conduct controller evaluations but are restricted from conducting position qualification assessments and biennial skill evaluations.

1-60. Prior to being designated as a CIC, controllers will meet the following prerequisites:

- Operationally current in the facilities where CIC duties are to be performed.
- Selected by the ATC/facility chief.
- Successfully completed administration and management training.
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- Certified for 6 months in the area/facility CIC duties to be performed.

1-61. The ATC/facility chief may designate more than one CIC per shift to ensure coverage is achieved during leaves, illnesses, or temporary groundings. The CIC duties should be rotated to expose the controller to supervisory duties and responsibilities.

1-62. ATC/facility chiefs and training supervisors/specialists will determine facility requirements for CICs considering facility operational needs such as scheduling concerns, staffing concerns, special events, and other issues. ATC managers will evaluate controllers for CIC duties based on their knowledge, skills, and abilities. Included in these three areas are problem solving and analytical ability, planning and organizing, decisiveness, judgment, communication skills, and interpersonal skills.

AIR TRAFFIC CONTROL MAINTENANCE CHIEF

1-63. The ATC maintenance chief is responsible for all ATC equipment maintenance. Duties include—

- Coordinating maintenance-related issues, such as LOA, on-call rosters, and NAVAID-scheduled maintenance, with the ATC chief/facility chief.
- Ensuring maintenance facilities are maintained according to applicable military and FAA publications and standards.
- Ensuring the qualifications of maintenance personnel.
- Establishing a maintenance training and certification program for the local facility.
- Coordinating facility configuration changes with the ATC chief or higher headquarters.
- Maintaining "as built" diagrams and drawings for ATC facilities and equipment according to AR 95-2.
- Maintaining a file of pertinent regulations, manuals, and training material listed in appendix A.
- Serving as a maintenance training program certifier.

CONTROL TOWER OPERATOR AND AIR TRAFFIC CONTROL SPECIALIST EXAMINERS

1-64. CTO and ATCS examiners will be designated and assume duties as follows:

- CTO and ATCS examiners will be designated according to AR 95-2, FAAO 7220.1 and this publication. AR 95-2 explains how to request examiner designations.
- A primary and alternate ATCS and CTO examiner may be appointed per facility.
- Examiners will conduct CTO/ATCS facility rating or certifications according to Title 14 CFR Part 65, FAAO 7220.1, and AR 95-2. The required documentation for rating and certifications will be prepared and processed as per guidance provided in FAAO 7220.1 and AR 95-2.
- PQ controllers in the absence of the facility managers provided they hold a rating for the facility and are current.
- Conduct biennial skill evaluations.

Note. CTO and ATCS examiners not meeting medical requirements may only administer the written portion of ratings and biennial skill evaluations.

OPERATING POSITIONS

1-65. Operating and controlling an ATC facility may require the following positions and responsibilities in addition to the supervisory positions:

- **Local control (LC).** Issues information and clearance for properly separating and sequencing aircraft under his control.
- **Ground control (GC).** Issues information and instructions for the orderly movement of traffic (aircraft, vehicles, and pedestrians) on the movement area.
- **Flight data.** Receives, posts, and relays FD clearances and messages and assists in facility operations, as directed.
- **Coordinator.** Coordinates the flow of air traffic between other positions or facilities, as required.
- **Clearance delivery.** Delivers clearances to departing aircraft. The function of the clearance delivery is separate from that of the GC or FD.
- **Flight following (FF).** Issues information and advisories to arriving, departing, and en route aircraft and monitors the flight progress of aircraft. The FF also receives, posts, and relays progress reports and posts information to FD strips, boards, charts, and tactical situation maps.
- **Radar position (R).** Ensures separation, initiates control instructions, monitors and operates radios, accepts and initiates automated handoffs, assists the radar associate position with non-automated handoff actions when needed, assists the radar associate position in coordination when needed, and scans radar display. Correlates flight progress strip information, ensures computer entries are completed on instructions or clearances issued or received, ensures strip marking are completed on instructions or clearances issued or received, and adjusts equipment at radar position to be usable by all members of the team.
- **Radar assistant.** Assists the radar controller by accepting or initiating automated handoffs as directed by the radar position for the continued smooth operation of the facility/sector and ensures the radar position is made immediately aware of any actions taken.
- **Arrival control (AR).** Provides for the radar sequencing and separation of aircraft vectored to intercept the final approach courses for handoff to precision approach radar or for the conduct of surveillance approach.
- **Final control.** Issues instructions to the pilot based on the position of the aircraft relative to the final approach course, glide path, and distance from touchdown. The final control also monitors certain non-radar instrument approaches.

*Note.* The facility chief in a facility memorandum may further define radar positions, such as radar North and radar South.

### SECTION IV – FACILITY EQUIPMENT

1-66. This section discusses ATC facility equipment, equipment checks, and facility maintenance. It includes information on recorded media and procedures for the reproduction and accountability of recorded data. For information concerning equipment requirements, layouts, and navigational aid equipment standards, see appendix E.

### EQUIPMENT OUTAGES

1-67. ATC facilities responsible for notifying the designated facility or office of any equipment outage, service curtailment, or airfield activity that may require a NOTAM must establish written procedures for the notification process.

### FACILITY MAINTENANCE

1-68. The maintenance chief at each facility will ensure personnel schedule services, inspections, and repairs of ATC equipment according to AR 750-1, DA Pam 750-8, and the applicable operator/maintenance manual. Personnel will coordinate scheduling with the ATC/facility chief.

### COORDINATION

1-69. The maintenance chief and facility chief will ensure certified maintenance personnel are available to perform any alignment or adjustment requiring the use of test, measurement, and diagnostic equipment (TMDE) or maintenance data terminal. Maintenance of a NAVAID servicing two or more airfields or is a part of the NAS must be coordinated with the air route traffic control center (ARTCC) and other facilities affected.
SCHEDULING PERSONNEL FOR DUTY

1-70. Certified ATC maintenance personnel will be scheduled for duty during normal duty hours. However, other factors to consider before recalling maintenance personnel include amount of time before maintenance personnel arrive for scheduled duty, current and forecast weather conditions, impacts on civil flight procedures and aircraft traffic.

PROCEDURES FOR RECALLING AIR TRAFFIC CONTROL MAINTENANCE PERSONNEL

1-71. The facility chief/airfield management, in coordination with the maintenance chief, must develop written procedures for recalling ATC maintenance personnel if ATC or NAVAID equipment fails. These written procedures will be readily available to controllers on duty and will be signed by the facility chief and maintenance chief.

Note. ATC equipment with backup systems or NAVAIDs that do not provide the only means of an IFR approach to the active runway normally would not require a recall of maintenance personnel.

EQUIPMENT CHECKLIST

1-72. The equipment checklist will be a locally produced form; the checklist may be a separate form, or it may be placed on the back of DA Form 3502. This form is not intended to circumvent the Army maintenance system but only to serve as a list of equipment that must be checked. Controllers must complete standard Army maintenance forms on equipment requiring them. The equipment checklist will be initiated at opening of the facility and reviewed at the beginning of each shift. Completed checklists will be filed with and retained the same as DA Form 3502.

1-73. The facility chief will establish an equipment checklist to be completed at the opening of the facility. This checklist often includes communication systems, light guns, Tower Display Monitors/Workstations, Digital Bright Radar Indicator Tower Equipment (DBRITE), and Automatic Terminal Information Service (ATIS) checks. If radio checks cannot be completed during the facility’s duty day this will be annotated on the DA Form 3502 in the closing statement. Recording equipment may be included in the equipment checklist.

1-74. If all equipment is operational, the entry on the form may be limited to “checklist complete.”, for example, “checklist complete; DBRITE OTS MAINT/CB NTFYD.”

1-75. If an operational check of the primary crash alarm system cannot be conducted when a facility begins operation, this system will not be included on the equipment checklist. This system will be checked at least once a day and the results entered on DA Form 3502. ATC/facility chiefs will establish guidelines for testing landlines used to contact emergency services for facilities that do not have a primary crash alarm system.

1-76. If outages occur, the entry on DA Form 3502 must identify those outages, the name of the agency notified, and their operating initials. A capital “E” (equipment) will be placed in the coordinated universal time (UTC) column to the left of entries showing equipment out-of-service time and return-to-service time. The “E” for a specific equipment outage need not be repeated each day thereafter unless the equipment returns to service. Examples of these are E0800, checklist complete, 126.2T OTS MAINT/CB NTFYD” and “E 0810, 126.2T RTS, radio and recorder checks complete.”

AUTOMATIC TERMINAL INFORMATION SERVICE

1-77. ATIS provides advance operational and meteorological information for terminal areas and non-control airports using a controller-prepared recording. This information is repetitively broadcast on a voice outlet for aircraft arriving/departing an airport or operating within the terminal area. FAAO JOs 7110.65 and 7210.3 contain further guidance on ATIS.
COORDINATED UNIVERSAL/LOCAL TIME

1-78. All ATC facilities will use Coordinated Universal Time (UTC) and date in all operational activities. Local time will be used for facility duty schedules and other administrative forms and correspondence.

1-79. A reliable clock depicting hours, minutes, and seconds will be visible from each operating position in all ATC facilities. Except for those facilities with digital or direct coded digital time source clocks, time checks will be conducted at the beginning of each shift. Time checks will be conducted with the next higher ATC facility, with an ATC facility possessing a digital direct-coded time source, or with one of the time sources listed in FAAO JO 7210.3. The results of time checks will be logged on DA Form 3502. Time checks will be performed according to FAAO JO 7210.3. Check clocks immediately after the facility goes to emergency/backup power and again 30 minutes later if found to be inaccurate. Check clocks hourly until restored to normal power.

LIGHT GUNS

1-80. ATC light gun color codes and meanings will be attached to the back or side of the light guns. ATC light guns will be adjusted to provide a red light when activated (if applicable).

CRASH ALARM SYSTEM

1-81. Crash telephone and radio receiver/transmitter keys should be centrally located so they are readily available to all control positions. DA Pam 385-90 and AR 420-1 prescribes the policies, procedures, and guidelines on the primary and secondary crash alarm system. TC 3-04.16 prescribes policies, procedures, and guidelines for air crash search and rescue (ACSR) and local crash grid maps.

1-82. The ATC chief/facility chief will develop procedures for each position in the event of an aircraft accident/incident. These procedures will be published in the FTM and be contained within the separate operating position files/binders.

TELEPHONE LINES

1-83. When possible, all non-commercial telephone lines to installation ATC facilities will terminate in the communications console key system. Commercial telephones should be provided on separate instruments.

1-84. Direct telephone lines are required between ATC facilities. Their use will be restricted to the relay of essential movement and control instructions and advisories. Calls on direct telephone lines are handled secondarily to the primary function of ATC services. The lines should not be used to relay information such as departure or arrival times and load messages that can be handled by other means. If an ATC facility requires immediate priority over another, it will on initial contact state, “stand by for emergency instructions.” These occurrences will be entered on DA Form 3502.

RADIO EQUIPMENT

1-85. ATC facilities are authorized to join radio nets with the crash and rescue team, airfield services, weather station, fire station, ambulance service, and security agency. To the extent possible, these radios will terminate within the communications console.

1-86. During the hours of operation, ATC facilities will continuously monitor all assigned radio frequencies to include emergency frequencies very high frequency (VHF) 121.5 and ultra high frequency (UHF) 243.0. Facilities sharing radios will establish procedures to ensure one of the facilities continuously monitors these frequencies.

1-87. All ATC facilities should have transmit/receive capability on emergency frequencies 121.5 and 243.0-megahertz (MHz). When ATC facilities are collocated, they will share transmitters and receivers if services will not be degraded. If transmitters and receivers are shared, geographical area coverage will not be reduced. In addition, voice communications switches will be equipped with lockout devices to avoid inadvertent interference between facilities.
1-88. The two emergency frequencies will not be terminated on the same transmit-receive key selector of any other frequency. When a remote communications console is provided to a non-ATC facility at an airfield that has an ATC facility, only the emergency receiver will be provided.

1-89. As a minimum, two-way transmitter and receiver checks will be conducted daily on all radio frequencies with the results being annotated on the equipment checklist and DA Form 3502. These checks will also be conducted following recording equipment and other equipment repairs and normal preventive maintenance.

**NAVIGATIONAL AIDS**

1-90. All NAVAIDs must pass an FAA flight inspection before IFR operations are conducted. The procedures contained in FAA 8260.3 will be used to construct a precision or non-precision approach that will service the terminal area. The following actions will be accomplished to prepare for a flight inspection:

- Provide accurate facility data for new or relocated facilities.
- Develop an LOA concerning the airspace used for the approach procedure.
- Assign the best-qualified controller available.
- Establish communications on a single dedicated frequency.
- Ensure all facility equipment is calibrated according to applicable manuals.
- Ensure certified maintenance personnel will be available to make corrections and adjustments.
- Provide transportation to move flight inspection equipment and personnel.
- Ensure all personnel are familiar with FAAO 8200.1 and FAAO 8240.41.

**MONITORS**

1-91. The approach control facility normally is designated the primary NAVAID monitoring facility. At locations without an approach control, the TWR is designated the primary NAVAID monitoring facility.

1-92. Some ATC facilities do not operate continuously. If the NAVAID is to remain on the air continuously, another facility or agency will be assigned monitoring responsibility. This facility or agency will also provide continuous manning and respond quickly to the call for maintenance personnel. In addition, it will establish written procedures concerning equipment outages and submission of NOTAMs.

1-93. If another facility or agency is not available to perform this function, the IFR supplement must indicate that the particular NAVAIDS are unmonitored when the facility is closed.

1-94. Monitors that do not provide an automatic visual or aural alarm will be checked at least once an hour. When an ATC facility is responsible for monitoring NAVAIDs, the facility chief will include monitoring instructions in the FTM. If a NAVAID monitor alarm is received, the identification feature will be checked aurally and the responsible maintenance authority notified immediately. If the alarm cannot be silenced and the identification feature cannot be heard, the NAVAID is considered inoperative.

1-95. If personnel suspect a control line or monitor failure rather than a malfunction of the NAVAID causes an alarm, they must take the appropriate action per FAAO JO 7110.65. If a malfunction is confirmed, use of the NAVAID will be discontinued. A NOTAM will be published showing NAVAIDs with inoperative monitors as unmonitored. A DOD FLIP, en route supplement, and IFR supplement will also show those NAVAIDs without installed monitors as unmonitored.

**INTERRUPTIONS AND MALFUNCTIONS**

1-96. The ATC chief/facility chief establishes procedures for reporting interruptions to NAVAIDs and malfunctions in communications and radar equipment. He ensures the timely response of maintenance personnel to a report of an interruption or a malfunction.

1-97. The on-duty SL or CIC will report any known or reported malfunction in equipment or interruption to a NAVAID to the appropriate office; for example, maintenance personnel, ARTCC, approach control facility,
and any other facility that may be affected. The malfunction or interruption is reported to the airfield division chief/commander/manager.

**Note.** Cellular telephones, Plantronics CA12CD wireless headsets, Spectralink cordless phones and other wireless devices will be powered off in all operational areas, or at any facility where ground to ground or ground to air communication is conducted.

**RECORDED MEDIA**

1-98. A facility memorandum will be developed outlining the procedures for recording and securing recorded media, and for controller/maintenance responsibilities. If the recording device is not convenient to operating areas, the facility chief and the responsible maintenance chief will develop a written agreement assigning this responsibility. All controllers and maintenance personnel will be properly trained to check the recorder and perform preventive maintenance checks and services (PMCS). This training will be annotated in the training records.

1-99. Controllers are required to monitor the quality of recordings. At the beginning of each shift, the SL or CIC will ensure all recording channels are operating properly and the results will be logged on DA Form 3502.

1-100. The facility chief and the maintenance chief will establish written procedures to ensure the recording quality is checked after all radio, recorder, or telephone equipment maintenance. These checks will be noted on DA Form 3502. At dual facilities, the ATC chief may designate one facility to make all recorder checks. This facility will have the responsibility to document the results of recorder checks on DA Form 3502.

**USE OF RECORDERS**

1-101. Controllers and maintenance personnel will use the following information for configuring, certifying, maintaining, and operating recording systems:

- Air traffic facilities will record operational communications to the maximum extent practicable.
- If combined positions are periodically split into individual positions, record them on separate channels.
- Operational voice recorders will be provided a time source using the installed Global Positioning System (GPS) network time protocol.
- Recorders may be used to monitor any position for evaluation, training, or quality control purposes.
- The ATC/facility chief will develop a facility memorandum, or LOA identifying those personnel who have access to the recording system, their access privileges, and identify a systems administrator for the recording device. The intent of this memorandum is to ensure system security and the integrity of the media being recorded.

**ASSIGNMENT OF RECORDER CHANNELS**

1-102. Assign position recording channels in the following order of priority:

- Primary:
  - Radar position.
  - Radar position.
  - LC.
  - Radar position.
  - FD (TWR).
  - FF.
  - Clearance delivery.
  - GC.
- FD (radar).
- FD (flight following).
- Coordinator.
- Supervisory.
- Primary crash line from ATC facility to local crash net.
- ATIS.
- Point to point telephone lines between ATC facilities.

1-103. After the requirements listed above are met, the remaining spare channels may be used for channel clearing and recording the primary radio frequencies. These frequencies are recorded in the following order:

- Secondary:
  - VHF and UHF emergency.
  - Approach control.
  - Departure control.
  - LC.
  - GC.
  - Pilot to dispatch positions.

MAINTENANCE/CONFIGURATION/CHECKS

1-104. FAA policy will be used to establish essential maintenance activities for digital audio legal recorder (DALR) system. FAA policy identifies the performance checks (tests, measurements, and observations) of normal operating controls and functions, which are necessary to determine whether operation of the DALR is within established tolerances/limits. This document is available on the ATSCOM homepage.

1-105. All performance and maintenance checks will be accomplished by ATS maintenance personnel with the exception of the daily checks for indications of alarm conditions on the maintenance workstation. These checks may be performed by either ATS or maintenance personnel. If ATS personnel are to conduct the daily alarm condition checks, the ATC facility chief and maintenance chief will establish a written agreement outlining the responsibilities and procedures for conducting these checks. The results of all system checks will be annotated on the FAA Form 6030-1, Facility Maintenance Log 1.

1-106. The ATC/Facility chief and maintenance chief will establish written procedures to ensure the quality of recordings are checked and documented at the beginning of each shift and after all radio, recorder, or telephone equipment maintenance. The results of these checks will be annotated on the DA Form 3502.

SOFTWARE VIRUS PROTECTION

1-107. The DALR system is a computer-based, software-driven recording system running on its own private local area network (LAN) without virus protection software; as such, it can be vulnerable to software viruses. The primary method of protection from the introduction of viruses is system isolation from any outside LAN. The system will not be connected to any external LAN administrative or otherwise.

1-108. Except for the types listed below, no other programs and/or software packages will be loaded and/or executed on any of the computer systems (logger and computer workstations) part of the DALR system (this applies to logger(s), and all computer workstations part of the DALR and the systems isolated LAN):

- Logger Software.
  - Nice administrator application.
  - Nice monitor application.
  - Nice log setup tool.
  - Nice inform.
- Workstation Software.
  - Castle rock Secure Network Management Program-computers.
- Microsoft internet explorer.
- User Installed Workstation Software.
- Microsoft office suite (Army approved version).
- WAV player utility.

RECORDED MEDIA ACCOUNTABILITY

1-109. The facility chief has custodial responsibility for recordings made on equipment furnished or maintained by the Army. When another service or agency has custodial responsibility for the recorded media, an LOA will be initiated to specify access and retention policies and procedures.

RECORDED MEDIA RETENTION-DIGITAL AUDIO LEGAL RECORDER

1-110. The DALR system will be set to retain normal day-to-day activities for 45 days. Media containing information on emergencies or alleged violations will be reconstructed and filed utilizing the “create new incident” feature of the system. If no request for transcript has been received within the allotted retention timeline, the media may be deleted. If there is a request for information, the recording will be distributed on a compact disk/digital video device (DVD) with an embedded Time stamp and retained for 30 days from time of extraction. In the event items are added to the original distribution, they will be placed on the original compact disk/DVD.

1-111. Recordings containing accident information will be retained for a minimum of six months. These recordings will be reconstructed and filed utilizing the “create new incident” feature of the system. Additionally, these recordings will be extracted as soon as possible and labeled. Recordings related to hijackings will be retained for three years. If no request for transcript has been received within six months, the data in the incident folder may be deleted and the related compact disk/DVD destroyed. When creating accident files for retention, ensure all audio starts five minutes prior to first contact and continues five minutes after the accident or last contact. For detailed information regarding aircraft accident and incident notification, investigation and reporting refer to FAAO JO 8020.16 and AR 95-30. Figure 1-1 outlines the format used for certified copies of recordings containing accident information.

<table>
<thead>
<tr>
<th>I certify that this is the original recording made in _______ (facility) _______ containing all conversation on _______ (position) at _______ (channel) pertaining to _______ accident or emergency (aircraft, ID or date).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature:</td>
</tr>
<tr>
<td>Name:</td>
</tr>
<tr>
<td>Grade:</td>
</tr>
<tr>
<td>Title:</td>
</tr>
<tr>
<td>Date:</td>
</tr>
</tbody>
</table>

Figure 1-1. Certification of recordings containing accident information

RECORDED MEDIA TRANSCRIPTIONS

1-112. The memorandum format contained in AR 25-50 is the Army standard. The required contents of the memorandum are—

- Subject.
- Recording facility.
- List of transmitting facilities.
- Facility, landline, or position being recorded.
- Date of transcription and the time covered by transcript.
- Certification.
1-113. FAAO JO 8020.11 contains detailed information and instructions for the transcription of recorded media.

RECORDED MEDIA FOR STARS AND PRECISION APPROACH RADAR

1-114. The Standard Terminal Automation Replacement System (STARS) and PAR systems are equipped with data recording devices. ATC facilities will use these devices to record all user actions, surveillance and approach data. The recorded media from these systems will be labeled, stored and handled as directed according to FAAO 6191.2.

WIND INDICATOR EQUIPMENT

1-115. Windsocks and wind cones used at Army facilities will comply with standards in FAA AC 150/5345-27. Wind sensors sensor locations will comply with standards in UFC 3-260-01. Lighting of windsock and wind cones will comply with UFC 3-535-01.

1-116. Controllers can determine estimated winds after comparing readouts from transmitters and visual observation of windsocks and wind cones. Windsock values must be known by the controllers prior to any attempt to estimate winds using visual observations of windsocks. The Beaufort Scale (see FAAO 7900.5) must be used to estimate wind speed if all other wind speed measuring instruments are out of service.

ALTIMETERS

1-117. ATC facilities will compare official altimeter reports with facility instruments at the beginning of each shift. Any difference will be posted next to the face of the instrument and recorded on DA Form 3502. The correction factor will be applied to the reading obtained from the facility instrument before the altimeter setting is transmitted to a pilot or another facility. Use of the facility instrument will be discontinued at—

- Non-precision approach locations when the correction factor exceeds ±0.05-inches of mercury.
- Precision approach locations when the correction factor exceeds ±0.02-inches of mercury.

OBTAINING OFFICIAL ALTIMETER SETTINGS

1-118. Altimeter-setting indicators inspected and calibrated according to Air Force weather service guidance may be used to obtain the official altimeter setting at locations that have no local weather service support. At facilities with no weather reporting station and only one altimeter device, the altimeter setting may be compared with values obtained from adjacent weather stations if at locations where—

- Precision Instrument Landing System (ILS) or PAR approaches are conducted, the distance to the weather station is not more than 10 nautical miles, and the wind speed is 25 knots or less.
- Non-precision approaches are conducted, the distance to the weather station is not more than 25 nautical miles, and the wind speed is 30 knots or less.

1-119. When weather conditions indicate the probability of a steep pressure gradient between the two locations or the elevation difference exceeds 1,000 feet, altimeter settings are not compared. At locations that do not meet the 10- and 25-nautical mile limitations, a mercurial barometer or altimeter-setting indicator is required to make comparisons.

ESTIMATED SETTINGS

1-120. Air traffic controllers will issue an altimeter setting as estimated according to FAAO JO 7110.65.

SECTION V – MEDICAL

1-121. Air traffic controllers will follow the medical requirements of AR 40-8 and AR 40-501 and the guidance from this publication.
MEDICAL RESTRICTIONS TO AIR TRAFFIC CONTROL DUTIES

1-122. The duties of a controller require a certain level of health status or fitness due to the nature of the high degree of responsibility toward the public. The air traffic controller medical examination (ATCME) may be completed by a flight surgeon or aeromedical physician’s assistant from any branch of the service and will be completed annually for all Department of the Army civilian (DAC)/contract ATC. Medical qualification requirements for DA Civilian ATCs are outlined in Office of Personnel Management operating manual; qualification standards for GS positions, GS-2152; and ATC series are listed in section 339.202, Title 5, CFR.

1-123. Current Office of Personnel Management standards address both application and retention for ATC. ATC medical examinations fall in the following two broad categories:

- **Initial ATCME** - performed for initial employment purposes. They are valid for up to 18 months from the date of examination.
- **Retention ATCME** - performed on ATC once in service. This is performed for re-certification for DAC and civilian ATC on an annual basis. It is generally valid for 12 months and is synchronized with the ATC’s birth month.

*Note.* Specific requirements and medical standards to be met are contained within the aeromedical technical bulletin.

1-124. FAA physicals for either category of ATC will not be accepted by the United States Army Aeromedical Activity as certification of medical fitness. Any DAC or civilian contract ATC who pursues a FAA certificate does so at their own expense unless specifically covered by their contract. A DD Form 2992, *Medical Recommendation for Flying or Special Operational Duty*, signed by a flight surgeon of any military service must be completed as part of the ATCME and serves as a recommendation to the local airfield division chief/commander/manager of the individual’s medical fitness for execution of ATC duties. Flight surgeons will not issue a DD Form 2992 based on presentation of an FAA examination or certificate. Failure to comply with the annual requirement for an ATCME or current, valid DD Form 2992 may result in medical disqualification. The signed DD Form 2992 will be maintained in the controller’s training records.

1-125. If a supervisor determines a controller’s physical or mental health is questionable, the controller will be relieved from performing ATC duties. The commander will refer the controller to a flight surgeon/medical examiner for an evaluation and a ruling. If a controller is receiving a substance or medical procedure that is likely to provoke an adverse systemic reaction, the controller will be restricted from ATC duties. The controller will not perform ATC duties until declared fit per AR 40-501. AR 40-8 addresses the factors to consider and the appropriate medical restrictions to ATC duty.

1-126. A Class II FAA medical certification is not required by DA or FAA for contract ATCs to control air traffic in DOD facilities (14 CFR 65.31, 33). The initial and subsequent determinations of medical fitness for ATC duties are made as outlined in the above-mentioned regulation. The contract will state that DA contract ATCs will meet the same medical qualification requirements as those for DA Civilians set forth in paragraphs above.
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Chapter 2

Air Traffic Control Operations

The primary purpose of the ATC system is to prevent a collision involving aircraft operating within the designated airspace. In addition to its primary purpose, the system also provides a safe, orderly, and expeditious flow of air traffic and supports the National Security and Homeland Defense missions.

SECTION I – CONTROL TOWER OPERATIONS

2-1. The ATC chief/facility chief will coordinate closely with airfield management to establish written procedures for ensuring the most efficient use of runways. Compliance with established procedures ensures positive control and coordination of personnel, ground vehicles, and aircraft on or near taxiways, runways, and landing areas. Personnel in or near these areas will maintain two-way radio communications with the control TWR to the maximum extent possible and will be familiar with TWR light gun signals.

COMMUNICATION PROCEDURES

2-2. The SL on duty is responsible for all communications emanating from the facility. The facility chief will ensure periodic checks are made to detect and prevent superfluous or unauthorized transmissions, as follows:

- The SL takes action to detect and prevent radio or telephone transmission of false or deceptive communications and obscene, indecent, or profane language. The SL is also responsible for detecting unauthorized or unassigned identifications and preventing willful or malicious interference with other communications.
- Besides normal ATC transmissions, the facility may need to transmit third-party messages about the safety of aircraft operations or the preservation of life or property. Such transmissions are authorized on ATC radio communications channels. Controller personnel or persons concerned with the emergency may handle these transmissions. Other personnel may be given access to ATC facilities radios if control instructions are not issued and their transmissions can be interrupted to continue ATC services.
- ATC facilities may relay non-ATC instructions only when no other source of communication is available and the transmissions will not interfere with ATC instructions. When it appears that such broadcasts may affect the control of air traffic, ATC personnel will immediately notify the ATC chief/facility chief.

CERTIFIED TOWER RADAR DISPLAY

2-3. Some towers are combined with full radar approach control facilities, and the controllers rotate between the tower and approach control. Under these conditions, local controllers may use certified tower display workstations or DBRITE displays for the terminal radar function if they can satisfy the FAA air traffic requirements regarding aircraft operating on runways or in the surface area. The conditions and limitations for usage will be specified in an LOA.

2-4. At locations where controllers do not rotate between the radar facility and the tower, Local controllers may use certified tower display workstations and DBRITE displays to—

- Identify aircraft and their exact location or spatial relationship to other aircraft. (This authority does not alter the visual separation procedures outlined in FAAO JO 7110.65.)
- Provide radar traffic advisories to aircraft.
- Provide directions or suggested headings to visual flight rule (VFR) aircraft as a radar identification method or as an advisory NAVAID.
Chapter 2

- Provide information and instructions to aircraft operating in the surface area.

2-5. When the above conditions and the following conditions are present, local controllers may also use certified tower display workstations and DBRITE displays to ensure separation between successive departures, arrivals, and over flights within the surface area. The additional conditions are if—

- Radar separation procedures do not require the tower to provide radar vectors.
- Local controllers have radar training and certification or qualification commensurate with their radar duties.
- A copy of the LOA was submitted to the DAR as prescribed in AR 95-2.

*Note.* The LOA must authorize the specific function and prescribe the procedures to be used. It must also prescribe the process for a transition to non-radar procedures or the suspension of separation authority in case of a radar outage.

- The procedures for giving and receiving radar handoffs or point-outs do not impair the local controller’s ability to satisfy FAA and Army ATC requirements for aircraft operation on runways or within the surface area.

2-6. The TWR facility may be delegated the responsibility for providing the services outlined in the previous paragraphs. In flight-following facilities, tower display workstations and DBRITE will provide traffic advisories and VFR radar services.

2-7. The tower display workstations and DBRITE are IFR-certifiable; at select GCA locations, it will serve as the surveillance radar.

**WEATHER**

2-8. All controllers shall complete initial qualification (Q) weather training before starting PQ training. Weather training is valid for a 12-month period and must be renewed by or prior to the anniversary month of their previous training. The ATC chief/facility chief will ensure comprehensive training is given to tower controllers by weather personnel on tower (prevailing) visibility. Tower visibility training will include—

- Definitions.
- Visibility and sector determination criteria and procedures.
- Reporting procedures.
- METARs training, to include—
  - Reading aviation weather reports.
  - Abbreviations.

2-9. The results of initial (Q) and annual training (P) will be entered on DA Form 3479 in Section II. Required entries in Section II include the date training was completed and test results if applicable. If remedial training is required, it will be completed as previously outlined, except an “R” will indicate the type of training given. (See appendix F for annotating remedial training.)

2-10. Local weather service authorities will provide a practical training program to allow air traffic controllers to take and disseminate supplemental weather observations per AR 115-10. At airfields where weather support is not available, the facility chief will contact the DAR to secure training materials from the FAA and conduct internal facility training.

**RELAY OF WEATHER OBSERVATIONS TO THE TOWER**

2-11. The local weather service will make weather observations available through automated means.

**Weather Data**

2-12. The airfield weather status (IFR or VFR) will be posted to DA Form 3502 when daily operations begin. As it changes during the day, the status is again posted to the form.
2-13. Controllers do not need to retain weather data received over recorded voice lines or automated systems. However, they will retain with the DA Form 3502, weather data received over unrecorded voice lines and data copied on notepaper. Both the observer and the controller initials will be posted on each observation received.

AUTOMATED METEOROLOGICAL OBSERVING SYSTEMS

2-14. The United States Air Force (USAF) may provide official weather observations at US Army locations worldwide using USAF-owned and certified Automated Meteorological Observing Systems (AMOSs) operating in full automated mode. USAF Operations Directorate recently issued guidance directing the USAF to operate AMOS fully automated except during periods when human augmentation or backup of AMOS is required.

2-15. The USAF will install or has installed AMOS at designated ATC controlled Army airfields (AAFs) worldwide. When commissioned, the USAF certifies AMOS (FMQ-19, FMQ-23, and TMQ-53) to meet all federal certification requirements to include FAA requirements for establishment and maintenance of Class D airspace. The National Weather Service certifies automated surface observation systems to meet all federal certification requirements where applicable.

COOPERATIVE WEATHER WATCH

2-16. The cooperative weather watch is an observation program in which air traffic controllers and other base agencies assist in monitoring weather conditions. A primary concern is the reporting of tower visibility when different from reported surface prevailing visibility, sector visibility, and local pilot reports (PIREPs). AFMAN 15-111 mandates a cooperative weather watch for USAF weather agencies. When a cooperative weather watch is mandated, all offices involved will coordinate the cooperative weather watch requirements in base/host/installation unit plans or local weather support agreement. Local weather support agreements will include, as a minimum—

- Training requirements and certification of tower personnel to provide tower visibility observations (TVOs).
- Review of tower visibility checkpoint charts (VCCs).
- Requirement for ATC controllers to make tower prevailing or sector visibility observations when visibility at usual points of observations or at tower level is less than 4 statute miles.
- Notification requirements when tower prevailing visibility differs from reported values.
- Notification requirements to the servicing radar facility.
- Procedures for reporting and relaying PIREPs.
- Procedures for reporting of weather phenomenon.

Visibility Checkpoint Charts

2-17. VCC are a means of accurately making TVOs by identifying prominent lights or objects located near the tower. All control tower facility chiefs will prepare VCCs. These charts will be used to report TWR visibility and observe changes in the reported visibility. Charts will clearly identify both day and night visibility checkpoints. The most suitable day markers are dark or nearly dark colored objects such as—

- Buildings.
- Chimneys.
- Hills.
- Tree line.

2-18. The most desirable night visibility markers are lights of moderate intensity such as—

- Television station tower obstruction lights.
- Radio station tower obstruction lights.

2-19. Checkpoint charts may be map-type charts depicting the prominent lights or objects to be used with their distances and directions from the control tower using range rings as appropriate or be high quality (color/digital) photos taken on a predominantly cloud and obstruction-free day.
Advisories

2-20. TVOs are advisories unless weather station personnel verify them or the individuals taking the observations have been certified to make official weather reports. This information may include thunderstorm location, movement, and rapidly deteriorating visibility. TWR controllers must also advise terminal radar facilities of any observed phenomena not in the current weather report.

Support to the Cooperative Weather Watch Program

2-21. TWR controllers must relay TVOs to weather station personnel to support the cooperative weather watch program. This requirement is particularly important during severe weather, and when conditions observed by non-weather personnel and those reported in the current weather observation are different. The local situation and weather observation site location influence how the weather station reports or relays information. The station will issue a new observation or include reports of differing conditions, such as runway visual range and prevailing visibility, in an official weather observation (METAR, special observation, or local). The local weather unit and the organizations to which certified non-weather personnel are assigned will establish the criteria and procedures for weather reporting. Facility chiefs will contact the nearest weather station to visit and review regulations concerning weather observation, reporting, and personnel training.

2-22. Tower facilities will perform TVOs at the request of the local weather station or airfield division chief/commander/manager. Facilities that perform TVOs will develop a LOA between the ATC facility and weather station. The LOA will state the weather elements to be reported, responsibilities, and coordination procedures. Air Force weather stations, for example, normally publish these requirements in regulations or supplements.

2-23. Tower personnel will—

- Notify the surface-based observer when the tower prevailing visibility decreases to less than or, increases to equal or exceed, four miles.
- Report all changes of one or more reportable values to the surface-based observer when the prevailing visibility at the tower or the surface is less than four miles.

2-24. Tower personnel will record on a separate tabulation sheet, or by transmission over a recorded landline, the following information for each control TVO:

- Time of observation.
- Prevailing visibility at the tower level.
- Remarks (such as visibility in different sectors).
- Observer's initials.

UNMANNED AIRCRAFT SYSTEMS

2-25. The following procedures will be applied at all non-joint use DOD controlled airfields with approved certificate of authorization (COA). These general procedures are—

- If equipped, unmanned aircraft (UA) will operate with full lighting and transponders.
- Deconfliction of unmanned aircraft system (UAS) and transient aircraft will be specified in the COA. Possible methods include—
  - Altitude restrictions for UAS.
  - Visual holding points with specific lateral and vertical limits.
  - Use of ground observers.
- Mission commander will advise ATC of initiation and completion of flight operations.
- Radio checks between UAS pilot/operator and ATC will be conducted prior to operations.
- All communications between ATC and UAS pilot/operator will be accomplished on—
  - Designated primary and/or alternate frequencies.
  - Secondary/backup communications.
  - Telephone connectivity will be pre-coordinated.
UAS operations will be conducted under VFR according to service regulations and CFRs. Increased ceiling and visibility requirements may be applied.

**AIR TRAFFIC CONTROL PROCEDURES**

2-26. The following procedures will be adhered to by ATC during UAS operations:

- **Description of aircraft types.** Describe UAS to other aircraft by stating UA.
- **ATIS procedures.** Make a new recording when UAS operations are in effect or have terminated for the day.
- **Sequencing and separation.** UAS pilots cannot be instructed to follow another aircraft.
- **Simultaneous same direction operations.** All UAS will be treated as “other” aircraft.
- **Same runway separation.** All UAS will be treated as category III aircraft.
- **Use of visual separation.** Use of visual separation is not authorized.
- **Special visual flight rules (SVFR).** SVFR operations for UAS are not authorized.
- **Preventive control.** May be applied according to FAAO JO 7110.65.

**Transient Aircraft Procedures**

2-27. ATC will keep the UAS pilot/operator apprised of any known transient aircraft that may impact operations. The UAS pilot/operator will take all necessary actions to maintain lateral and vertical separation. ATC should provide UAS pilot/operator recommended altitudes or direct them to predetermined points (UAS zones) to ensure deconfliction.

**Wake Turbulence Advisories**

2-28. ATC will apply the following procedures:

- Issue cautionary wake turbulence advisories, and the position, altitude and direction of flight to the UAS pilot/operator landing behind all manned aircraft.
- Wake turbulence rules cannot be waived by UA pilot/operator.

**No Radio Aircraft Procedures**

2-29. ATC will apply the following no radio procedures:

- ATC will notify UAS pilot/operator of any known no radio (NORDO) aircraft.
- ATC will broadcast on emergency frequencies when a NORDO aircraft is present to establish two-way radio communications with the NORDO aircraft.
- UAS pilot/operator, assisted by ATC will determine the best method to separate UAS and NORDO aircraft. Example methods include—
  - UAS may proceed to UA zone and hold.
  - Cease operations if it will not aggravate the situation.
  - Altitude deconfliction.

**Emergency Procedures**

2-30. ATC will apply the procedures listed in chapter 10 Section 1 of FAAO JO 7110.65. The safety of manned aircraft will take precedence over UA in an emergency.

2-31. If primary radio communications between UA pilot/operator and ATC are lost, UA pilot/operator or ATC will be notified immediately via predetermined alternate communications method. Failure to establish and maintain radio communication between UA pilot/operator and ATC will require termination of UA operations.

2-32. If lost link occurs, the UAS pilot/operator will immediately notify ATC with the following information:

- Time of link loss.
- Last known position.
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- Altitude.
- Direction of flight.
- Confirmation of execution of lost link procedures.
- Confirmation of visual contact with UAS.

Note. UAS lost link is an emergency, but may not require crash rescue services.

2-33. In the event of a lost link, lost communications between UAS and ATC or lost communications between UAS pilot/operator and observer, ATC will—
- Cease aircraft launches until status of affected UAS is determined.
- Recover other UAS as appropriate.
- Issue advisories and ATC instructions as appropriate to ensure the safe operation of all aircraft.

EMERGENCY SECURITY CONTROL OF AIR TRAFFIC

2-34. Emergency security control of air traffic (ESCAT) is described by 32 CFR Part 245 as emergency conditions threatening national security, but do not warrant the declaration of a defense emergency, air defense (AD) emergency, or the control of NAVAIDs. Detailed responsibilities and conditions for implementation of ESCAT are contained in 32 CFR Part 245.

2-35. The appropriate military authority will take the following actions:
- Notify or coordinate, as appropriate, the extent or termination of ESCAT implementation with Department of Transportation and Department of Homeland Security.
- Disseminate the extent of ESCAT implementation through the Noble Eagle Conferences and the Federal Aviation Administration Domestic Event Network.
- Specify what restrictions are to be implemented. Some examples of restrictions to be considered include—
  - Define the affected area.
  - Define the type of aircraft operations authorized.
  - Define the routing restrictions on flights entering or operating within appropriate portions of the affected area.
  - Define restrictions for the volume of air traffic within the affected area using the emergency air traffic priority list (EATPL) (paragraph 2-38) and security control authorizations, as required.
  - Set altitude limitations on flight operations in selected areas.
- Restrict operations to aircraft operators regulated under specified security programs such as—
  - Aircraft operator standard security program and the domestic security integration program.
  - Revise or remove restrictions on the movement of air traffic as the tactical situation permits.
  - Air Traffic Control Search Coordination Center will direct appropriate ARTCCs and combined/center radar approach controls to implement ESCAT restrictions as specified by the appropriate military authority.

2-36. ARTCCs and combined/center radar approach control will take the following actions when directed to implement ESCAT:
- Provide the appropriate military authority feedback through the Air Traffic Control Search Coordination Center on the impact of restrictions and when the restrictions have been imposed.
- Impose restrictions on air traffic as directed.
- Disseminate ESCAT implementation instructions to US civil and military ATC facilities and advise adjacent ATC facilities.

2-37. US civil and military ATC facilities will—
- Maintain current information on the status of restrictions imposed on air traffic.
• Process flight plans according to current instructions received from the ARTCC. All flights must comply with the airspace control measures in effect, the EATPL, or must have been granted a security control authorization.
• Disseminate instructions and restrictions to air traffic as directed by the ARTCCs.

EMERGENCY SECURITY CONTROL OF AIR TRAFFIC PRIORITY LIST

2-38. When ESCAT is implemented, a system of traffic priorities may be required to make optimum use of airspace, consistent with AD requirements. The EATPL is a list of priorities that may be used for the movement of air traffic in a defined area. Priorities will take precedence in the following order:

• Priority One:
  ▪ President of the US.
  ▪ Prime Minister of Canada.
  ▪ Respective cabinet or staff members essential to national security.
  ▪ Aircraft engaged in active continental defense missions.
  ▪ Military retaliatory aircraft.
  ▪ Airborne command elements.
  ▪ Anchor Annex flights.

• Priority Two:
  ▪ Forces being deployed or in direct support of US military offensive and defensive operations including the use of activated Civil Reserve Air Fleet aircraft as necessary, and/or other US and foreign flag civil air carrier aircraft under mission control of the US military.
  ▪ Aircraft operating in direct and immediate support of strategic missions.
  ▪ Search and rescue aircraft operating in direct support of military activities.
  ▪ Aircraft operating in direct and immediate support of special operations missions.
  ▪ Federal flight operations in direct support of homeland security, law enforcement agencies and aircraft performing security for high threat targets such as nuclear power plants, dams, chemical plants, and other areas identified as high threat targets.

• Priority Three:
  ▪ Forces being deployed or performing pre-deployment training/workups in support of the emergency condition.
  ▪ Aircraft deployed in support of continental United States installation/base defense (aircraft operating in direct/immediate security support or deploying ground forces for perimeter defense).
  ▪ Search and rescue aircraft not included in priority two.
  ▪ Flight inspection aircraft flights in connection with emergency restoration of airway and airport facilities in support of immediate emergency conditions.
  ▪ Continental United States airborne reconnaissance for damage assessment (CARDA) missions in support of immediate emergency conditions.

• Priority Four:
  ▪ Dispersal of tactical military aircraft.
  ▪ Dispersal of US civil air carrier aircraft allocated to the Civil Reserve Air Fleet Program.
  ▪ Repositioning of FAA/DOD/Department of National Defense (DND) flight inspection aircraft.
  ▪ Flight inspection activity in connection with airway and airport facilities.
  ▪ Specific military tactical pilot currency or proficiency in support of homeland defense.
  ▪ Military tactical aircraft post-maintenance test flights.
  ▪ Federal aircraft post maintenance check flights in support of homeland security.
 Priority Five:
  • Air transport of military commanders, their representatives, DOD/DND-sponsored key civilian personnel, non-DOD/DND or other federal key civilian personnel who are of importance to national security.
  • Dispersal of non-tactical military aircraft for their protection.
  • Aircraft contracted to and/or operated by federal agencies.

 Priority Six:
  • State and local law enforcement agencies directly engaged in law enforcement missions.
  • Flight operations according to approved federal and state emergency plans.
  • Lifeguard and medical evacuation (MEDEVAC) aircraft in direct support of emergency medical services.
  • Flight operations essential to the development, production, and delivery of equipment, personnel, materials, and supplies essential to national security.
  • Other essential CARDA missions not covered in priority three.

 Priority Seven:
  • Other military flight operations.

 Priority Eight:
 Other flight operations not specifically listed in priorities one through seven

 NIGHT VISION SYSTEM OPERATIONS

 2-39. Tower facilities using night vision systems will establish a training program for their use. This program will include—
  • Identification of aircraft using night vision systems.
  • Night vision device (NVD) routes.
  • Traffic density and restrictions.
  • Hours of operation.
  • Emergency procedures.
  • Weather requirements.
  • Nonparticipating traffic.
  • Aircraft lighting (lights out or dim mode).
  • Publication of a NOTAM, if required.

 MOBILE CONTROL TOWERS

 2-40. Mobile control towers shall be used at installation airfields—
  • To provide services during a move from an old tower structure into a new tower.
  • When repairs, rehabilitation, or installation of new equipment make the tower structure uninhabitable.
  • During periods of natural emergency.
  • During periods of tactical training to enable the skill progression of military personnel.
  During the evaluation of ATC military formations and personnel for the execution of Aviation Resource Management Surveys (ARMS) and other collective aviation exercises.

 SECTION II – RADAR OPERATIONS

 2-41. Radar service will be provided only when the controller has a suitable target and is satisfied that the presentation and equipment performance are adequate for the service provided.
DAILY PERFORMANCE CHECKS

2-42. Radar controllers determine if the quality of radar display is satisfactory for ATC purposes. Radar performance quality is determined by comparing identified targets against data obtained during the commissioning flight inspection. Controller and certified maintenance personnel may also determine the quality of the radar display jointly through minimum performance criteria. Radar controllers will be familiar with the commissioning flight inspection and minimum performance data. The facility chief will make this information available to the controllers.

2-43. Controllers will complete the necessary radar preference adjustments at the beginning of each workday or as soon as practicable thereafter. The daily radar performance check will be part of routine equipment checks. Controllers will accomplish this check once each shift, unless lack of traffic makes it impossible. For radar performance checks, airport surveillance radar (ASR) systems will conform to the following tolerances:

- **Coverage.** A usable target return will be maintained along the entire airway/route or arrival/departure control route for which radar service is provided. Tracking accuracy along these routes will be within the fix/map accuracy. Radar services for arrival or departure routes exist between the normal handoff point and a point one-half mile from the end of the runway.

- **Fix/map accuracy.** Radar accuracy must be such that reporting aircraft are within a circular area about the fix. The radius of this area is three percent of the fix-to-station distance or 500 feet (1,000 feet for the Air Traffic Control Radar Beacon System [ATCRBS]) whichever is greater. Tolerances are not assigned for moving target indicator.

**Note.** Digital Terminal Automation Systems conduct continuous self-monitoring of alignment accuracy; therefore, controller alignment checks are not required.

DISPLAY INDICATORS

2-44. Radar approach, departure control, and VFR radar advisory functions are normally conducted from a radar approach control. A tower display workstation or a DBRITE display may be used. Radar approach and departure control functions may be performed from the tower cab if—

- Not more than two radar-operating positions are required, and DBRITE display indicators are used on a permanent basis.

- More than two operating positions are required, and DBRITE display indicators are installed on an interim basis pending the establishment of a radar approach control.

- Temporarily, when radar display indicators other than DBRITE display indicators are installed.

2-45. If a scan conversion DBRITE is used, the standard installation will consist of one operational and one standby scan conversion unit. The range and center selected for the master DBRITE display will be the same on all slaved display indicators.

2-46. If the radar operating positions concerned require individual beacon decoding, each DBRITE display position will need a separate scan conversion unit. A DBRITE display installed in the tower cab for LC will be positioned where it can be viewed easily from the local controller’s normal sitting or standing position. At least one direct-view indicator must be retained if the surveillance-approach capability would be lost when only the scan conversion DBRITE display is used.

AUTOMATION PROGRAM CHANGES

2-47. Facility chiefs of automated facilities will review each site program bulletin (terminal) issued by FAA ATS or the US Air Force and local program patches to determine their impact on operations and procedures. When necessary, a facility directive will be issued to describe functional changes and resulting procedural changes. When a facility has a DBRITE hosted by an FAA or Air Force radar automation system, the facility chief will coordinate with the host facility chief to determine the impact of a site program bulletin.
AUTOMATIC ACQUISITION AND TERMINATION AREAS

2-48. The facility chief will—

- Establish automatic acquisition areas for arrivals and over-flights at ranges that permit automatic acquisition of targets before the ARTCC/Automated Radar Terminal System (ARTS)-to-ARTS automatic handoff area when the center is in the radar data processing mode.
- Coordinate with adjacent automated facilities to ensure computer handoffs will be initiated only after the aircraft are within their facility automatic acquisition area.

Note. Coordination may not be feasible because of airspace assignment. Therefore, a LOA will prescribe the use of an appropriate procedure according to FAAO JO 7110.65 to confirm the identity of all aircraft handed off before ARTS acquisition.

- Establish automatic acquisition areas for departing aircraft one mile or less from the end of the runway.
- Establish automatic termination areas for arriving aircraft one mile or less from the runway threshold.
- At satellite airfields, establish automatic termination areas for arriving aircraft at minimum radar coverage range or altitude, whichever is greater.
- Prescribe, in an LOA, the operating position responsibility for determining if an automatic acquisition of a departure track has occurred. Distances greater than those specified above may be authorized when operational conditions dictate. FAA concurrence may be obtained through the DAR.

AIR TRAFFIC CONTROL RADAR BEACON SYSTEM

2-49. The FTM will specify the discrete codes assigned to each operating position from the code subsets allocated to the facility. The ATC chief/facility chief will develop local procedures, operating instructions, and training materials to standardize intra-facility operations of the ATCRBS. Before the ATCRBS is used, its operational status will be verified. When the system is released to maintenance technicians, ATCRBS data will not be used and the affected facilities will be informed of scheduled and unscheduled shutdowns.

RADAR MAPPING

2-50. Facility chiefs will coordinate with adjacent radar facilities and the responsible authority for flight inspections to ensure the accuracy and adequacy of common reference points on radar maps when they are used to provide ATC services. To increase operational efficiency, data on video maps should be limited to—

- Handoff points.
- Reporting points.
- Major obstructions.
- Range accuracy marks.
- Airfields and heliports.
- Airway/route centerlines.
- No fly and sensitive areas such as power plants and dams.
- Hospital emergency landing areas.
- Approach aids (RNAV).
- Special-use tracks such as scramble, recovery, and standard instrument departure.
- Runway centerline extensions to a minimum of six miles.
- Prominent geographic features such as islands and mountains.
- Minimum vectoring altitude (MVA) in hundreds of feet (for example, 25 equals 2,500 feet).
- Boundaries such as controlled special-use areas, terminal buffer areas, or outer fix holding-pattern areas.
Airports immediately outside the area of jurisdiction but within the airspace used to receive radar handoffs and depicted by the facility having jurisdiction over the airspace.

2-51. The guidance in the previous paragraph will assist controllers in making emergency airport recommendations when in-flight emergencies occur near facility boundaries. There is no intent to establish criteria for airfield depiction. Because facilities having jurisdiction depict airfields on their video maps, those same airfields will be depicted on the adjacent facility video map. FAAO JO 7110.65 provides additional information on airfield depiction.

AIRPORT SURVEILLANCE RADAR

2-52. To provide surveillance approaches, ASR indicators will display an electronic cursor as a reference to the runway centerline extended. This centerline reference will be extended to a minimum of six miles or the final approach fix (FAF) whichever is greater. The facility chief will prepare a chart with recommended altitudes for surveillance approaches. This chart will be maintained in the facility and made readily available to controllers.

MINIMUM SAFE ALTITUDE WARNING AND CONFLICT ALERT

2-53. Minimum safe altitude warning (MSAW) is a software function of the STARS designed to generate an alert when an associated aircraft with Mode-C is at, or predicted to be at, an unsafe altitude. MSAW monitors aircraft for terrain and obstacle separation and will generate an alert, both aural and visual, on the display of the air traffic controller. MSAW consists of two detection components; the general terrain map and the approach path monitor. The chief is authorized to inhibit conflict alert at specific operating positions, if advantageous to operations.

2-54. MSAW digital terrain maps (DTMs) will be kept current. The DAR will ensure FAA regional airspace branches furnish all automated radar facilities copies of newly received FAA Form 7460-2, Supplemental Notice. The DAR will also ensure all automated radar facilities receive emergency notices of the erection of structures 200 feet or more above ground level and lie within 60 nautical miles of the radar site. To keep DTMs current, automated radar facilities also require copies of the National Flight Data Digest that contain information pertinent to that facility.

2-55. The ATC chief/facility chief will ensure FAA Form 7460-2 are reviewed and the appropriate corrections made to the DTMs. He will also ensure the magnetic variation of the facility DTMs coincides with the magnetic variation of the facility radar video and geographical maps.

2-56. A DTM is constructed to align with the radar antenna, which has been offset for magnetic north. Therefore, any change in antenna offset will result in a corresponding change in the relative positions of the terrain points and obstacles used to determine DTM bin-altitude assignments. This will require, not only generating and verifying a new DTM, but also readapting the MSAW and conflict alert databases to coincide with the changed declination. These databases would include, for example, airport areas, inhibit volume areas, and capture boxes.

MAGNETIC VARIATIONS OF VIDEO, GEOGRAPHICAL, AND MINIMUM SAFE ALTITUDE WARNING DIGITAL TERRAIN MAPS

2-57. Permanent echoes are the primary references for verifying radar antenna alignment. The facility chief will ensure the magnetic variations of radar video, geographical, and DTMs coincide. The accuracy of new or modified digital maps will be verified by using targets of opportunity that fly over displayed fixes, NAVAIDs, and so forth. Discrepancies will be documented showing the observed direction and displacement. If any discrepancy cannot be corrected or if the results obtained from targets of opportunity are not satisfactory, the facility may request a flight inspection through the DAR.
FUSION

2-58. Fusion provides the capability of receiving surveillance reports from multiple sensors (Radar, ADS-B, WAM) and of combining those surveillance reports into a single track for each aircraft that will generally provide more rapid track initiation and higher update rates, and potentially more accurate position and velocity estimates, than could be achieved with any of the individual sensors. Fusion is the equivalent of the current single-sensor radar display.

2-59. CBI training along with FAA Federal Notice(s) identifies user responsibilities for applying separation of fused targets. Facility Managers shall ensure that controllers complete the CBI before providing Air Traffic Control Services from a fused display. The information contained within the CBI is perishable. Therefore, managers should ensure controllers complete this training within 30 days of activating fused displays.

MOBILE RADARS

2-60. Mobile radars shall be used at installation airfields—
- During periods of natural emergency when radar facilities become uninhabitable or during other extended equipment outage periods.
- During periods of tactical training to enable the skill progression of military personnel.
- During the evaluation of ATC military formations and personnel for the execution of Aviation Resource Management Surveys (ARMS) and other collective aviation exercises.

SECTION III – AIRSPACE INFORMATION CENTER OPERATIONS

2-61. Flight following is a mission set with the operation of an airspace information center. Flight following is the observation of the progress of aircraft identified by radar or reports at predetermined times or geographic points. The aviator provides the primary navigation information and the controller receives and correlates the aircraft identity with the appropriate geographic position. Flight following is also a service that may be used to provide pilot briefings and en route communications and to assist aircraft in emergencies. In addition, it may be used to issue and relay ATC clearances and aviation weather information, monitor NAVAIDs, and provide a point-of-flight watch.

RESPONSIBILITIES

2-62. Installation commanders should review their local airspace management measures and determine if an Army AIC facility is required for flight safety in their cantonment areas, training areas, and ranges. Installations should take the following actions to evaluate existing methods of airspace management or to develop and implement additional airspace/aircraft procedures:
- Determine overall requirements for airspace management training based on the number of aircraft.
- Establish and coordinate an air route system with the installation plans and training office, assistant Chief of Staff, G-3, G-3 air, AT&A officer, and other key players in the airspace management arena.
- Establish routes to move aircraft to/from/through cantonment areas, training areas, or ranges.
- Ensure routes of flight do not cross/join or have two-way traffic at the same altitude, or establish procedures to preclude conflict.
- Ensure a common frequency for aircraft using the same routes of flight or training areas.
- Establish adequate reporting points that are easily identifiable and not located in or near brightly lighted or populated areas.
- Establish area, and subdivide free-play areas for mission training based on the overall training/airspace requirements, number of aircraft, and type of training.
- Number, letter, or name subdivided areas and depict them on the installation maps.
- Schedule free-play training areas in advance for specific unit training.
- Establish control procedures that preclude conflict on ingress/egress routes where chokepoints may exist.
Establish separate routes of flight for NVD/nap-of-the-earth (NOE) training and operations.
- Ensure NVD/NOE routes have easily identifiable start and release points.
- Establish procedures to preclude the mixing of lighted and unlighted aircraft.
- Establish the maximum allowable density for aircraft in each free-play training area, and specify the data in the installation SOP.

2-63. AIC facilities will provide communication and control of corridor feeder-route systems, chokepoints, crossing corridors, and transition areas in cantonment areas, training areas, and ranges. In addition, they will—
- Provide a common frequency.
- Issue advisories that allow pilots to separate their aircraft from other aircraft and activities or adverse weather that may endanger the aircraft.
- Monitor the flight progress of all participating aircraft within the facility area of responsibility.
- Advise other area users of aircraft activity that may affect, or conflict with, the mission or activity.
- Provide assistance during emergencies.
- Assist with search and rescue efforts, as needed.

PROCEDURES

2-64. The procedures developed for conducting day-to-day operations of an AIC facility depend on a number of circumstances. Local requirements govern exact operational procedures. However, the number and types of operating agencies and the activities in the facility area influence these procedures. Installations needing assistance in determining requirements for facility personnel and equipment will submit a facility request through their ACOM/ASCC/DRU/ARNG to ATSCOM (see AR 95-2 for blank form and procedures). The procedures and requirements outlined below establish a minimum standard and will apply to all Army AIC facilities.

2-65. Each facility will have an up-to-date map of its area of responsibility. Each map will depict the following areas and routes:
- Explosive ordnance disposal/hazardous cargo route.
- Impact areas.
- Firing points.
- NAVAIDs.
- Air defense identification zones (ADIZs) and no-fly areas.
- Prominent obstructions.
- NOE, NVD, and UAS routes.
- Mandatory reporting points.
- Radio and radar blind spots.
- IFR recovery airfields and landing areas.
- Restricted/prohibited areas.
- Aircraft entry and exit points.
- Changeover points.
- Corridors, transition areas, training areas, and ranges.
- The same grid system as other area ATC and search and rescue facilities.

2-66. The flight progress of participating aircraft will be monitored, and the maximum time between position reports will be 30 minutes. Less time may be required depending on the type, length, and area of routes such as an NOE route.

2-67. The facility’s area of responsibility will be divided into as many subareas as necessary to simplify recognition and reporting. Each area will be lettered, numbered, or named. The boundaries of these subareas, such as rivers, roads, and power lines, should be easily recognized from the air.
2-68. Procedures will be developed to ensure the timely receipt and dissemination of area weather information. Each facility should be electronically connected to the same weather dissemination equipment as in other area ATC facilities.

2-69. Procedures will be developed between the AIC facility and other area ATC facilities to ensure timely control information is passed. LOAs will establish procedures concerning hand-offs, control transfers, flight plans, and arrival and departure times.

2-70. The facility should have the capability of communicating with other ATC facilities and agencies that use or operate within the facility area of responsibility. Standard ATC radio and interphone phraseology will be used in all facility communications.

2-71. The facility area and airspace is determined by local, host-nation, post, camp, or station requirements. The area and airspace may or may not contain a restricted or prohibited area, overlap, underlay or join another ATC facility area or airspace. Whether a facility joins another ATC facility area or airspace is determined by local requirements, equipment, and agreements. FAAO 7400.2 and FAAO JO 7610.4 contain additional information on the procedures for handling airspace matters and special military operations.

MOBILE AIRSPACE INFORMATION CENTERS

2-72. Mobile AICs shall be used to support installation airspace—

- During periods of natural emergency when ATC facilities become uninhabitable or during other extended equipment outage periods.
- During periods of tactical training to enable the skill progression of military personnel.
- During the evaluation of ATC military formations and personnel for the execution of Aviation Resource Management Surveys (ARMS) and other collective aviation exercises.
Chapter 3

Air Traffic Controller Training

The FTP provides standardization and guidance in conducting facility training. The FTP guides newly assigned personnel through an established program of instruction to become facility-rated. Each facility chief will develop a FTP based on established training time limits according to AR 95-2.

SECTION I – FACILITY TRAINING PROGRAM

3-1. The program will include the knowledge and skill requirements outlined in the 14 CFR, Part 65 for CTO ratings or FAAO 7220.1 for all other ratings. The program also includes a facility training manual, tests, and appropriate evaluations as outlined in this training circular.

TYPES OF TRAINING

3-2. The installation FTP consists of three types of training (qualification, proficiency, and remedial).

QUALIFICATION

3-3. Newly assigned personnel receive qualification training before they can obtain a facility rating. This training is also given to facility-rated controllers when new procedures are instituted, new publications are published, or new ATC equipment is installed. This training will be annotated in Section II and III (as appropriate) of DA Form 3479.

PROFICIENCY

3-4. Facility-rated or PQ controllers are given proficiency training to remain current and proficient on ATC policies, procedures, and equipment. This type of training includes but is not limited to weather recertification, changes to ATPs, ARs, FMs, TCs, handbooks, and operational procedures. Proficiency training will be annotated in Sections II and III (as applicable) of DA Form 3479.

REMEDIAL

3-5. Remedial training will be given to controllers who have shown they are no longer qualified at a control position for which they were previously qualified for, failure of any portion of the biennial skills evaluation, and trainees who show deficiency in previously covered or tested material. This training is given to correct a demonstrated weakness and may consist of—
   ● Classroom instruction.
   ● Additional time on the position under direct supervision.
   ● Simulation exercises.
   ● Or any combination of the above.

3-6. The facility chief determines the time limits for the controllers receiving remedial training. This training will be annotated in Section II of DA Form 3479. The reason for remedial training, its contents, and time limits will be annotated in Section III.

TRAINING PHASES

3-7. The following are four training phases associated with the facility training program:
INDOCTRINATION

3-8. All newly assigned controllers begin the FTP with this phase. The indoctrination phase consists of—

- A briefing on what is expected of the trainee.
- An introduction to AR 95-2.
- Discussion of training time limits.
- Issuance of the FTM.
- A comprehensive review of chapter one of the FTM and a general review of the remaining chapters.
- A review of their FTP schedule.
- A tour of the ATC facility and other airfield facilities.
- A verification of ATCS/CTO card and certificate of CTO grades.
- A written examination on chapter one of the FTM.
- Verification of valid flight physical.

Note. The trainee must successfully complete the written examination before entering the primary knowledge phase of training.

PRIMARY KNOWLEDGE

3-9. This phase teaches the general subjects the trainee needs prior to training at an operating position. This phase ends with written closed book examinations on those chapters deemed necessary by the facility chief for the trainee to operate effectively during the position qualification phase of training. As an example, the facility chief for a tower FTP may decide chapters two through eight are necessary prior to beginning position training within the position qualification phase. Those chapters deemed appropriate for the primary knowledge phase of training must be identified within the FTP and outlined in Section II of DA Form 3479 under primary knowledge.

POSITION QUALIFICATION

3-10. In this phase, the trainee receives hands-on training at each position with written, oral, and practical evaluations on the FTP requirements. The trainee is then evaluated on each operating position, and the results are recorded on DA Form 3479-1 and Section II and III (if applicable) of DA Form 3479.

3-11. Position qualification training should begin at the least complex control position and advance to the most complex. To become PQ at a control position the trainee must complete all FTP requirements applying to that position. A satisfactory evaluation must be received on DA Form 3479-1 with a comment provided in the “evaluators’” section reflecting that the requirements of that position have been met and the trainee is PQ. This evaluation must be written by the ATC/facility chief, training supervisor/specialist, shift leader, or examiner and recorded in Section II and III (if applicable) of DA Form 3479.

FACILITY RATING

3-12. A trainee PQ on all operating positions will be given a pre-FAA/ATCS facility rating examination. This written examination will consist of 50 to 100 questions covering the skills and knowledge requirements of Title 14 CFR Part 65 or FAAO 7220.1 for the rating desired. The questions will focus primarily on those topics the trainee must know to operate as a controller at the facility assigned. A failed examination returns the trainee to classroom study, re-examination, and is annotated in Sections II, III of DA Form 3479.

3-13. Once the pre-FAA exam is complete, the trainee will be given a final FAA/ATCS facility rating examination and evaluated by the ATCS/CTO examiner. The written, oral, and practical evaluation for facility rating will be annotated in Section II and III of DA Form 3479. The results of the practical evaluation will be recorded on DA Form 3479-1. This evaluation will be maintained in DA Form 3479 for one calendar year. The written examination will consist of 50 to 100 questions on topics as outlined in Title 14 CFR Part 65 or FAAO 7220.1 and other areas deemed appropriate by the examiner for the facility rating being sought.
A failure of this examination, returns the trainee to classroom study and rescheduling of the examination. This failure is annotated in Sections II and III of DA Form 3479.

ADMINISTRATION AND MANAGEMENT TRAINING

3-14. Administration and management training is an ongoing program wherein supervisors continuously train subordinates to assume supervisory positions. Administration and management training will culminate in a written examination of at least 25 questions. As a minimum, this training will include—

- Chapter 13 of the FTM.
- AR 95-2.
- 14 CFR parts 65.31 to 65.50.
- FAAO 7220.1.
- Chapters one, two, and three of this TC.

3-15. The administrative management exam will be administered prior to assuming the duties of CIC, SL, ATC training supervisor/specialist, or facility chief. All training and test results will be entered into Sections II, III, (as appropriate) of DA Form 3479.

FACILITY TRAINING MANUAL

3-16. The FTM is a locally prepared publication. The facility chief is responsible for its preparation, content, and quality. The quality of the FTM has a direct bearing on the effectiveness of a FTP. FTMs will be reviewed, rewritten, and/or updated at least annually. A memorandum will be attached to the front of each FTM with the date, statement of review or update, and the facility chief’s signature. This memorandum will be created even if no changes are made.

3-17. The FTM is used for facility rating preparation, remedial and proficiency training. The manual also serves as a reference. Charts, maps, photographs, and drawings in the FTM make the information more understandable.

3-18. At least three copies of the FTM will be maintained at a facility. Additionally, one copy will be sent to the quality assurance office (if applicable) where it will be maintained on file. The facility will maintain additional copies for each trainee to use.

3-19. The chapters or portions of chapters in the FTM that do not apply to a particular facility may be marked “not applicable” or to be used as determined by the facility chief. The facility chief may choose to include those chapters that apply to a collocated or adjacent facility to familiarize controllers with that facility. Trainees will not be tested on chapters that do not apply to the rating being sought.

SECTION II – BIENNIAL SKILLS EVALUATIONS

3-20. All rated controllers will be administered biennial skills evaluations consisting of at least a 50 question written test comprised of topics from all ratings held and a practical evaluation with direct supervision on all positions of the facilities in which they are certified and annotated on DA Form 3479-1. In ARAC facilities, the practical evaluation may be conducted on the most complex radar sector(s) and PAR/flight following positions when established within the facility. Skills evaluations may be administered individually within the controller’s anniversary month of their facility rating or during a prescribed month for all rated controllers. The facility chief will establish the evaluation time period through a facility memorandum.

Note. Controllers exceeding the biennial period for skills evaluations will not operate in a facility until successfully completing both the written and practical portion of the biennial skills evaluation.

3-21. The written test portion of the skills evaluation may be given open book and should consist of the following topics:

- TWR facilities:
- Weather affecting flight.
- TWR visibility procedures.
- Aircraft equipment failure.
- Hijacking.
- Flight emergencies.
- Transitioning, handling, and separation of special flight.
- Safety alerts.
- Traffic advisories.
- Wake turbulence.
- Line up and wait procedures.
- Locally developed operating procedures.
- Bird activity information.
- Intersection departure procedures (DPs).
- IFR clearance procedures.
- SVFR procedures.
- Same runway separation procedures.
- Simultaneous arrival/DPs.
- Intersecting runway procedures.

- Radar facilities:
  - Weather affecting flight.
  - Hijacking.
  - Flight emergencies.
  - Traffic advisories.
  - Wake turbulence.
  - Locally developed operating procedures.
  - Bird activity information.
  - Inadvertent instrument meteorological conditions formation breakup procedures.
  - Airspace intruder training.
  - Tracked and untracked targets (depending on equipment resource capability).
  - Mode C and non-Mode C equipped targets.
  - Airspace violators who have established two-way radio communications and violators who have not established two-way radio communications.
  - Lost aircraft orientation.
  - Radar identification procedures.
  - Radar handoff procedures.
  - Non-radar procedures.

- AIC facilities:
  - Bird activity information.
  - Inadvertent instrument meteorological conditions formation breakup procedures.
  - SVFR procedures.
  - Weather affecting flight.
  - Aircraft equipment failure.
  - Hijacking.
  - Flight emergencies.
  - Safety alerts.
  - Traffic advisories.
Locally developed operating procedures.

3-22. Skills evaluations will be documented in Section II of DA Form 3479 and on DA Form 3479-1. The DA Form 3479-1 will be maintained on the right side of the training record folder and removed when the next evaluation is completed. Biennial skill evaluations may only be given by ATC chiefs, facility chiefs, training supervisors/specialists and ATCS/CTO examiners.

Note. ATC managers/ATC chiefs not holding a rating in the facility and valid medical clearance may only administer the written portion of the biennial skill evaluation.

SECTION III – INSTALLATION AIR TRAFFIC CONTROL TRAINING FOR WARFIGHTERS

3-23. Army installation ATC facilities (includes Army contract facilities) will be utilized to train Army air traffic controllers assigned to tactical units. These facilities provide essential technical training for certification and proficiency. Installation air traffic density, hours of operation, and internal training requirements will be used to determine the number of military controllers that can be trained in the facility during a given period. An LOA detailing the training program between the respective unit commanders is required.

INSTALLATION FACILITY RESPONSIBILITIES

3-24. Installation facilities provide unique training opportunities for Army controllers. It is essential that DA Civilian and US Army contract controllers understand that most Army controllers special duty (SD) to their facilities will not have the experience, expertise, and qualifications of the controllers hired to operate these Army facilities. It is therefore essential that a formalized technical training program is established, followed, and tracked for certification. This training program must define academic milestones to be met with assigned dates for practical and written evaluations. Fixed-site ATC managers are the Soldier’s partners to ensure the Army maintains a trained and competent ATC capability.

3-25. Facility schedules for these Army controllers should be based upon—
- Air traffic density.
- Facility hours of operation.
- Internal training requirements.
- Number of military controllers that can be effectively trained at the facility.

3-26. Prior to Army controllers beginning training, fixed site ATC managers should provide units with copies of the FTM and FTP.

UNIT RESPONSIBILITIES

3-27. Unit commanders must ensure LOAs developed between installation facilities and the unit take the following into consideration:
- Unit operations.
- Training events.
- Number of personnel committed to fixed site training per cycle.
- Time required for completion of FTP.

3-28. Units must adhere to the agreed upon requirements of the LOA developed for fixed site training. Unit commanders will ensure individual Soldiers adhere to the training schedule and training disruptions are kept to emergency type situations. Commanders must prioritize their selection for fixed site training. The following is suggested criteria used in the selection process:
- Soldiers requiring an initial rating prior to deployment.
- Air traffic controllers who have not received a rating in the past five years.
Prior rated Soldiers requiring an initial rating due to assignment to a different section.

3-29. Units are responsible for ensuring the Soldiers selected for training have the following:

- For initial rating, CTO rating certificate of grade for CTO exam (copies may be obtained through the DAR and FAA website).
- DA Form 3479 (complete and up-to-date).
- Required limited weather observer training complete and documented.
- Current flight physical and signed DD Form 2992 (up slip).

3-30. AR 95-2 outlines training time requirements for rating within each category of Army ATC facilities. These time requirements are the maximum allowed to complete training without a training time extension (TTE). An initial CTO rating is the only type of rating which the FAA specifies a minimum time requirement of six months. Time spent in a tactical TWR training program may be applied to this time requirement.

3-31. Commanders are encouraged to visit fixed site facilities and request progress reports on their controller’s training progress and attitude toward training.

INDIVIDUAL SOLDIER RESPONSIBILITIES

3-32. A Soldier’s selection for fixed-site training should be viewed as a commitment by the unit to recognize the hard work, diligence, and competence of the Soldier. The controller must make every opportunity of this training to strengthen and hone their skills as an air traffic controller and broaden their knowledge of airspace and ATC procedures. Soldiers selected for fixed site will be counseled in writing. This counseling will specifically state the Soldier’s responsibilities and commitment to their unit and the fixed site facility. The Soldier’s responsibilities are—

- Adhere to the assigned work schedule.
- Complete study assignments and be ready for oral, practical, and written evaluations.
- Stay on or ahead of the FTP schedule.
- Maintain medical standards as outlined in AR 40-501.
- Maintain a positive training attitude.
- Discuss (frequently) training with unit leadership to—
  - Identify any perceived problems with training.
  - Identify any scheduling conflicts with training.
  - Identify any weak areas of the trainee and determine corrective actions.
Chapter 4

Air Traffic Control Maintenance

FAAO 6000.6 details ground inspection, certification, and the operation of military facilities used within NAS. The Army has one ground inspection standard that applies to all fixed ATC facilities. This guidance will not relieve maintenance or supervisory personnel from executing procedures or emergency actions warranted by specific situations.

SECTION I – GROUND INSPECTION

4-1. Certification is the form of quality control used by facility maintenance to ensure ATC facilities operate within prescribed standards according to FAAO 6000.6. Verification is the process by which non-federal personnel (as defined in FAAO 6700.20) perform a similar quality control function. Government facility maintenance personnel are responsible for overseeing the verification process.

4-2. Personnel with specific written certification authority and responsibility on the subject facility will perform certification. Section II describes certification authority credentials. Personnel without certification authority may perform maintenance and logging duties. These activities will either be confined to non-certification parameters or followed with the appropriate certification by a fully qualified system specialist.

4-3. All ATC systems, subsystems, and equipment requiring certification according to FAA orders or Army guidance will be certified for use in the NAS and outside continental United States to meet host nation and ICAO requirements.

CERTIFICATION PROCEDURES

4-4. System and service certifications will be entered in the appropriate maintenance log prior to commissioning and operational use according to FAAO 6000.15 and DA Pam 750-8. System certification is event-based and ties the certification judgment to the decision to place a system or subsystem into service. Service certification is a periodic and frequent high-level independent judgment about the quality and scope of specific capabilities being provided to a user.

4-5. Authorized personnel only will perform service and event-based system certifications. The following events define when certification is required, regardless of whether it affects a certification parameter:
   - Prior to commissioning.
   - Upon request following aircraft accident/incidents.
   - Following adjustment to any certification parameter regardless of whether an interruption was required.
   - Prior to restoration following flight inspection requiring on-site personnel.
   - Prior to restoration following any modification.
   - Prior to restoration following maintenance task requiring an interruption or would have required an interruption to a facility without redundancy.
   - Prior to restoration following corrective maintenance activity required to restore a facility to operation.

4-6. System and subsystem certification is not required when a facility is restored to operation by restoration of power, initialization, or reset, and no other action was taken.

4-7. Some NAS systems contain user interface controls that can cause a certification parameter to be adjusted beyond its tolerance or limit. Such adjustments will not void the certification.
4-8. The certification statement made in the log must contain only one of the following:

- The prescribed certification statement from the maintenance handbook. Some handbooks require site-specific variables to be included in the certification statement (“Local transmitter [identity of frequency] [main and/or standby] certified” entered as “Local transmitter 123.4 MHz main certified”).
- The prescribed certification statement and identification or removal of exceptions (remote transmitter receiver certified except main 123.5 MHz transmitter and standby 121.3 MHz receiver).
- A modified certification statement lists a specific subset of multiple-like equipment. (Certifying multiple receivers with one certification statement).

Note. Time-based certification intervals performed by sites in addition to event based certification on systems, subsystems, and services will be listed in the maintenance SOP.

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**INSPECTION RESPONSIBILITY**

4-9. Personnel responsible for ground inspection of Army ATC and NAVAID facilities are required to use the information in this chapter to establish criteria for determining the technical efficiency of these facilities. This guidance does not authorize agencies to assume ground inspection authority over facilities that are not under their jurisdiction. The NAVAID maintenance chief and the ATC chief/facility chief or their representatives are responsible for coordinating ground inspection activities. Notice to Airman will be published according to AFI 11-208 (AR 95-10) for maintenance activities that remove the system or subsystem from service. Maintenance personnel having inspection responsibility for a NAVAID must request a confirming flight inspection when safe operation of the facility is in question.

Note. Special flight inspections will be accomplished per FAAO 8200.1, chapter four.

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**VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE/DISTANCE MEASURING EQUIPMENT/TACTICAL AIR NAVIGATION INSPECTIONS**

4-10. Circumstances requiring a confirming flight inspection include—

- Accidents/mishaps.
- Major changes in local obstructions or buildings that may affect the signal strength, coverage, or courses.
- Replacement or installation of the tactical/distance measuring equipment (DME) antenna or radio frequency (RF) subassemblies (excluding transmission lines) of the antenna.
- Major modernization or corrective maintenance to the counterpoise, such as extension of the counterpoise.
- Change in facility operating frequency.
- Change in output level (power) for the purpose of increasing or decreasing service volume.
- Adjustment or replacement of the very (high frequency) omnidirectional range (VOR) antennas or components, including pedestals, loops, baluns, and supporting braces.
- Installation and operation of the tactical air navigation antenna (with no change to the VOR antenna system).
- Replacement or modification of the test generator, if the tolerances for ground check cannot be met.
- Installation of a modification to improve the RF spectrum for 50 kilohertz channel spacing, or to eliminate adjacent channel interference.

4-11. Circumstances not requiring a confirming flight inspection include—

- Replacement of any or all solid-state components.
- Replacement or repair of equipment components or units.
Complete tuning of the transmitter.

- Measurement and adjustment of all modulation levels.
- Phasing adjustments.
- Installation or relocation of the DME mast, the tactical air navigation monitoring pole, or a remote communication outlet antenna pole (if accomplished according to current instructions).
- Replacement of the polarizer when reset to the previous setting, or readjustment of the polarizer when a portable ground polariscope is used to optimize the facility for minimum vertical polarization.
- Installation or replacement of obstruction lights or the painting of the antenna shelter.
- Replacement of the radio transmitter antenna-2 upper and lower bearings, spin motor, and the radome.
- Other maintenance procedures, such as refurbishment of VOR counterpoise, wood decking, and/or terneplate, provided conditions are restored to those that existed at the time of the last flight inspection (as reflected in facility records) and ground check is within \( \pm 0.2 \) degrees of the reference ground check.
- Other maintenance procedures, such as any or all of the following, provided conditions are restored to those that existed at the time of the last flight inspection (as reflected in facility records).
- Repair, alignment, or replacement of the goniometer.
- Repair, replacement, modification, or repositioning of any fixed field detector used in facility monitoring.
- Replacement or modification of any signal element in the monitors.
- Adjustment or replacement of the RF transmission lines (including feed-lines, stubs, positioner, and bridges, either coaxial or hybrid).
- Replacement, repair, or modification of test equipment. (For the VOR, if unable to make before and after measurements, a confirming flight inspection will not be required if the tolerances for ground check are met.)

4-12. The following applies to maintenance of NAVAIDs facilities and equipment—VOR, DVOR, VOR/DME, very high frequency omnidirectional radio range tactical air navigation aid, and tactical air navigation:

- **AN/Federal Communication Commission Registration Number (FRN)-41(V).** Army technical manuals (TMs) will be used for ground inspection and preventive maintenance. The equipment will be certified according to FAAO 6820.7. Use VOR level 1 performance check data sheet, VOR level 2 ground check data sheet and VOR level 3 test generator calibration data sheet located in TM 11-5825-266-14-1 for equipment maintenance and certification.

- **AN/FRN-47(V).** Army TMs will be used for ground inspection and preventive maintenance. The equipment will be certified according to FAAO 6730.2. FAA technical performance records will be used for equipment maintenance.

- **AN/FRN-45.** USAF technical orders will be used for ground inspection and preventive maintenance. The equipment will be certified according to FAAO 6820.7. FAA technical performance records will be used for equipment maintenance.

- **AN/URN-25.** US Navy TMs will be used for ground inspection and preventive maintenance. The equipment will be certified according to FAAO 6820.7. FAA technical performance records will be used for equipment maintenance.

- **415SE.** Ground inspection, preventive maintenance, and certification will be performed according to FAAO 6730.2 and applicable TMs. FAA technical performance records will be used for equipment maintenance.

- **Doppler VOR.** Ground inspection, preventive maintenance, and certification will be performed according to FAAO 6820.7 and applicable TMs. FAA technical performance records will be used for equipment maintenance.
NON-DIRECTIONAL RADIO BEACON INSPECTIONS

4-13. Circumstances requiring a confirming flight inspection include—
- Accidents/mishaps.
- Major changes in local obstructions, building, and so forth that may affect signal strength and coverage.
- Changes or modifications to the antenna or ground plane that may affect facility coverage.
- Change in the antenna current to increase or decrease the service volume.
- Frequency change.
- Circumstances not requiring a confirming flight inspection. The circumstances remain unchanged as stated in the appropriate manuals.

4-14. The following applies to maintenance of non-directional beacons:
- T-1428/FRN, TN-588/FRN and R-2176/FRN. Army TMs will be used for ground inspection and preventive maintenance. The equipment will be certified according to FAAO 6740.2. FAA technical performance records will be used for equipment maintenance.
- ND-4000A. Ground inspection, preventive maintenance, and certification will be performed according to FAAO 6740.2 and applicable TMs. FAA technical performance records will be used for equipment maintenance.

INSTRUMENT LANDING SYSTEM INSPECTIONS OF THE LOCALIZER, GLIDE SLOPE AND 75 MEGAHertz MARKER BEACONS

4-15. Circumstances requiring a confirming flight inspection include—
- Accidents/mishaps.
- Changes to obstructions, buildings, power lines, and so forth that may affect the radiated signal.
- Construction, runway repairs, and so forth that were performed in the general localizer or glide slope area, if there is any doubt about how they affect facility performance.
- Change in the facility assigned operating frequency.
- Replacement of critical ILS components (such as RF lines and antenna components, RF bridges, electronic modulators, mechanical modulator troughs or parts, power dividers) and transmitters as complete units if they contain any of these critical components.
- Repair or replacement of any of the localizer antennas in the radiating array.
- Repair, replacement, or repositioning of any of the glide slope antennas in the radiating array.
- Removal, repair, or reinstallation of any of the glide slope antennas in the radiating array.

4-16. Circumstances not requiring a confirming flight inspection include all other maintenance activities that meet the maintenance requirements of FAAO 6750.49.

4-17. Refer to FAAO 6750.49 and applicable equipment TMs for ground inspection procedures and certification. FAA technical performance records will be used as directed by FAAO 6750.49 for ILS and 75 MHz marker beacon maintenance.

PRIMARY AND SECONDARY RADAR FACILITY INSPECTIONS

4-18. Circumstances requiring a confirming flight inspection include the following:
- Accidents/mishaps.
- When a reported deficiency is not susceptible to exact measurement or to verification by ground measurement.
- After an aircraft accident in which the radar facility may have been involved.
- After an antenna change (ASR/PAR) or antenna tilt change (fixed tilt surveillance radars only) or when engineering judgment indicates a probable change in the antenna radiation pattern.
- After a modification or other circumstance that, in the judgment of the facility chief/maintenance chief, requires facility performance to be recertified.
- Anytime secondary radar directional output power is reduced below the minimum output power level or the Omni to directional power ratio is increased above the level previously documented during the flight inspection.

4-19. When circumstances remain unchanged, no confirming flight inspection is required as stated in the appropriate manuals.

**Periodic Operational Checks of the Radar System**

4-20. In addition to the flight commissioning flight inspection, periodic operational checks of the radar system will be performed by the FAA, Army flight inspection aircraft, air traffic controllers, and maintenance personnel. These checks will supplement the performance assurance obtained from observing the system during daily operations. These checks include—

- Observing identified targets under control within the sector and comparing them against data obtained during the commissioning flight inspection or against minimum performance requirements developed at the facility. These targets may be flight inspection aircraft or targets of opportunity.
- Checking the technical performance of the facility against the established performance database of the facility.

*Note.* Installation facilities refer to FAAO 6310.9 (ASR-8), FAAO 6310.30 (ASR-11), TM 11-5840-382-23 (AN/FPN-67), FAAO JO 6360.14 (ATCBI-5), and applicable equipment TMs for ground inspection procedures and certification. FAA technical performance records will be used by FAAO JO 6310.9, and FAAO JO 6310.30.

**MAINTENANCE OF WIDE-AREA MULTILATERATION SYSTEM**

4-21. Ground inspection, preventive maintenance, and certification will be performed according to FAAO 6360.25 and applicable TMs.

**AIR TRAFFIC CONTROL AUTOMATION EQUIPMENT INSPECTIONS**

4-22. Ground inspections and certification will be performed on radar automations systems according to applicable TMs and the following FAA orders:

- FAAO JO 6191.3, FAAO 6191.5 (STARS G4), FAAO 6191.6 (STARS-ELITE). FAA technical performance records will be used for equipment maintenance.
- FAAO 6350.21 Maintenance and Certification of Common Digitizer 2 Equipment

**COMMUNICATION FACILITIES INSPECTIONS**

4-23. Terminal area and flight following communications are provided by the various types of air/ground facilities. Facilities consist of air/ground transmitter and receiving equipment, recording equipment, and necessary control equipment. Communications facilities will be flight inspected according to FAAO 8200.1.

4-24. FAA technical performance records and applicable TMs for communications ground inspection procedures and certification will be used for equipment maintenance at remote communications facilities.

4-25. Equipment will be certified according to FAAO 6400.1 and 6580.5. FAA technical performance records will be used for equipment maintenance.

4-26. Antenna ground inspection procedures will be accomplished according to FAAO 6580.5. Annotate ground inspection results on the appropriate FAA technical performance record used for radio maintenance.

4-27. Refer to FAAO 6670.13, maintenance of digital voice recorder equipment, and applicable TMs for recorder ground inspection procedures and certification. FAA technical performance records will be used for equipment maintenance.
4-28. Remote Control Equipment (RCE) Inspection procedures will be accomplished according to FAAO 6650.4.

4-29. Refer to FAAO 6670.16, maintenance of DALR equipment, and applicable TM for recorder ground inspection procedures.

4-30. Refer to FAAO 6580.5 for ground maintenance, certification and technical performance records for CM-300/350 Series Radios. Use CM-300UT/UR version one standards and tolerances for version CM-300 version one VHF and UHF transmitters and receivers. The tone modulation standards and tolerances in FAA Order 6580.5 are not applicable to the version one of CM-300/350 transmitters fielded to army ATC facilities. Transmitters CM-300/350VDT and CM-300UT will ensure that the following standards and tolerances are achieved while injecting a -8 dBm, 1004 hertz test tone at the transmitter or audio patch panel:

- CM-300/350VDT: The tone modulation standard is 85%. The initial and operating tolerances are 80-100% in accordance with General Dynamics Manufacturer’s Manual 68-P40180G.
- CM-300UT: The tone modulation standard is 90%. The initial and operating tolerance is +/- 5% in accordance with General Dynamics Manufacturer’s Manual 68-P40404G.

4-31. D-ATIS: Conduct maintenance in the XMU+ ATIS guide and the StarCaster ATIS system, installation and configuration manual. The technicians with certification authority must verify that the system has the most current firmware installed and that audio levels are set to -8 dBm ± 2dBm for zero loss lines to the transmitting branch. Separate XMU audio channels connected to recording equipment will be set to -10 dBm ± 2dBm. Facilities that have non-zero loss lines or use radio link equipment to transmit the D-ATIS audio will document the commissioned level and apply applicable tolerances. Facilities will conduct automated Terminal Information System Service (ATISS) certification and Automatic Terminal Information System equipment certification in accordance with FAA Order 6550.2. All maintenance actions and certification results will be recorded in the facility log FAA 6030-1. This is a required semi-annual check and the levels will be documented on FAA Technical Performance Record (TPR) 6000-8.

LIGHTED NAVIGATIONAL AIDS

4-32. Refer to FAAO 6850.5, UFC 3-535-01, and applicable TM for maintenance and certification of lighted navigational aids. Annotate ground inspection results on the appropriate FAA technical performance record as required.

ADDITIONAL REQUIREMENTS

4-33. Facilities should be visited frequently enough to ensure accurate and reliable operation according to the criteria established in this guidance. Each time a facility is visited, the maintenance technician responsible for the facility will verify facility performance on the basis of one or more of the following criteria:

- Visual and aural. On every visit verify, by visual and aural observation, whether equipment is operating normally. This includes, but is not limited to, meter readings, pilot light indications, extraneous noises, and excessive heat.

- Monitoring. On scheduled visits and as required, certify whether the facility operation is satisfactory by noting local monitoring information. Monitoring may include a control line check to determine control and remote monitor functions are satisfactory.

- Meter readings. On scheduled visits, if applicable, record meter readings and compare them with those previously recorded on station records.

- Performance standards and tolerances. On scheduled visits and as required, determine whether the facility meets the performance standards and tolerances established in this guidance, the TM, or the handbooks.

- System ground check. On scheduled visits and as required, perform a ground check and compare the results with the reference ground check error curve (VOR) and/or with data obtained at the time of the last flight inspection. Evaluate these data, and determine facility performance has not departed appreciably (beyond tolerance) from the previous system ground check recordings.
Flight inspection. On scheduled visits or as requested, determine whether facility performance is satisfactory based on the flight inspection evaluation. Ground check data will be recorded immediately following any flight inspection.

*Note.* An accident investigator may request a flight inspection on any NAVAID suspected to have been a contributing factor in an accident or mishap.

### SECTION II – AIR TRAFFIC SERVICES MAINTENANCE CERTIFICATION PROGRAM EXAMINERS

4-34. A memorandum nominating Air Traffic Services Maintenance Certification Program (ATSMCP) Examiners will be approved by ACOM/ASCC/DRU and forwarded to ATSCOM. Military, DA Civilians, and local national civilians qualified to serve as maintenance certifiers chiefs will be approved in writing according to AR 95-2.

#### PROGRAM OBJECTIVES

4-35. The US Army ATC maintenance certification program establishes the uniform standards for measuring the technical proficiency of ATC maintenance technicians. It also ensures the technical competence of all maintenance personnel having direct responsibility for the safe operation of systems/subsystems/equipment critical to air navigation and ATC. The program establishes the procedures for documenting the technicians’ proficiency, granting authority, and assigning certification responsibility.

#### VERIFICATION OF NON-FEDERAL PERSONNEL

4-36. Non-Federal/contractor ATC equipment maintenance technician verification is completed through an accept course of study that meets or exceeds the objectives required to verify equipment to the standards contained in Army technical manuals and applicable FAA maintenance orders.

#### CERTIFICATION RESPONSIBILITY AND AUTHORITY FOR FEDERAL PERSONNEL

4-37. The responsibility for the certification program is shared by ACOM/ASCC/DRU/ARNG, ATSCOM, certifiers, and ATC facility maintenance chiefs.

#### AIR TRAFFIC SERVICES COMMAND

4-38. ATSCOM will—

- Provide overall direction to, and guidance on, the program.
- Identify and specify the theory and performance requirements.
- Standardize and continually evaluate and update all phases of the program.
- Develop, validate, review, and revise theory and performance examinations.
- Determine the systems to be added or deleted from the program and inform the appropriate individuals/elements.
- Distribute the examinations and certificates.
- Resolve comments, questions, and disputes about the examinations.
- Maintain database files containing complete verification records.
- Determine the acceptability of formal schools.

*Note.* Only examinations developed or approved by ATSCOM will be used as a basis for issuing certification authority. This certification may be used only for the specified ATC system/subsystem.
AIR TRAFFIC SERVICES MAINTENANCE CERTIFICATION PROGRAM (ATSMCP) EXAMINER

4-39. A memorandum nominating ATSMCP Examiners will be approved by ACOM/ASCC/DRU and forwarded to ATSCOM. Military, DA Civilians, and local national civilians qualified to serve as maintenance chiefs will be approved in writing by the commander, ATSCOM.

4-40. ATSMCP examiners will—

- Maintain files containing complete technician certification and related training records on each technician.
- Conduct and record the annual review on DA Form 3479-9, ATC Maintenance Personnel Certification and Related Training Record, Section II.
- Develop, administer, schedule and provide material support for ATS maintenance training and certification for their organization.
- Ensure necessary ATS equipment is operational and certified as operational as required by published regulatory guidance (FAAOs, TMs, TOs, JOs, manufacturer manuals).
- Submit requests for examinations.
- Ensure NOTAM coordination is made with appropriate ATS Facility Chief(s) prior to conducting any training or certification testing on ATS equipment which may incur an outage.
- Post ATS Maintenance Certifications achieved for every technician in the unit on the ATSCOM website under the Web-6R tab.

SITE MAINTENANCE CHIEF, MAINTENANCE SUPERVISORS

4-41. The site maintenance chiefs/supervisors will—

- Provide the technician with the training materials needed to accomplish comprehensive training on the systems/subsystems/equipment.
- Coordinate with the examiner about administration of the examination.
- Develop and document OJT on the site-specific systems/subsystems to support the certification program.
- Advise the airfield division chief/commander/manager on the status of ATC maintenance certification.

MAINTENANCE TECHNICIAN CERTIFICATION

4-42. Technician certification is completed through an accepted course of study provided by the FAA, or through unit and facility certification programs or DOD (excluding initial military occupational specialty producing schools).

FEDERAL AVIATION ADMINISTRATION MAINTENANCE SCHOOLING

4-43. Completion of an accepted course of study offered by FAA or DOD (excluding initial military occupational specialty [MOS] producing schools) that meets or exceed the objectives required to certify the equipment to FAA (NAS) standards contained in FAAO 8200.1. The FAA course catalog is available at http://www.academy.faa.gov/catalog/. ACOM/ASCC/DRU/ARNGs will send their annual training requirements to ATSCOM for processing by the FAA liaison.

CERTIFICATION BASED ON PROGRAM COMPLETION

4-44. The certification program must be administered efficiently to provide qualified technicians that meet the stringent requirements for properly maintaining ATC equipment. The technician must satisfy the theory concepts and performance requirements specified in this chapter to meet qualification requirements of the assigned position. After completing qualification requirements, the technician may be assigned the responsibility of certifying specific systems/subsystems/equipment. The ATC maintenance technician certification process consists of the following eight steps (figure 4-1, page 4-9):
Figure 4-1. ATC maintenance technician certification process

- **Step 1.** The technician is assigned to the facility or unit.
- **Step 2.** The technician has prior certification.

*Note.* If certified on a particular system/subsystem, the maintenance chief reviews the technician’s training records, evaluates him, then takes the appropriate steps. If not previously certified, continue with step 3.

- **Step 3.** The technician enters the maintenance training program. This step includes—
  - Establishing training records.
  - Orientation on equipment.
  - Orientation on facilities and their locations.
  - Initial counseling on maintenance and shop operations.
  - Statement of performance expectations.
  - Orientation on safety.
  - Overview of classes.
  - SOP requirements.
- **Step 4.** The technician enters a phased training program on individual systems or equipment (for example ASR-11 and Air Traffic Control Beacon Interrogator [ATCBI]-5). This step of the certification process consists of the following three phases:
  - **Phase I.** The technician is trained on the theory of operation, system/subsystem/equipment operational characteristics, power requirements, frequency spectrum, and normal operating standards. Also covered in this phase are the required reference material, forms and records, maintenance allocation charts, PMCS and TMDE procedures and requirements, and local SOP requirements.
Phase II. The technician is trained on alignment systems and subsystems, sequential and system interface alignment procedures, and TMDE requirements and settings. This training also includes reference material and local SOP requirements, forms, and records completion.

Phase III. The technician is trained on system and subsystem fault localization, schematic use, maintenance allocation charts, and major and minor component installation/removal procedures. This training also includes tool requirements and usage, safety and quality control requirements, supply procedures, and reference material and local SOP requirements.

- Step 5. When the technician has satisfactorily completed the three phases above, the examiner will submit requests for examinations on the ATSCOM website under the Web 6-R tab.
- Step 6. The examiner administers the examination to the technician in two parts as explained below. All theory examinations are open book.
  - Part 1. The technician completes the comprehensive written examination, which consists of questions on Phases I, II, and III.
  - Part 2. The technician is given the hands-on performance examination on Phases II and III.

Step 7. The test scores will be sent to the examiners and technician from the Web 6-R. If the technician pass the theory test, the Web 6-R will automatically send the performance exam by email to the examiner and technician. Once the technician pass the performance exam, the examiner will send the results to the ATS Maintenance Certification Manager at usarmy.rucker.forscom.mbx.afat-ats-mc@mail.mil along with the memorandum requesting the certification of the technician. ATSCOM will issue the certification and forward a copy back to the requesting unit. If the technician fails the examination, the examiner identifies the specific areas in which the technician had problems. The technician is re-entered in the training program.

4-45. The examiner will be designated, in writing according to AR 95-2. Theory and performance examiner must possess certification for the entire system on which he examines another technician.

THEORY OF OPERATION AND PERFORMANCE EXAMINATIONS

4-46. All theory and performance examinations used in the certification program are developed or validated by ATSCOM. These examinations will be used to determine whether the examinee knows the theory and practical techniques required to perform maintenance, and diagnose and correct deficiencies on ATC systems/subsystems/equipment. Comprehensive examinations are developed using TMs, FMs, TCs, handbooks, manufacturer manuals, FAA joint acceptance standards, and senior maintenance personnel. Equipment examinations are comprehensive in scope, covering not only the equipment within the system but also the auxiliary equipment considered part of the system.

EXAMINER PREREQUISITES

4-47. The examiner will be designated, in writing according to AR 95-2. The duties of the theory examiner consist of monitoring only. He need not hold certification authority. The performance examiner must possess certification for the entire system on which he examines another technician.

THEORY (CONCEPTS) EXAMINATIONS

4-48. The theory examination will test the technician’s understanding and knowledge of a wide range of information. The questions will cover system-oriented theory, operational characteristics, subsystems, power requirements, frequency spectrum, and normal operating standards. Some questions require both calculations and analytical reasoning.

Requests for Theory Examinations

4-49. The examiner will send requests for theory examinations on ATSCOM website under the Web 6-R tab. An examination will not be requested unless there is a reasonable expectation the technician will pass it. Under no circumstances will it be used as a screening device.
Administration of Theory Examinations

4-50. When administering the theory examinations, the examiners will—

- Understand and apply mandatory secure-handling requirements to protect program integrity.
- Not discuss or disclose the contents of examinations.
- Prepare an appropriate area for administering examinations and give the examinee required instructions and materials.
- Caution the examinee on the official nature of the examinations and the penalties involved for disclosure of the contents.
- Allow examinees the use of reference material (personal or supplied) during the examinations.
- Control and time examinations as prescribed and process completed examinations as instructed.

Grading of Theory Examinations

4-51. The automated ATS Maintenance Certification system will grade theory examinations. The examinations and the results will be distributed according to this chapter. If the technician fails to achieve 70 percent on the examination, the examiner will define specific weak areas and the technician will be required to review all areas on the examination.

Security in Handling Theory Examinations

4-52. Everyone in the examination chain concerned with the certification process must maintain security in the handling of written examinations. Compromise of examinations in any form is a serious violation of the rules of conduct and discipline. Any violation will require the appropriate official to take disciplinary action. Any person having personal knowledge of a compromise on any segment of the written examination will advise ATSCOM immediately of the details.

PERFORMANCE EXAMINATIONS

4-53. Performance examinations are used to demonstrate a technician’s proficiency. These examinations vary in length according to the complexity and scope of the system/subsystem/equipment. The use of reference material is encouraged during the examination. The examinee makes the actual adjustments, alignments, or software program changes; evaluates system performance; and corrects equipment maladjustments. The examiner observes the results and verifies the accuracy of the adjustments, alignments, or changes.

4-54. The examiner may deviate from the printed examination to ensure the examinee has the required proficiency. The examinee should be told of any deviations before taking the examination.

4-55. If there is a published OJT course, the performance examination may be incorporated as an integral part of OJT. When there is no published OJT course, the examination may be used as a study outline. When the examination is so used, the individual who provides OJT should not be the examiner.

4-56. The examiner may make only minor changes to the performance examination to make it compatible with the system used. Operations and questions other than those given on the performance examination may be used to ensure the examinee’s total system knowledge. When maintenance procedures or system configurations change, facilities will recommend changes be made to the examinations. Recommendations for changes to examinations will be sent to ATSCOM ATS Maintenance Certification Program Manager at (334) 255-8094, or email: usarmy.rucker.forscom.mbx.afat-ats-me@mail.mil.

Administration of Performance Examinations

4-57. The distribution of the performance examination prior to the examination is encouraged. The trainee will be made thoroughly familiar with the examination requirements and related test equipment during OJT.

4-58. Except in instances in which two people are required to make a particular adjustment or alignment, the trainee will complete the examination unassisted.
Chapter 4

Grading of Performance Examinations

4-59. Once the trainee has completed an operation, the examiner grades the performance. Failure of only one of certain operations constitutes failure of the entire examination.

Note. Secure handling of the performance examination is not required.

Examination Review and Evaluation

4-60. Certification examinations will be reviewed and updated by unit examiners regularly. Examiners will notify the ATSCOM ATSMCP manager at: usarmy.rucker.forscom.mbx.afat-ats-mc@mail.mil to correct issues on exams when redundancy is discovered or questions are detected that are not correct or relevant to the system/subsystem/equipment for which the technician is being tested.

Examination Failure Policy

4-61. If a technician requiring certification authority fails an examination, the supervisor will return the technician to the phased training program (figure 4-1, page 4-9). The remedial training will be documented in the technician’s official certification and related training record. The program will contain—

- Training for the deficient areas identified.
- Recommended study material.
- Time schedule for improvement program completion.
- Name of instructor(s) and method of documenting training.

4-62. If the technician fails the theory examination, he is ineligible to take the performance examination. If a technician passes the theory examination but fails the performance examination, he is not required to take another theory examination. The examiner must notify ATSCOM, in writing, of the tentative scheduled date for the new performance examination; ATSCOM will then verify the date.

4-63. A technician may not take a theory or performance examination more than three times in a 12-month period.

4-64. The ATSCOM must retain examinations, comments, and any other information pertaining to a failed examination for not less than two years.

Equipment Certification

4-65. AR 95-2 lists ATC equipment requiring certification. A technician qualified and authorized to do so must perform equipment certification. ATC equipment is unusable until certified or authorized by the commander.
PART TWO

Tactical Air Traffic Operations

Chapter 5

Tactical Facility Administration

Part two of this manual (chapters five through eight) standardizes US Army tactical facility administration, operations, training, and maintenance. Procedures dealing with operational requirements, position responsibilities, and duties are the minimum standard, unless stated otherwise.

SECTION I – ARMY AIR TRAFFIC CONTROL GOVERNING DIRECTIVES

5-1. The following publications apply to all Army controllers:

- FAAO JO 7110.65, Air Traffic Control.
- FAAO JO 7210.3, Facility Operations and Administration.
- FAAO 7220.1, Air Traffic Control Certification Procedures.
- FAAO JO 7340.2, Contractions.
- FAAO JO 7350.9, Location Identifiers.
- FAAO JO 7900.5, Surface Weather Observations.
- FAAO 8200.1, United States Standard Flight Inspection Manual (USSFIM).
- FAAO 8240.41, Flight Inspection/Air Traffic On-Site Coordination Requirements.
- FAAO 8260.15, United States Army Terminal Instrument Procedures Service.
- FAAO 8260.19, Flight Procedures and Airspace.
- FAAO 8260.3, United States Standards for Terminal Instrument Procedures (TERPS).
- FAAO 8260.42, United States Standard for Helicopter Area Navigation (RNAV).
- UFC 3-260-01, Airfield and Heliport Planning and Design.
- UFC 3-260-04, Airfield and Heliport Marking.

5-2. US Army controllers who augment a facility operated by another branch of the US military will comply with the ATC regulations and procedures of the host service. The Code of Federal Regulations Title 49 (Transportation), 40102, all military aircraft, including those which are under contract to the US Government are considered public aircraft, not civil. Therefore, controllers performing air traffic services to public aircraft are not required to possess control tower operator certificates.

5-3. An ATC facility operating with military personnel during contingency operations shall not be classified under Part I (Installation Air Traffic Operations) of this publication unless the facility is operated by civilian
International Civil Aviation Organization Implications

5-4. This TC supplements applicable DA, FAA, and ICAO publications to be used in providing ATS. When the US Army provides ATC services in overseas areas, deviations from these standards may be necessary to conform to foreign government regulations. Deviations will be outlined in an agreement between one of the following:

- Theater commander and the host government.
- Host government military commanders and US Army commanders.
- Host government ATC authorities and the US Army commanders.
- Host government ATC authorities and US Army ATC authorities.

5-5. National regulations or agreements adopted for Army use in overseas areas take precedence over this publication; host nation regulations and procedures apply to US Army controllers who augment a civil or foreign ATC facility. However, every effort should be made to conform to this publication.

5-6. Tactical ATC services performed to support aviation mission requirements may also dictate deviations from established standards. See AR 95-2 for waivers and deviations.

North Atlantic Treaty Organization Standard Agreements Implications

5-7. Standardization Agreement (STANAG) is the North Atlantic Treaty Organization (NATO) abbreviation for standardization agreement. These agreements are used for the purpose of standardizing—

- Processes.
- Procedures.
- Terms.
- Common military procedures.
- Common technical procedures.
- Common equipment between the member countries of the alliance.

5-8. Each NATO state ratifies a STANAG and implements it within their military. The purpose is to provide common operational and administrative procedures and logistics, so one member nation's military may use the stores and support of another member's military. STANAGs also form the basis for technical interoperability between a wide variety of communication and information systems essential for NATO and allied operations.

Section II – Tactical Facility Operations and Management

5-9. This section provides instructions, standards, and guidance for operating and managing tactical ATC facilities during temporary and extended operations.

Temporary Control Locations

5-10. Directives contained in FAA JO 7210.3 state mobile control towers may be used at non-FAA locations when requested by flying organizations, cities, or other political entities to assist in the operation of fly-ins, air races and other events provided that these operations do not jeopardize FAA activities. All military ATC personnel engaged in these activities must be properly certified and rated according to 14 CFR Part 65 for the airport. Furthermore, AR 95-2 restricts military ATC personnel from providing services to civil aircraft without a Control Tower Operator Certificate or equivalent FAA tower credential. Military ATC services provided at airports under Class G airspace will not result in an airspace rule making decision that compels
non-participating aircraft to comply with military ATC procedures. Military ATC units will coordinate with civil airport managers for the release of NOTAMs notifying the public of the ATC training activity and develop local procedures for both participating and non-participating aircraft.

5-11. The DAR is the starting point to coordinate and gain approval for the certification and rating of Military ATC personnel at civil airports under the CTO program. The FAA Regional Representative is the POC for ATS training and certification requirements at temporary control locations and will serve as the temporary location examiner or delegate responsibilities to the unit examiner.

PRELIMINARY ACTIONS

5-12. Military personnel shall consult with airport officials for the proper siting and location of ATC facilities and equipment. DOD siting criteria reflected in UFC 3-260-01 may not meet the operational requirements of civil airports. Military personnel shall review FAA AC 150/5300-13, FAR Part 77, and FAR Part 139 when developing site plans.

5-13. Prior to deployment or movement to a temporary control location the CTO/ATCS examiner should develop a set of skill and knowledge items to be checked prior to initiating ATC operations as part of a skills check evaluation according to FAAO 7220.1.

5-14. These criteria should be generally standardized and are made available to ATC facility chiefs to ensure facility personnel are trained on all items, as much as possible, prior to arrival at the temporary location. Skills check evaluation items should include—

- Local airport information:
  - Facility identification.
  - Facility hours of operation.
  - Assigned frequencies.
  - Applicable Letters to Airmen (LTA)/LOAs.
  - Airport layout/diagram.
  - Airport elevation.
  - Airport tenant/building locations.
  - NAVAID critical areas.
  - Airfield security and entry control points.
  - Adjacent/overlying ATC facilities.
  - FOD checks and airfield inspections.
  - NOTAMs, Aeronautical Information Publications, or Aviation Procedure Guides.

- Tactical or special use airspace areas (ATCT/GCA/AIC as applicable):
  - Controlled airspace.
  - Overlying airspace.
  - Restricted airspace.
  - Special use airspace.
  - Temporary Flight Restriction (TFR).

- Routes and corridors (ATCT/GCA/AIC as applicable).

- Terminal traffic patterns (ATCT/GCA as applicable).

- Reporting points (ATCT/GCA/AIC as applicable).

- Landing area identification, lengths, widths, surface composition (e.g., other than hard surface), and condition (ATCT/GCA/AIC as applicable):
  - Runways, helipads, other landing areas.
  - Distance remaining from intersections.

- Lighting or marking (ATCT/GCA as applicable):
Chapter 5

- Airport lighting.
- Approach lighting.
- Refuel/rearm areas and procedures (ATCT).
- Parking areas and procedures (ATCT):
  - Movement/non-movement areas.
  - Aircraft parking and ground movement.
  - Taxiway widths and restrictions.
  - Hot spots.
- Air and missile defense procedures (ATCT/GCA/AIC as applicable).
- Information transfer requirements and procedures (ATCT/GCA/AIC as applicable).
- Site-specific ATC procedures (ATCT/GCA/AIC as applicable):
  - Best operating practices and local operating procedures for air traffic management.
  - Opposite direction operations (ODO).
  - Type/mix of traffic.
  - Special flight procedures.
  - Emergency procedures/contingency plans.
  - Waivered procedures.
- Weather reporting or relay procedures (ATCT/GCA/AIC as applicable):
  - Available weather information, equipment, and capabilities.
- Inadvertent instrument meteorological conditions procedures (ATCT/GCA/AIC as applicable).

ON-SITE PROCEDURES

5-15. Upon arrival and establishment of ATC services at a location, all controllers holding previous facility ratings in like facilities will be given a DA 3479-1 evaluation (referred to as a "skills check" in FAAO 7220.1) by the CTO/ATCS examiner prior to executing ATC responsibilities.

5-16. This evaluation will cover all positions and verify that the controller understands the local traffic procedures and any site-specific information affecting ATC operations. A satisfactory evaluation certifies that the controller is capable and qualified to provide ATC services at the temporary control location. This certification is valid for 120-days. The results of the skills check evaluation will be annotated in DA Form 3479, Section II, with a Remarks entry of “<location> Skills Check.”

5-17. If assuming ATC control from another ATC organization at an existing temporary control location this evaluation may be conducted by the CTO/ATCS examiner assigned to the departing unit. The departing unit examiner must be granted CTO/ATCS examiner status by incoming unit commander according to AR 95-2, FAAO 7220.1, and this TC.

5-18. For position-qualified controllers the process is similar with the facility chief, training supervisor, or CTO/ATCS examiner conducting the skills check evaluation to certify that they are capable and qualified to operate without direct one-on-one supervision at the temporary location on position for which they were previously position-qualified. The results of the skills check evaluation will be annotated in DA Form 3479, Section II, as a routine Qualification evaluation.

5-19. No entries are made on the controller’s facility rating credentials (FAA Form 7220-1 or FAA Form 8080-1) for temporary control locations.

5-20. Any of the above listed evaluations may be combined with the required Annual Evaluation or a No-Notice Evaluation.

5-21. If operations at the temporary location are expected to exceed 120-days the facility chief should begin development of an installation-style training and certification program for future implementation.

5-22. Unit examiners will retain a copy of the results of written or practical evaluations and ensure proper documentation has been recorded within the controller’s training records.
EXTENDED TACTICAL OPERATIONS

5-23. Operations with a duration of 120 days or greater require site-specific certifications. Controllers arriving at these locations after initial occupation require the completion of a written examination and a skills evaluation reflecting successful demonstration of all required controller skills outlined in FAAO 7220.1.

5-24. The skills evaluation and written examination will be conducted by certifying officials from the outgoing unit for key personnel during relief in place operations. Incoming certifying officials will assume skill evaluations and rating responsibilities on all other unit personnel after handover. Controllers completing initial ratings during extended deployments will complete a fixed-site FTP as outlined in Part I of this TC.

5-25. When determination of a change from a temporary to an extended tactical control facility is made, the ATC element will immediately process designation of CTO/ATCS examiners for the extended tactical location according to AR 95-2, FAAO 7220.1, and this TC. Upon designation as an extended tactical control facility, annotate the new facility in Section I of the DA Form 3479 of all assigned personnel.

5-26. For personnel already fully-certified to operate at the temporary location, who meet the initial training gate and initial time qualifications, the CTO/ATCS examiner will conduct an additional facility-rating knowledge and skills evaluation. These evaluations will include a written test and an evaluation using DA Form 3479-1 and FAA Form 8400-3 (if applicable). If the evaluation is satisfactory, the CTO/ATCS examiner shall process necessary credentialing documents for the type of ATC facility according to AR 95-2, FAAO 7220.1, and this TC. Section I of the controller's DA Form 3479 will be annotated to show the progression from Trainee to Controller on the same day of the satisfactory evaluation for the designated facility.

5-27. Operational circumstances vary across deployed locations which will require unit leaders to collaborate in order to determine the appropriate qualification training hours and procedures for handover. Adequate duty time must be provided for completion of these requirements.

5-28. Certifying officials will retain a copy of the results of written and practical evaluations and ensure proper documentation has been recorded within the controller’s training records.

FACILITY MANAGEMENT

5-29. Extended or enduring tactical operations lasting 120 days or longer will require facility management to develop training materials and supporting administrative documents to accommodate sustained operations. The items to be developed include—

- FTMs (see appendix B).
- FTPs (see chapter three).
- LOAs, memorandums of agreement, and letter of procedure (LOPs) needed. (See appendix A).
- Handover procedures (transition checklists, controller evaluation assessments).
- Required facility charts and aids (runway and airfield diagrams, VCC, and air crash search and rescue/local crash grid maps).

Note. All air traffic training programs (ATTPs) are required to have an FTM for training at home station. This FTM can be further developed to support extended operations as they occur.

TACTICAL AIR TRAFFIC CONTROL RATINGS

5-30. AR 95-2 and FAAO 7220.1 detail procedures for the administration of ATC ratings. Contained within these policy documents are leadership and examiner responsibilities, time limitations, and skill requirements for the assessment of controller qualifications. Chapter seven of this TC provides the construct for the development of the tactical training program and progression requirements according to the policies outlined in AR 95-2 and FAAO 7220.1. To meet the commonly accepted objectives of the knowledge and skill requirements outlined in ICAO, NATO, and FAA guidelines initial experience gates are required to supplement training assessments and qualifications.
5-31. Initial rating applicants are required to meet minimum experience gates before a facility rating can be completed and progression to readiness level (RL) 1. These experience gates are required for initial “type” ratings and are supplemental (additional) to knowledge and skill assessments applied by examiners. The intent of these experience gates are not to negate the judgment of examiners as to the veracity of an applicant’s qualifications, but are established to better guide controller proficiency which cannot always be assessed during limited evaluation periods.

5-32. Initial rating applicants are required to complete the minimum position hours indicated below before a facility rating can be completed and progression to RL 1. The control of live/simulated air traffic is required. The following gates are required for all initial rating applicants and include controllers possessing other type ratings:

- ATC Tower-80 position hours of which 50 percent of this time may be met using accredited simulation devices, the successful completion of the skills and knowledge evaluation required to receive this rating, and all required/selected tasks of the commander’s task list (CTL).
- AIC-80 position hours of which 50 percent of this time may be met using accredited simulation devices, the successful completion of the skills, and knowledge evaluation required to receive this rating, and all required/selected tasks of the CTL.
- GCA-10 unaided live approaches after the applicant has been PQ, the successful completion of the skills and knowledge evaluation required to receive this rating, and all required/selected tasks of the CTL. Live approaches are conducted with radar handoff procedures and include emergency, no-gyro, and surveillance approach criteria when established.

5-33. Accredited simulation devices should be used to maximize proficiency and controller development to reach the required knowledge and skill level required for the tactical ATS ratings. Simulation may be used during all training phases but is excluded from use during position qualifications, ratings, annual skill evaluations, and may not be used to meet any part of the 10 live approach requirements for a GCA rating.

5-34. The initial certification and rating process during the course of normal training is conducted by designated unit examiners. If facility operations exceed 120 days, a location or site specific FTP and rating process must be developed. If being assigned to a facility in which Phase 1 requirements have not been previously met, the controller will be required to complete a CTL for those requirements and receive a DA Form 3479-1 evaluation before RL 1 is awarded.

5-35. When an ATCS certificate holder transfers to another facility, he/she will retain his/her certificate. When he/she has met the requirements for a facility rating at the new location, a new endorsement will be made in the training record and on the certificate by the facility chief or designated military examiner. Figures 5-1 and 5-2 (page 5-7) depict examples of how ratings are annotated on FAA Form 7220-1.

![Figure 5-1. Sample FAA Form 7220-1, front](image-url)
Figure 5-2. Sample FAA Form 7220-1, back

**Note.** Area block will include unit of assignment and nomenclature of tactical system used for rating. Installation facilities will annotate unit of assignment and name of installation facility.

### CURRENCY REQUIREMENTS

5-36. Controller skills are perishable and require continued practice to maintain the highest level of proficiency. The routine exercise of air traffic controllers during aviation training events will help maintain individual skills, knowledge, build experience, and prepare controllers for their wartime mission. To maintain RL 1, controllers must meet the following currency requirements:

- ATC Tower-40 position hours controlling live/simulated air traffic for the preceding six months.
- AIC-40 position hours controlling live/simulated air traffic for the preceding six months.
- GCA-10 approaches during the preceding six months. Approaches will be conducted with established radar handoff procedures and include one live emergency and one live no-gyro approach.

5-37. All Facilities - Hours shall be distributed equitably among facility operating positions and no more than 50 percent of the required currency may be conducted using either accredited simulation devices or time spent providing direct supervision.

5-38. Facility chiefs shall develop measures to track controller position hours and report monthly totals on DA Form 3479-6 (Remarks column of Block 10) for the controller’s assigned facility.

5-39. Controllers not meeting RL 1 currency requirements outlined above will be reported at a lower RL until a controller evaluation is completed to assess proficiency.

**Note.** Controller proficiency will be assessed in the reporting period comprised of the preceding six months. Unit T-level ratings will be assigned according to Army Objective Assessment policy, AR 220-1, Unit Status Report (USR), and guidelines in this publication. Air Traffic Controllers assigned to staff positions and not performing duties involving the control of live traffic are not required to meet currency requirements.

### COMMUNICATIONS PROCEDURES

5-40. The SL on duty is responsible for all communications emanating from the facility. The facility chief will ensure periodic checks are made to detect and prevent unauthorized transmissions, as discussed below:

- The SL takes action to detect and prevent radio or telephone transmission of false or deceptive communications and obscene, indecent, or profane language. The SL is also responsible for detecting unauthorized or unassigned identifications and preventing willful or malicious interference with other communications.
- Besides normal ATC transmissions, the facility may need to transmit third-party messages about the safety of aircraft operations or the preservation of life or property.
ATC facilities may relay non-ATC instructions only when no other source of communication is available and the transmissions will not interfere with ATC instructions.

**OPERATING INITIALS**

5-41. The facility chief will assign controllers, two-letter operating initials. The facility chief will maintain a list of operating initials for all assigned personnel on a facility memorandum. Except where signatures are required, controllers will use the assigned operating initials on all interphone systems and facility forms and records.

**MEDICAL RESTRICTIONS TO AIR TRAFFIC CONTROL DUTIES**

5-42. Flight physical requirements for Soldiers assigned to tactical unit are the same as those required for controllers working at an installation facility as discussed in chapter two of this TC.

5-43. If a supervisor determines a controller’s physical or mental health is questionable, he will relieve the controller of ATC duties. The commander will refer the controller to a flight surgeon/medical examiner for an evaluation and a ruling. If a controller is receiving a substance or medical procedure that is likely to provoke an adverse systemic reaction, he will be restricted from ATC duties. The controller will not perform ATC duties until declared fit as prescribed in AR 40-501. AR 40-8 addresses the factors to consider and the appropriate medical restrictions to ATC duty.

5-44. Use of all medications will be with the knowledge of a flight surgeon or aeromedical physician’s assistant. Personnel ordinarily assigned to an operating position, including those who directly supervise within the facility, will not use the following drugs within a 24-hour period before assumption of duty unless a waiver is obtained:

- Sedatives.
- Tranquilizers.
- Any drug, such as but not limited to, anti-hypertensive agents or duodenal ulcer medications, which has an effect on the central nervous system.
- Any other drug and/or medication likely to affect the alertness, judgment, vision, equilibrium, or state of consciousness.

5-45. Controllers will not be assigned ATC duties for at least 72 hours after donating blood of 200 cc or more (formal flight surgeon restriction not required). Controllers will coordinate with the facility managers prior to giving blood to minimize impact on the duty schedule.

5-46. Medical restriction from flying duty will be for a minimum period of 12 hours following any immunization. If any type of reaction occurs, local or systemic, the aviator remains restricted from flying duties until cleared by a flight surgeon or aeromedical physician’s assistant.

5-47. Controllers must not perform ATC duties, nor directly supervise other controllers within 12 hours of consuming any amount of alcohol. If alcohol is used during off duty time, it should be conservative so mental alertness and ability to perform is not reduced by the after effects. Abstinence of 12 hours before commencing ATC duties does not guarantee the absence of residual effects.

**OPENING AND CLOSING TACTICAL FACILITIES**

5-48. The ATC unit commander establishes facility hours of operation per mission requirement. Opening and closing procedures and responsibilities will be coordinated with airfield operations and/or the ATC facility having IFR jurisdiction. If operations are conducted inside of a restricted area, coordination will be done with the organization having control of the restricted area. When opening and closing, part-time facilities will broadcast the service they are resuming or terminating. These procedures will also be included in a LOA between the unit and the controlling facility. The facility will publish its hours of operation in the appropriate NOTAM/aviation procedure guide (APG).
TACTICAL FACILITY SHIFTS AND WORK WEEKS

5-49. Shift and crew endurance procedures are as follows:

- Shift.
  - The installation ATC standard shift requirements listed in chapter one will be used to the extent possible.
  - Maximum duty day will not exceed 16 hours.
  - A duty day begins at the first required activity of the day for the controller such as Physical Readiness Training (PRT) formation.
- ATC crew endurance.
  - Unit commanders will design an ATC crew endurance program tailored to their mission and include it in their standing operating procedures. Unit commanders will consider the advice of the flight surgeon and aviation safety officer in designing their programs.
  - ATC crew endurance is an integral part of the overall risk management program. It is used to control risk due to sleep deprivation or fatigue and prescribe thresholds to trigger command decisions whether to accept the risk.

SHIFT REQUIREMENTS

5-50. Shift duty and actual shift manning will provide a qualified controller for each operating position in the facility. This does not preclude reducing the actual shift manning to the minimum during periods of limited flying activities. At least two controllers will be present for duty in the control TWR, GCA, or AIC facility. One must be facility-rated and the other position qualified on at least one position.

CONSOLIDATION OF OPERATING POSITIONS

5-51. The consolidation of operating positions will be determined by the facility chief in a facility memorandum outlining the circumstances in which positions may be combined. At least two controllers will be present for duty in the control TWR, GCA, or AIC facility. One must be facility-rated and the other position qualified in at least one position. The memorandum will include:

- Specific hours of the duty day that positions may be combined.
- Traffic conditions allowing position consolidation.
- Positions excluded from consolidation.

POSITION ASSIGNMENTS

5-52. Only ATC personnel who are qualified to perform the duties as outlined in AR 95-2 and this publication will man operating positions. Controllers will be assigned to positions as required by traffic, equipment, and individual qualifications. Controllers will have CTO/ATCS credentials readily available while assigned to an operating position.

5-53. Trainees will not be assigned to positions to which they are not qualified unless they are under direct supervision of a facility-rated controller.

5-54. Facility-rated controllers providing direct one-on-one supervision are directly responsible for operating the position. Trainees will not be assigned to more than one operating position at a time unless positions are permanently combined within the facility or the trainee is position qualified on both positions that are combined.

5-55. At the discretion of the SL, trainees may conduct precision or surveillance approaches during IFR conditions under certain circumstances.

5-56. They may conduct these approaches if:

- Direct one-on-one supervision is maintained.
- Direct communications override is available at the position of operation.
Weather conditions are acceptable (not less than a 500-foot ceiling or one-mile visibility).

TRANSFER OF POSITION RESPONSIBILITY

5-57. Position responsibility will be transferred according to FAAO JO 7110.65 Appendix A and appropriate facility directives. Transfer of position responsibility will be displayed so that it is easily accessible to the controllers and the relieving controller will—

- Read the recent information file, DA Form 3502, and any other operational data, equipment service and maintenance requirements specified.
- Obtain a briefing on communications, traffic and airfield conditions, equipment outages, and current and forecasted weather.
- Accept responsibility for the position only after ensuring the briefing is complete and all questions about the operation of the position have been resolved.

5-58. The relieving controller and the controller being relieved will share equal responsibility for the completeness and accuracy of the position-relief briefing. The facility chief will provide a tailored checklist of the equipment and conditions that will likely be a factor at each position during relief periods.

AIRCRAFT ACCIDENTS AND INCIDENTS

5-59. When a facility, service, or NAVAID has been involved in an aircraft accident or incident, the facility chief must act immediately. The facility chief will obtain accurate and complete information to base a detailed investigation. The responsibilities following an aircraft accident or incident are outlined below.

LEADER RESPONSIBILITIES

5-60. As soon as the facility chief, SL, or CIC receives notification of an accident or incident, he will—

- Notify the chain of command. When an aircraft accident/incident occurs and any part of a unit is known or suspected to have been involved. The notification will include—
  - Date/time of accident/incident.
  - Number/type aircraft involved.
  - Number of injuries/fatalities.
  - Brief synopsis of events to include ATC involvement.
  - Actions taken.
  - A point of contact by name, position, and telephone number to obtain additional information.
- Request a local weather observation, if weather support is available, unless there has been an intervening METAR or special observation.
- Record all appropriate details, including the local weather observation, on DA Form 3502.
- Mark and safeguard the recording media that is pertinent to the accident in the same manor described in chapter three of this publication. In the case of an incident, emergency or complaint about ATC service removal of recorded media before normal rotation time is unnecessary.
- Obtain a written statement about the incident or accident from all controllers and supervisory personnel involved. Written records pertaining to an aircraft accident will be retained for a minimum of 6 months. Written records pertaining to an aircraft incident will be retained for a minimum of 30 days.
- Relieve the controller for physical and psychological evaluation by the local medical officer or flight surgeon if there is any indication the controller contributed to the accident or incident. The controller will obtain a clearance from the local medical officer or flight surgeon before returning to duty. The controller will be transported to the local medical facility according to AR 385-10.
- Examine the condition of the equipment, along with technically certified maintenance personnel, to determine whether it could have contributed to the accident or incident.
Note. Additional instruction pertaining to facility actions will be contained in the facility position binder.

INFORMATION RELEASE

5-61. No personnel may give interviews, make statements, or release any written or recorded information to news agencies or unauthorized personnel or organizations. Information on an aircraft accident, incident, or alleged violation of any kind will not be released outside official Army channels without approval from the commander, USAASA. The identity of personnel involved will be treated as restricted information. The installation commander may approve the release of information to Army organizations and Army press releases after consultation with the Public Affairs Office and the Staff Judge Advocate.

ACCIDENTS OR INCIDENTS INVOLVING RADAR FACILITIES

5-62. When an accident or incident involves, or is suspected to have involved radar equipment, the facility will discontinue radar service until a flight inspection is performed.

SECTION III – PERSONNEL TITLES, QUALIFICATIONS, RESPONSIBILITIES, AND RESTRICTIONS

5-63. This section outlines the individual responsibilities and addresses qualifications for the personnel listed below.

AIR TRAFFIC CONTROL PLATOON LEADER

5-64. The platoon leader is an MOS 150A Air Traffic and Airspace Management Technician warrant officer. He/she supervises employment of platoon personnel and equipment. The platoon leader also—

- May serve as an ATC Specialist/CTO examiner and execute ATC duties if requirements of AR 95-2 and appropriate FAA orders are met.
- Manages and supervises ATC personnel.
- Is thoroughly knowledgeable of procedures and standards for separation and control of manned and unmanned systems, airports, and airspace.
- Provides standardized training and quality assurance of certification programs.
- Develops interim instrument procedures, reviews TERPs packets, and directs the certification process of associated NAVAIDs and facilities.
- Assists in development and revision of controlled and special use airspace.
- Provides technical expertise on installation and operation of ATC equipment.
- Applies procedures for cancellation, suspension or reissuance, and withdrawal of certificates and facility ratings.
- Provides ATS input for the development and revision of APGs.
- Monitors air traffic training development, proficiency, and facility assignments
- Provides recommendations on ATS reclassifications, medical suspensions, and flight fitness actions to the commander.
- Participates in airspace working groups to ensure integration and synchronization is accomplished.
- Ensures that the airspace control order and air tasking order is received, displayed, and understood.
- Provides recommendations in the development of the unit airspace control plan and ensures Annex C, Appendix 10 is received and included during the orders brief.
- Assists the commander with the development of a company deliberate risk assessment worksheet.

5-65. Platoon leaders will complete both phases of the tactical training program in the most complex facility under their supervision or for the type facility for which no previous rating was held. They will also complete
Phase I of the training program for all other facilities under their supervision. Platoon leaders should strive to achieve and remain RL 1 in order to provide the unit with flexibility and quality training of controllers.

PLATOON SERGEANT

5-66. The platoon sergeant is an MOS 15Q40 ATC operator. The platoon sergeant is the primary assistant and advisor to the platoon leader concerning all aspects of operations, personnel, administration, ATS services, and equipment emplacement. The platoon sergeant also—

- May serve as an ATC specialist/CTO examiner and execute ATC duties if requirements in AR 95-2 and appropriate FAA orders are met.
- Assumes responsibilities of the platoon leader in his or her absence.
- Ensures cross-training strategy is developed and maintained.
- Provides recommendations during the development of the unit training strategy.
- Evaluates training and execution of collective and individual tasks in accordance with the combined arms training strategy.
- Reports readiness to the platoon leader and requests assistance when the training strategy cannot be met.
- Applies standards, time limitations, and policies for issuing controller qualification, certification, and facility ratings to ATC personnel.
- Participates in unit airspace working groups to ensure integration and synchronization is accomplished.
- Ensures that the airspace control order and air tasking order is received, displayed, and understood.
- Provides ATS input for the development and revision of APGs.
- Reviews the Terminal Instrument Procedures (TERPS) data collection results and packet with the platoon leader.

5-67. Platoon sergeants will complete both phases of the tactical training program in the most complex facility under their supervision or for the type facility for which no previous rating was held. They will also complete Phase I of the training program for all other facilities under their supervision within 90 calendar days after facility rating. Platoon sergeants should strive to remain RL 1 in order to provide the unit with flexibility and quality training of controllers.

AIR TRAFFIC CONTROL CHIEF

5-68. The ATC Chief position is only found in the airfield operations battalion. The ATC chief’s responsibilities include—

- Supervises and manages all ATC facilities under his control at an airfield, heliport, or field site.
- Provides liaison on matters of ATC and airspace with the AT&A; DA representative; FAA; major Army commands; local post, camp, or station commander; and representatives of other units, agencies, or commands.
- Ensures ATC systems are operationally acceptable.
- Ensures facilities collect and safeguard data on aircraft mishaps, emergencies, or violations.
- Ensures assigned ATC personnel maintain currency.
- Ensures facilities conduct training and rating programs according to prescribed regulations.

FACILITY CHIEF

5-69. The facility chief manages a single tactical ATC facility and must be facility rated and have completed facility management and administration training prior to assuming the position. The facility chief’s duties include—

- Ensures the facility operates according to military and FAA, ICAO, and host nation rules and regulations.
- Gathers, reviews, and verifies TERPS data associated with assigned facility.
Tactical Facility Administration

- Ensures all controllers meet the physical standards of AR 40-501 and/or local/host nation requirements.
- Ensures the operational readiness of facility equipment and associated NAVAIDs.
- Maintains a current file of pertinent regulations, manuals, charts, maps, and training material listed in appendix A.
- Ensures assigned personnel maintain currency.
- Maintains custodial control of all facility forms, records, and publications and ensures their accuracy, completeness, and distribution.
- Initiates and maintains a facility duty schedule.
- Conducts position qualification evaluations.
- May serve as ATCS/CTO examiner if requirements listed in AR 95-2 and FAAO 7220.1 are met.
- Administers annual written exams and conducts skill evaluations.

5-70. The facility chief has specific duties dependent of the facility of assignment (see TC 3-04.6 for these duties).

### SHIFT LEADER

5-71. During the SL’s tour of duty, they are responsible to the facility chief for the efficiency of facility operations. SLs must be facility rated and have completed facility management and administration training prior to assuming the duties of this position. They also perform normal ATC duties in addition to those of the SL. The SL—

- Assigns and directs all phases of the subordinates work.
- Ensures personnel receive OJT and conducts assessments of training through the administration of controller evaluations (DA Form 3479-1).
- Conducts position qualification evaluations when directed by the facility chief but are restricted from conducting annual skill evaluations.
- Assists and advises controllers during emergencies.
- Maintains facility records.
- Ensures personnel are current and proficient.
- Notifies search and rescue facilities of aircraft in distress and provides assistance and advice.
- Delegates responsibility to subordinates and assists the facility chief.
- Evaluates the operational effectiveness of facility systems, subsystems, and equipment.
- Records and reports outages and takes action to correct discrepancies.

### CONTROLLER-IN-CHARGE

5-72. A CIC will be designated to assume the duties of the SL under the following conditions:

- When supervisory personnel leave the facility or are off duty, the facility chief will designate a CIC for the period the supervisor is absent. Assigning a CIC assures coordination and cooperation will continue when the SL is not available.
- The CIC will assume duties and responsibilities of the SL. He also performs his normal ATC duties in addition to those of the SL.
- CICs may conduct controller evaluations but are restricted from conducting position qualification assessments and annual skill evaluations.

5-73. Prior to being designated as a CIC, controllers will meet the following prerequisites:

- Be operationally current in the facilities CIC duties are to be performed.
- Be selected by the ATC/facility chief.
- Successfully complete administration and management training.

5-74. The facility chief will appoint the CIC assignment from the facility’s potential supervisors. The facility chief may designate more than one CIC per shift to ensure coverage is achieved during leaves, illnesses, or
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temporary groundings. The CIC duties should be rotated to expose the controller to supervisory duties and responsibilities. All eligible controllers who meet these prerequisites will be considered for selection as CIC.

5-75. Facility chiefs will determine facility requirements for CICs considering—

- Facility operational needs.
- Scheduling concerns.
- Staffing concerns.
- Special events.
- Other issues.

5-76. Facility chiefs will evaluate controllers based on their knowledge, skills and abilities. Included in these three areas are—

- Problem solving and analytical ability.
- Planning and organizing.
- Decisiveness.
- Judgment.
- Communication skill.
- Interpersonal skill.

CONTROL TOWER OPERATOR AND AIR TRAFFIC CONTROL SPECIALIST EXAMINERS

5-77. CTO and ATCS examiners will be designated and assume duties as outlined below:

- Military CTO and ATCS examiners will be designated according to AR 95-2, FAAO 7220.1, and this publication. AR 95-2 explains how to request examiner designations. The facility-rated controllers meeting the requirements of AR 95-2 may be recommended for designation as examiners.
- Two ATCS examiners may be appointed per tactical facility.
- During the planning stages, leaders must consider the possibility that issuance of temporary FAA CTO certificates will be required for temporary locations.
- Examiners will administer CTO and ATCS facility rating tests according to 14 CFR Part 65, FAAO 7220.1, and this publication. They conduct the tests properly and complete, maintain, and submit the related forms and records according to procedures in FAAO 7220.1.
- CTO and ATCS examiners—
  - Maintain test security.
  - Develop and maintain the facility rating tests.
  - Make sure applicants meet eligibility requirements.
  - Issue temporary CTO certificates and sign ATCS certificates.
  - Administer all prescribed written and practical tests for the facility-rating exam.
  - Maintain a record of ratings issued (by name, date, and type) and retain the record in files.
  - Report testing or certification irregularities or problems, as appropriate, to the platoon sergeant (PSG)/facility chief.
  - Conduct annual skill evaluations.
  - ATCS examiners will be at a minimum Phase I equipment training complete on the associated facility, with supporting annotation in Sections I and II of DA Form 3479 and meet all requirements of AR 95-2.

AIR TRAFFIC CONTROL SYSTEM MAINTENANCE SUPERVISOR

5-78. The ATC Systems Maintenance Supervisor is responsible for all ATS equipment maintenance. Duties include, but are not limited to, the following:
- Coordinate maintenance-related issues, such as LOA, on-call rosters, and NAVAID scheduled maintenance with the PSG or facility chief.
- Ensure maintenance facilities are maintained according to applicable military and FAA publications and standards.
- Ensure the qualifications of maintenance personnel.
- Coordinate ATC equipment maintenance with support and supported units.
- Establish a maintenance training and certification program for the local facility.
- Coordinate facility configuration changes with the platoon leader/PSG and higher headquarters.
- Maintain a current file of pertinent regulations, manuals, and training material listed in appendix A.

SECTION IV – TACTICAL EQUIPMENT

5-79. This section discusses ATC facility equipment, equipment checks, facility maintenance, and information on recorded media.

COORDINATED UNIVERSAL/LOCAL TIME

5-80. All ATC facilities will use UTC and date in all operational activities. Local time will be used for facility duty schedules, daily traffic counts, and other administrative forms and correspondence.

5-81. A reliable clock will be visible from each operating position in all ATC facilities. Clocks will be checked at the beginning of each shift. The results of time checks will be logged on DA Form 3502. Time checks will be performed according to FAAO JO 7210.3. In a tactical environment, ATC facilities will obtain a time check from the next higher control facility or from GPS.

LIGHT GUNS

5-82. ATC light gun color codes and meanings will be attached to the back or side of the light guns. ATC light guns will be adjusted to provide a red light when activated.

EQUIPMENT CHECKS/CHECKLIST

5-83. The facility chief will establish an equipment checklist to be completed at the beginning of the day. If radio checks cannot be completed during the facility’s duty day this will be annotated on the DA Form 3502 in the closing statement. DA Form 3502 will be used to record the results of equipment checks.

5-84. The equipment checklist will be a locally produced form; the checklist may be a separate form, or it may be placed on the back of DA Form 3502. This form is not intended to circumvent the Army maintenance system but only to serve as a list of equipment that must be checked. Controllers must complete standard Army maintenance forms on equipment requiring them. The equipment checklist will be initiated at opening of the facility and reviewed at the beginning of each shift. Completed checklists will be filed with and retained the same as DA Form 3502.

5-85. If all equipment is operational, the entry on the form may be limited to “checklist complete.” If outages occur, the entry must identify those outages, the name of the agency notified, and their operating initials, for example, “checklist complete; LIGHT GUNS OTS MAINT/CB NTFYD.”

5-86. On DA Form 3502, a capital “E” (equipment) will be placed in the time (UTC) column to the left of entries showing equipment out-of-service time and return-to-service time. The “E” for a specific equipment outage need not be repeated each day thereafter unless the equipment returns to service. Examples of these are, “E 0800, checklist complete, 126.2T OTS MAINT/CB NTFYD” and “E 0810, 126.2T return to service, radio and recorder checks complete.”
TACTICAL ALTIMETER-SETTING INDICATORS

5-87. Tactical ATC facilities not equipped with calibrated altimeter-setting indicators will obtain settings from supporting Air Force weather teams.

RADIO EQUIPMENT

5-88. During the hours of operation, ATC facilities will continuously monitor all assigned radio frequencies to include emergency frequencies VHF 121.5 and UHF 243.0.

RECORORDER CHECKS AND RECORDED MEDIA

5-89. Facility memorandum will be developed outlining the procedures for changing, marking, loading, and securing recorded media, and for controller/maintenance responsibilities. It is imperative that all controllers and maintenance personnel are properly trained to check the recorder, change the recorded media, and perform PMCS. This training will be noted in Section II of DA Form 3479.

5-90. At the beginning of each shift, the SL or CIC will ensure all recording channels are operating properly. Controllers will monitor the quality of recording during their assigned shift.

5-91. The facility chief and the maintenance chief will establish written procedures to ensure the recording quality is checked after all radio, recorder, or telephone equipment maintenance. These checks will be noted on DA Form 3502.

NAVIGATIONAL AIDS

5-92. All NAVAIDs must pass an internal flyability check before VFR use and a flight inspection before IFR operations are conducted. The procedures contained in FAAO 8260 Series will be used to construct a precision or non-precision approach that will service the terminal area. The en route criteria will be established by the Airspace Control Authority (ACA). Critical information about tactical approach procedures at instrumented heliports and airfields must be developed by the facility responsible for the approach. This information must be disseminated to the aviation units, AIC facilities, and the appropriate airspace control elements for inclusion in the Airspace Control Order (ACO), Aviator Procedures Guide, special instructions (SPINS), and other related airspace information documents. The following actions will be accomplished to prepare for a flyability check or flight inspection:

- Ensure all personnel are familiar with FAAO 8200.1 and FAAO 8240.41.
- Provide accurate facility data for new or relocated facilities.
- Develop an LOA concerning the airspace used for the approach procedure.
- Assign the best-qualified controller available.
- Establish communications on a single dedicated frequency.
- Ensure all facility equipment is calibrated according to applicable manuals.
- Ensure maintenance personnel will be available to make corrections and adjustments.
- Provide transportation to move flight inspection equipment and personnel if required.

5-93. DA Form 3501-2, Flyability Check Evaluation, will be used to annotate the results of the flyability check. Figure 5-3 (page 5-17) is an example of a completed DA Form 3501-2.
Figure 5-3. Sample DA Form 3501-2

5-94. The approach control facility is normally designated the primary NAVAID monitoring facility. At locations without an approach control, the TWR is designated the primary NAVAID monitoring facility.
UNITED STATES ARMY RADAR FLIGHT INSPECTIONS

5-95. Standard radar instrument approach procedures are as follows:

- Bearings, headings, courses, and radials are magnetic.
- Elevations and altitudes are in feet, mean sea level, except height above touchdown, height above airport, threshold crossing height, and radio altimeter.
- Altitudes are minimum altitudes unless otherwise indicated.
- Ceilings are in feet above airport elevation.
- Distances are in nautical miles unless otherwise indicated, except visibilities in statute miles or in feet runway visual range.

5-96. Initial approach minimum altitudes will correspond with those established for en route operations in the particular area or as set forth below. Positive identification must be established with the radar controller. The instructions of the radar controller are mandatory from initial contact to final authorized landing minimums, except when—

- Visual contact is established on final approach at or before descent to the authorized landing minimums.
- At pilot's discretion if it appears desirable to discontinue the approach.

5-97. Unless otherwise directed prior to final approach, a missed approach will be executed when—

- Communications on final approach are lost for more than 5 seconds during a precision approach, or for more than 30 seconds during a surveillance approach.
- Directed by radar controllers.
- Visual contact is not established upon descent to authorized landing minimums.
- Landing is not accomplished.

ATNAVICS DATA RECORDING FACILITY MEDIA

5-98. The ATNAVICS is equipped with a data recording facility. The GCA facility will use the data recording facility during all ATC operations according to TM 11-5840-381-10. The recorded media from these systems will be labeled, stored and handled as directed according to FAAO 6191.2.

MONITORS

5-99. Monitors that do not provide an automatic visual or aural alarm will be checked at least once an hour. When an ATC facility is responsible for monitoring NAVAIDs, the facility chief will include monitoring instructions in the FTM. If a NAVAID monitor alarm is received, the identification feature will be checked aurally and the responsible maintenance authority notified immediately. If the alarm cannot be silenced and the identification feature cannot be heard, the NAVAID is considered inoperative.

5-100. If personnel suspect a control line or monitor failure rather than a malfunction of the NAVAID causes an alarm, they must take the appropriate action per local SOPs and the FTM. If a malfunction is confirmed, use of the NAVAID will be discontinued. A NOTAM will be published showing NAVAIDs with inoperative monitors as unmonitored.

Interruptions and Malfunctions

5-101. The facility chief establishes procedures for reporting interruptions to NAVAIDs and malfunctions in communications and radar equipment. They ensure the timely response of maintenance personnel to a report of an interruption or a malfunction.

5-102. The on-duty SL or CIC will report any known or reported malfunction in equipment or interruption to a NAVAID to the appropriate office; for example, maintenance personnel, ARTCC, approach control facility, and any other facility that may be affected. He then reports the malfunction or interruption to the airfield commander.
METEOROLOGICAL MEASURING SYSTEM (MMS) EQUIPMENT

5-103. MMS sensors should be located at the landing and takeoff area in accordance with UFC 3-260-01, Airfield and Heliport Planning and Design. Because of terrain, distance, and local operational requirements, MMS equipment may be located at the landing and takeoff area as follows:

- VFR runways. Abeam the landing area 1000 to 3000 feet from landing threshold and 500 to 1000 feet from centerline.
- IFR runways. Abeam the landing area 1000 to 3000 feet from landing threshold and 750 to 1000 feet from centerline.
- Heliports. No more than 700 feet from the edge of the landing area.

5-104. Readout values derived from transmitters not located at the landing and takeoff area will be used as an aid to determine estimated wind conditions. Estimated wind values transmitted to other facilities and to pilots will be reported as wind estimated (for example, “WIND ESTIMATED TWO ONE ZERO AT FIVE”).

NIGHT VISION DEVICES

5-105. Controllers will be trained in the operational use of NVDs at required locations. All NVD training will be entered on DA Form 3479, Section II. ATC facilities or units using NVDs will establish a training program for their use.

OPERATION AND CARE

5-106. Orientation and briefing on NVD operation and care consists of a class on the characteristics, function, and maintenance of NVDs according to the applicable TMs, to include—

- Removal of NVDs from the receptacle, ensuring pressure is released.
- Removal of the front lens covers.
- Insertion of the battery.
- Adjustments of short gauge for FD and adjustments of infinite for local and GC.

Preparation of the Control Tower

5-107. This instruction includes—

- Use of minimum lighting.
- Covering the console to prevent reflection.

Hands-On Training

5-108. Hands-on training consists of an orientation after dark, to include—

- Instruction on distinguishing prominent terrain and other objects in the area.
- Unimpaired vision of traffic areas.
- Adjustment of devices, as required.
- Distinguishing an aircraft with minimum lighting.
- Difference between participating and nonparticipating aircraft.
- Strict observation of aircraft at all times.
- Control of airfield and landing area lighting.

Visual Contact Loss

5-109. To reestablish contact, the controller must—

- Know the altitude of the aircraft.
- Request aircraft position reports.
- Use known landmarks.
- Have the observation confirmed by another controller.
Night Vision Device Procedures

5-110. To establish local NVD procedures, the PSG/facility chief will coordinate with the airfield commander or the senior field aviation commander supported. These procedures should include—

- NVD routes.
- Traffic density.
- Airfield lighting.
- Hours of operation.
- Traffic restrictions.
- Emergency procedures.
- Weather requirements.
- Nonparticipating traffic.
- Aircraft lighting (lights out or dim mode).
- Publication of a NOTAM, if required.

5-111. Air traffic controllers will be familiar with any exemptions or waivers, which may grant relief to the requirement of CFR 14, Part 91.209 concerning aircraft lighting requirements.

THEODOLITE

5-112. The accuracy of theodolite measurements depends on the proper care, setup, and adjustment of the instrument. See the TM or manufacturer’s publication for the proper setup, leveling, and sighting of the theodolite.

5-113. Appendix D of this TC and the ATNAVICS TM Work Packages address the steps used in the TERPS data collection. DA Form 3501-1, Precision Approach Radar (GCA) Data, will be used to record measurements.

MOBILE TOWER SYSTEM AIRFIELD LIGHTING SYSTEM

5-114. The mobile tower system (MOTS) TM addresses the setup, operation, and maintenance of the MOTS airfield lighting system (ALS). See UFC 3-535-01 for MOTS ALS use on a night visual, non-precision, or precision runway in a theater of operations.

5-115. ATS units operating an emplaced MOTS ALS will perform a diagnostic check of the runway and/or landing zone (LZ) lights at the beginning of each duty shift or after any ALS maintenance according to the MOTS TM Work Package 30 using the Handheld RF Remote or MOTS Server. The diagnostic check and results will be noted on DA Form 3502 or the equipment checklist.
Chapter 6

Tactical Air Traffic Services

ATS units promote safe, flexible, and efficient use of airspace while enhancing air operations for ground force initiatives through airspace information, terminal ATC, and navigational support services.

SECTION I – TERMINAL TOWER OPERATIONS

6-1. Terminal tower operations are executed by either the control tower team or the tactical aviation control team (TACT). Each of these teams is responsible for control of aircraft operating within terminal airspace. The teams are also responsible for air and ground traffic operating on runways, taxiways, and other designated areas of the airfield. Responsibilities include—

- Coordinating the development of specific terminal airspace procedures peculiar to the airfield.
- Interfacing with military/civilian agencies to ensure tower ATC services are coordinated within the ATS plan for the theater of operations.
- Understanding the ACO, SPINS, and the Airspace Control Plan (ACP).
- Resolving air traffic conflicts within the terminal control area.
- Developing standard ingress/egress procedures for UAS operations.
- Dissemination of current and forecasted weather information.
- Establishing electronic data links to Army Mission Command Information Systems for terminal facilities.
- Employing and operating the MOTS ALS to control existing airfield lighting or provide a portable airfield/LZ lighting capability for a runway or landing area.

6-2. Control tower teams and TACTs may be employed at tactical landing sites or main operating bases where high density air traffic exists. These teams are responsible for controlling transitioning, landing, and departing aircraft. Aircraft movements in, out, and through the terminal area are closely coordinated to ensure deconfliction of airspace and fratricide avoidance.

WEATHER TRAINING

6-3. All controllers shall complete initial qualification (Q) weather training before starting phase II. Weather training is valid for a 12-month period and must be renewed by or prior to the anniversary month of their previous training. As part of these certifications, the ATC chief/facility chief will ensure comprehensive training is given to tower controllers by weather personnel on tower (prevailing) visibility. Tower visibility training includes—

- Definitions.
- Visibility determination criteria and procedures.
- Reporting procedures.
- METARs training, including—
  - Reading aviation weather reports.
  - Abbreviations.

6-4. The results of initial (Q) and annual training (P) will be entered on DA Form 3479 in Section II. Required entries in Section II include the date training was completed, total training time, and test results if applicable. If remedial training is required, it will be completed as previously outlined, except an “R” will
indicate the type of training given. (See appendix F for additional information on annotating remedial training.)

WEATHER DATA

6-5. The airfield weather status (IFR or VFR) will be posted to DA Form 3502 when daily operations begin. As it changes during the day, the status is again posted to the form.

6-6. Weather support for Army tactical operations is based on the following principles:
   - Tactical units must consider weather effects during all planning and operational phases, including deployment and employment.
   - Commanders must consider favorable and unfavorable weather conditions to determine the best course of action to accomplish the mission.
   - Accuracy of weather forecasts depends on the density and timeliness of weather observations.

6-7. The Air Force provides the weather support required by the Army. AR 115-10 specifies each service’s functions and responsibilities associated with that support. The USAF weather service provides—
   - Weather personnel with the technical training and skills necessary to support the Army.
   - Direct weather support for theater, divisions, separate brigades, aviation brigades, regiments, and groups according to jointly agreed upon tactical doctrine and operational support concepts.
   - Weather training for Army personnel assigned to take limited surface weather observations in support of Air Force forecasting operations or Army ATC operations.
   - Possible effects of weather on systems, tactics, and operations based on critical threshold values identified by the Army.
   - Weather observations, forecasts, staff support, and timely warnings of expected weather that may adversely affect operations or that could be a hazard to personnel or materiel.
   - Weather support products for use in soil trafficability and hydrographical prediction.
   - Unique and specialized meteorological observations and forecasts of data elements not included in standard surface weather observations or critical values on request.
   - Weather support for tactical missions, intelligence, and tactical decision aids.

Visibility Checkpoint Charts

6-8. During extended tactical operations, control tower facility chiefs will prepare visibility checkpoint charts in conjunction with the airfield weather services team. The weather teams will have range-finding equipment, which can accurately measure objects to be used as reference points. Facility chiefs will use these charts to report tower visibility and to observe changes in the reported visibility. When the official report and the tower observation differ, the tower will report the tower visibility to the weather station and the terminal radar facility. The lesser of the surface (official) and tower visibility will be used for aircraft operations. Tower visibility may include the entire surface area or any portion of the area. For example, “Tower visibility is two and one-half miles” or “Tower visibility to the south is one-half mile.” When tower visibility is less than four miles and differs from the reported values, it should be included in the remarks section of an official weather observation. Tower visibility is also transmitted to all arriving and departing aircraft.

SECTION II – RADAR OPERATIONS

6-9. The GCA team provides IMC recovery capability through ASR and PAR approaches. The GCA team operates in conjunction with a control TWR team, to form a fully instrumented airfield. The GCA team is responsible for—
   - Conducting site surveys and collecting data used to initiate TERPS.
   - Coordinating and assisting with flight inspection procedures/flyability checks.
   - Developing specific GCA procedures particular to the airfield.
   - Coordinating with other military/civilian agencies to ensure radar ATC services are coordinated within the ACP for theater of operations.
RADAR SERVICE

6-10. Radar service will be provided only when the controller has a suitable target and is satisfied that the presentation and the equipment performance are adequate for the service provided.

DAILY PERFORMANCE CHECKS

6-11. The daily radar performance check will be part of equipment checks. Controllers will accomplish this check once each shift, unless lack of traffic makes it impossible. For radar performance checks, ASR systems will have a usable target return maintained along the entire airway/route or arrival/departure control route for which service is provided. Tracking accuracy along these routes will be within the fix/map accuracy (as described in part I, chapter 2 of this publication).

SECTION III – AIRSPACE INFORMATION CENTER OPERATIONS

6-12. The AIC team provides en route flight management services to friendly aircraft operating within assigned airspace. The actual airspace assigned is dictated by the assigned mission and communications capabilities. Additionally, the AIC team displays the common operating picture on the tactical airspace integration system (TAIS) as it is received from other battlefield automated system (BAS) feeds within the Army Mission Command information systems. The AIC team monitors airspace users and ensures aircraft operate within the parameters of the ACO. The team coordinates emerging airspace requirements for current operations, broadcasts air and ground threats to participating aircraft, and maintains situational awareness of unmanned aerial systems within their area of responsibility.

6-13. The AIC is responsible for—

- Developing specific airspace information and flight coordination procedures specific to the assigned area of operations (AO).
- Coordinating with other military/civilian agencies to ensure AIC services are coordinated within the theater ACP and published APG or AIP.
- Ensuring data and communication links are established for connectivity to other Mission Command Systems and ATC facilities.

6-14. AICs, with a staff of qualified ATC personnel, will provide communication and control of corridor feeder-route systems, chokepoints, crossing corridors, and transition areas in cantonment areas, training areas, and ranges. When required, these facilities provide altitude or other means of separation. In addition, they—

- Issue advisories allowing pilots to separate their aircraft from other aircraft and activities or adverse weather that may endanger the aircraft.
- Monitor the flight progress of all participating aircraft within the facility area of responsibility.
- Advise other area users of aircraft activity that may impact on, or conflict with, the mission or activity.
- Provide assistance during emergencies.
- Assist with search and rescue efforts, as needed.

6-15. AICs should be prepared to support Joint Air Ground Integration Center (JAGIC) command post displacement operations and increasing ADAM/BAE capabilities and capacity during deliberate operations with several airspace users. The AIC is instrumental in providing command and control for select areas on the battlefield and airfields. When tasked, the AIC can help augment the airspace control capabilities in the JAGIC. If the division JAGIC needs to displace, the AIC can be used to assist the temporary JAGIC in managing division assigned airspace.

6-16. Unit leaders must ensure the Soldiers assigned to the AIC are properly trained and able to execute the assigned AIC mission. AIC team members should attend the Army Joint Support Team’s echelons above brigade airspace course at Hurlburt Field, FL and be familiar with the airspace control collective tasks listed in FM 3-52.
6-17.

PROCEDURES

6-18. The procedures developed for conducting day-to-day operation of an AIC depend on a number of circumstances. Local requirements often govern exact operational procedures. The procedures and requirements below establish a minimum standard and will apply to all Army AICs.

6-19. Each facility will have an up-to-date map of its area of responsibility. Each map will depict the following areas and routes:

- Explosive ordnance disposal/hazardous cargo route.
- Ranges.
- NAVAIDs.
- ADIZs and no-fly areas.
- Prominent obstructions.
- Mandatory reporting points.
- Radio and radar blind spots.
- Airfields and landing areas.
- Restricted/prohibited areas.
- Aircraft entry and exit points.
- Changeover points.
- Corridors, transition areas, training areas, and ranges.
- The same grid system as other area ATC and search and rescue facilities.

6-20. The flight progress of participating aircraft will be monitored, and the maximum time between position reports will be 30 minutes. Less time may be required depending on the type, length, and area of routes (such as an NOE route).

6-21. The facility’s area of responsibility will be divided into as many subareas as necessary to simplify recognition and reporting. Each area will be lettered, numbered, or named. The boundaries of these subareas; such as rivers, roads, and power lines, should be easily recognized from the air.

6-22. Procedures will be developed to ensure the timely receipt and dissemination of area weather information.

6-23. Procedures will be developed between the AIC facility and other area ATC facilities to ensure timely control information is passed. LOAs will establish procedures concerning hand-offs, control transfers, flight plans, and arrival and departure times.

6-24. The facility should have the capability of communicating with other ATC facilities and agencies using or operating within the facility area of responsibility. Standard ATC radio and interphone phraseology will be used in all facility communications.

6-25. The facility area and airspace is determined by the airspace control authority. The area and airspace may or may not contain a restricted or prohibited area, overlap, underlay or join another ATC facility area or airspace. FAAO JO 7400.2 and FAAO JO 7610.4 contain additional information on the procedures for handling airspace matters and special military operations for operations within the NAS.

SECTION IV – UNMANNED AIRCRAFT SYSTEMS

6-26. Airspace deconfliction is a major consideration during any UAS operation. Effective airspace control prevents mutual interference for all users of the airspace, facilitates AD identification, and accommodates the safe flow of all air traffic. Although UAS frequently operate from tactical field locations, constant communications with the ATS and airspace agencies in theater is required.
DECONFLICTION TECHNIQUES

6-27. Basic techniques for deconflicting UAS operations are—

- Altitude separation.
- Geographical separation, typically by keeping the UAS to one side of a feature such as a road or river.
- Time separation or moving the UAS out of the objective area before aircraft or ordnance arrives.
- A restricted operating zone or track that confines the UAS to a specific region of the airspace.

6-28. Some UAS are equipped with a communications relay package that enables direct communication between the UAS operator and the controlling airspace agency.

6-29. UAS missions, changes in launch or recovery site locations, UAS altitudes; operating areas, identification friend or foe squawks, and check-in frequencies are reflected in the daily ATO, ACO, or SPINS and disseminated to appropriate ATS, aviation, and ground units.

6-30. Planners monitor current UAS airspace requirements to anticipate future airspace requirements based on the emerging tactical situation. Changes in allocation of close air support, artillery, Army aviation, and the dynamic re-tasking of UAS will cause conflicts in airspace use. To address these changes, the supported unit should have a periodic airspace control meeting with all the key players (brigade aviation element, S-3 air, Air Liaison Officer, and ATS) to address these issues. A comprehensive LOA is required between the UAS operators, airfield management, and affected ATC facilities.

AIR TRAFFIC CONTROL SEPARATION AND PHRASEOLOGY

6-31. The following are the standards for use of phraseology and separation when controlling UAS in a terminal area:

- Treat UAS as category A aircraft.
- Radar facilities will apply category A separation standards to UAS operations outside of established active restricted areas.
- The restricted area-using agency will establish separation criteria to ensure safe operations within their restricted areas.
- US Army ATC facilities will utilize standard phraseology as prescribed in FAA JO 7110.65 for communications between ATC and UAS pilot/operators.

AIR TRAFFIC CONTROL PROCEDURES

6-32. ATC will adhere to the following procedures when controlling UAS:

- **Description of aircraft types.** Describe UAS to other aircraft by stating U-A-S.
- **ATIS procedures.** Make a new recording when UAS operations are in effect or have terminated for the day.
- **Sequencing and separation.** UAS pilots cannot be instructed to follow another aircraft.
- **Simultaneous same direction operations.** All UAS will be treated as “other” aircraft.
- **Same runway separation.** All UAS will be treated as category III aircraft.
- **Use of visual separation.** Not authorized for UAS operations.
- **Preventive control.** May be applied according to FAA JO 7110.65.
- **Opposite direction operations (ODO).** Not authorized for UAS.
- **Special VFR operations.** Not authorized for UAS.
- **Operations requiring UAS to maintain visual separation.** Not authorized for UAS.

Transient Aircraft Procedures

6-33. ATC keep the UAS pilot/operator apprised of any known transient aircraft that may affect operations. The UAS pilot/operator will take necessary actions to maintain lateral and vertical separation. ATC should...
provide UAS pilot/operator recommended altitudes or direct to pre-determined points (UAS zones) to ensure deconfliction.

**Wake Turbulence Advisories**

6-34. ATCs apply the following procedures:

- Issue cautionary wake turbulence advisories, and the position, altitude and direction of flight to the UAS pilot/operator landing behind all manned aircraft.
- Wake turbulence rules cannot be waived by UAS.

**No Radio Aircraft Procedures**

6-35. ATC will—

- Notify UAS pilot/operator of any known NORDO aircraft.
- Broadcast on emergency frequencies when a NORDO aircraft is present to establish two-way radio communications with the NORDO aircraft.

6-36. UAS pilot/operator, assisted by ATC will determine the best method to separate UAS and NORDO aircraft. Examples methods include—

- UAS may proceed to UAS zone and hold.
- Cease operations if it will not aggravate the situation.
- Altitude deconfliction.

**Emergency Procedures**

6-37. ATC will apply the procedures listed in chapter 10 of FAAO JO 7110.65. The safety of manned aircraft will take precedence over UA in an emergency.

6-38. If primary radio communications between UAS and ATC are lost, UAS or ATC will be notified immediately via predetermined alternate communications method. Failure to establish and maintain radio communication between UAS and ATC will require termination of UAS operations.

6-39. If lost link occurs, the UAS pilot/operator will immediately notify ATC with—

- Time of link loss.
- Last known position.
- Altitude.
- Direction of flight.
- Conformation of execution of lost link procedures.
- Conformation of visual contact with UAS.

*Note.* UAS lost link is an emergency, but may not require crash rescue services.

6-40. In the event of a lost link, lost communications between UAS and ATC or lost communications between UAS pilot/operator and observer, ATC will follow procedures in FAAO JO 7110.65 and—

- Cease aircraft launches until status of affected UAS is determined.
- Recover other UAS as appropriate.
- Issue advisories and ATC instructions as appropriate to ensure the safe operation of all aircraft.

**LOA between ATC facilities and UAS Units**

6-41. LOAs should be developed according to FAAO JO 7210.3 and this regulation.

6-42. LOAs address contingency procedures, if not contained in the COA, including but not limited to—

- Lost link, to include flight termination points.
- Flyaway
- Lost sight of UAS by the visual observer
- Any specific altitude limitations, geographic limitations, preferred route assignments, and periods of operation(s). This information must be provided to the ATC facility involved in the LOA via graphical description.
- Weather requirements for operations.
- ATC facilities responsibilities.
- UAS unit responsibilities.
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Chapter 7
Air Traffic Services Training

Leaders must understand how their unit will operate and fight across the full range of military operations and how to plan and execute training using FM 7-0. Training must be innovative yet doctrinally and technically sound. Leaders must enforce individual, collective, and unit performance standards. ATS unit leaders are responsible for the proficiency of their Soldiers, subordinate leaders, teams/crews, and the unit, as a whole.

SECTION I – TRAINING

7-1. The Army provides component commanders with trained leaders and units ready to perform with joint, interorganizational, and multinational team members in a contemporary operating environment against an adaptive enemy. A unit commander has two major training responsibilities: develop Soldiers/leaders for future responsibilities and prepare their unit to accomplish the assigned mission. In the absence of a directed mission, commanders must prepare their unit to perform those core missions for which the unit was doctrinally designed to execute across the full range of military operations. This full range of military operations is increasingly performed outside of major combat operations and often includes limited interdictions, irregular warfare tactics, and the ability to enable civil authorities. Paramount to this training will be the qualification and certification of Army air traffic controllers to operate within ICAO agreements and provide ATS to civil and non-military aircraft. As detailed later within this chapter, this civil air traffic environment places several unique training challenges upon ATS leaders.

Note. Air traffic leaders must focus ATC training and certification requirements to accommodate all phases of operations under varying international agreements, NATO policies, joint doctrine, and Army policies.

AIR TRAFFIC TRAINING IMPLICATIONS

7-2. The combined arms training strategy incorporates a series of collective training events throughout the year. These events include monthly team training, quarterly situational training exercise (STX), and an annual field training exercise (FTX). ATS collective training events are developmental in nature and are intended to build upon skills mastered during previous training events. The successive building of experience is critical to the mastery of ATC skills and is not easily replicated in singular short duration assessments due to air traffic volume, density, and variation. The building of ATC experience through multiple training events more effectively develops the skills and knowledge required by ATC credentialing directives. This protracted strategy is not always consistent with progression milestones, readiness reporting goals, and unit deployments. ATS leaders should apply strict adherence to skill assessment standards and make ATC assessments consistent with unit and Soldier proficiency levels.

7-3. Army air traffic controllers complete certification requirements according to FAA credentialing policies detailed within FAAO 7220.1 and AR 95-2. These documents detail ATC knowledge and skill requirements that must be demonstrated prior to certification and rating. Air traffic controllers providing services to civil, host nation, contract, and other non-military aircraft are obligated to meet statutory requirements of minimum experience before providing services as a CTO.
Note. Initial experience gates for ATCS-air traffic control tower ratings are detailed in chapter 5 of AR 95-2. ATCS-air traffic control tower ratings do not satisfy certification requirements for civil, host nation, contract, and other non-military aircraft operations. Controllers performing duties within this construct must obtain a CTO credential according to AR 95-2 and FAAO 7220.1.

7-4. AR 95-2 details an initial and subsequent training strategy to gain the knowledge and skills required to operate in today’s operating environment. This strategy incorporates the use of fixed-site ATC facilities found on many installations across the Army. This environment represents the single most effective training enabler for ATC training due to air traffic density, volume, and variation. ATS leaders should recognize the benefits of this training venue and commit to a strategy that includes the use of these facilities for initial experience gates, ratings and refresher training requirements as outlined in AR 95-2. The adoption of fixed-site facilities into a unit’s core training concept will increase controller proficiency, minimize risk, and better prepare controllers for the full range of military operations as detailed within FM 7-0.

COMBINED ARMS TRAINING STRATEGY

7-5. ATS leaders accomplish their training responsibilities through a series of collective training events to build air traffic proficiencies and qualifications. The three collective training events for the ATS unit are team, STX, and the FTX. These training events are synchronized and integrated with other aviation units during training activities, Gunnery, and CTC rotations. Figure 7-1 depicts the relationship of aviation training activities and echelons in support of ATS training events.

Team Training

7-6. Team training is designed to exercise all tasks associated with providing ATS to the combat aviation brigade (CAB) and across the division AO. Team training includes hands on performance oriented training to provide airspace information updates to friendly aircraft; control aircraft within a terminal environment; and coordinate and deconflict airspace requirements. The team training should be conducted as part of a higher-level staff exercise event while aircraft are conducting aircrew or mission training. The communication navigation maintenance section should participate throughout the team training events to train to maintain ATS equipment.

7-7. ATS team training events will be accomplished monthly and serve as the primary building block of air traffic skills required for certification. Team training events should be conducted in live traffic environments allowing for the validation of ATS systems emplacement and the conduct of ATC position training.
Terminal Teams (Control Tower Team and Ground Control Approach Team)

7-8. Team training is focused on training the terminal services platoon providing functions to assist in the movement of aircraft. This includes takeoff, landing, separation, and sequencing including full-service radar, TWR communications, instrumentation on illuminated airfields, and traffic advisories. Training should be conducted as a scenario driven exercise as part of an ongoing flight company STX using actual aircraft to conduct ATS operations. Prior coordination of airfield site selection and preparation should be conducted to ensure proper airfield conditions are met. Since the GCA team normally operates in conjunction with a control TWR team, the scenario can range from austere landing site to a fully instrumented airfield. If fully instrumented, the GCA team should practice providing IMC recovery capability to an AAF, and ASR and PAR within designated airspace.

7-9. The platoon leader should structure training to focus the control TWR team and the GCA team on tasks associated with providing terminal ATC services including precision and non-precision approaches to participating military aircraft. The scenario should include operating with aircraft during team training while exercising the GCA team's ability to employ with the TWR team, providing recovery capability and surveillance vectoring to arriving and departing aircraft operating in the terminal area.

Airspace Information Center Team

7-10. AIC team training is designed to exercise all tasks associated with providing services to participating aircraft. Team training includes hands on performance oriented training to provide airspace information updates to friendly aircraft; provide near real-time interface for airspace changes; and coordinate and deconflict airspace requirements. AIC team training should be conducted with aircraft that are conducting aircrew or mission training. A comprehensive scenario driven event will exercise the AIS platoon's ATC tasks to include: critical in-flight advisories/updates of airspace deviations within the AO; en route flight management services to friendly aircraft operating within assigned airspace; development of the common operating picture on the TAIS; information updates required for air defense and air traffic management operations.

7-11. Team training also focuses on future planning for emerging airspace requirements; development of airspace alert plans; providing input to the ACO/ACP; and assisting in establishing procedures for aircraft operating in uncontrolled airspace. The AIC team should train to—

- Monitor and provide input on hostile aircraft intrusion warnings.
- Provide locations of rapid refueling points (forward arming and refueling points [FARPs]), terminal facilities, and on call NAVAIDs.
- Provide terminal airfield status.
- Monitor and assist combat search and rescue operations.
- Plan airspace information services including mission command, restricted operating zones or orbit areas for Army airborne command and control system, and air mission planning data and airspace control information for terminal facilities.
- Manage/monitor airspace control information displays.
- Resolve real time conflicts for airspace users within the AO.

7-12. The training scenario also includes the TACT operations providing for services to remote sites, LZs, pickup zones, assembly areas, and FARPs. AIC liaison activities should be reviewed and exercised during team training in preparation for walk and run level events. Liaison training should include coordinating development of specific airspace information and flight coordination procedures; coordinating procedures with other military/civilian agencies; review of the coordination requirements to ensure data and communication links are established for connectivity to other Army Mission Command Information Systems and ATC facilities.

Tactical Aviation Control Teams

7-13. This team training is designed to train TACTs to coordinate aviation operations and provide initial rapid response ATS and command, control, and communication in support of Army aviation and joint
missions. Training should emphasize the mobility of the TACT allowing the commander flexibility during all stages of force projection.

7-14. The training should be scenario driven and conducted in conjunction with aircraft in support of crew progression flight training and other live fly events. The scenario will be tailored to train TACTs to provide aviation units with on-the-spot control and advisory capabilities in any environment. The company commander must incorporate assembly area selection training into the team training and planning should include the various types of assembly areas used by Army aviation units. Headquarters section personnel should review criteria for landing sites and assembly area selection to include, security, concealment, and accessibility to main supply routes, air avenues of approach, location of friendly units, and suitability of ingress and egress routes. The TACTs should be employed during a battalion or flight company event as they train to coordinate/occupy assembly areas, set up LZs/pick up zones, or operate at or near FARPs.

7-15. TACTs train to be capable of providing positive, and procedural ATS and secure UHF, VHF, frequency modulation, satellite communications and high frequency radio communications, and limited meteorological information to aircraft participating in assigned airspace. In addition to this event, TACT training can be conducted during other team training exercises (airfield and landing site planning, and AIS) and should train to provide terminal and airspace information services where air assets require coordinated movement. These teams should train to employ secure data/voice communications packages, providing low probability of interception. Team members should be proficient on the automated systems for which they have responsibility.

**Situational Training Exercise**

7-16. The ATS STX training is designed to refine the capabilities of the ATS Company by building upon previous team training exercises that trained tasks associated with the AIC, terminal services, forward area support services and airfield and landing site planning and preparation. The STX is a 24-hour event conducted in a field environment and focused on the tasks associated with providing ATS to the CAB across the division AO.

7-17. The STX should be conducted in conjunction with a battalion/brigade command post exercise, the CAB subordinate battalion's staff exercise events, or a flight company tactical training exercise. It should be scenario driven from the higher echelon event using the ATS commander's planning process to drive the exercise. Commanders must train to consider specific capabilities when planning ATS operations. STX training should include planning mission support that includes airspace and air traffic management, automated airspace planning and en route, terminal, and precision recovery throughout the brigade combat team and division AO. ATS teams should train to provide air traffic management and airspace information support using TAIS. Airfield and landing site planning should consider the physical geography of the site and the related activities in or around the main operating base and landing areas. The scenario should allow the commander to identify functional site considerations for fuel points and fuel storage areas, ordnance storage areas, arming/de-arming areas, MEDEVAC areas, weather support services, field of view and natural and manmade obstructions.

7-18. The training should include providing airspace information updates to friendly aircraft; coordinating between aircraft and the CAB/division; providing near real-time interface for airspace changes; and coordinating and deconflicting airspace requirements. It should be scenario driven from the higher echelon event using the ATS commander's planning process to drive the exercise. Commanders must train to consider specific capabilities when planning ATS operations.

7-19. The training should include providing airspace information updates to friendly aircraft; near real-time interfaces for airspace changes; and the coordination and deconfliction of airspace requirements. The scenario driven training should also focus on terminal services to assist in the movement of aircraft. This includes takeoff, landing, separation, and sequencing, including full-service radar, TWR communications, NAVAIDs, instrumentation on illuminated airfields, and traffic advisories. During one of the STX events training, the TACTs should be utilized to provide coordination of aviation operations at simulated remote and austere locations. TACTs should be exercised during initial entry and rapid response operations training such as occupying assembly areas, LZ/pick up zone and FARPs. Training is in preparation for the company internal FTX.
7-20. STXs should be accomplished quarterly and serve as gate qualifications to advanced air traffic tasks under complex traffic environments. ATS STX training events should incorporate company size aviation formations to stress air traffic skill requirements.

FIELD TRAINING EXERCISE

7-21. The ATS FTX is designed to evaluate the ATS Company’s ability to perform its mission essential tasks. The event exercises core and ATS mission task selections, and incorporates general mission tasks to include move to and occupy; establish an AO; protect; and sustainment. The FTX validates all company planning and coordination cells, teams and sections, validating all unit standing operating processes and procedures during tactical operations. The field scenario should support 24-hour continuous operations, exercise TOC configurations, shifts, and the need for displacement of the company headquarters and ATS teams during combat operations. The FTX should focus on stressing the company leadership and command and control while providing ATS support operations across the operational environment.

7-22. The FTX is conducted with higher headquarters oversight to ensure training participation with aircraft operating under similar conditions providing a realistic environment. The FTX should include planning mission support that includes airspace and air traffic management, automated airspace planning and en route, terminal, and precision recovery throughout the division AO. ATS teams should provide air traffic management and airspace information support using TAIS. Airfield and landing site planning should consider the physical geography of the site, and the related activities in or around the main operating base and landing areas. The scenario should allow the commander to identify functional site considerations. Liaison activities should occur during the exercise with airspace control elements organic to division and corps to assist ATS elements in deconflicting, synchronizing, and integrating airspace/landing site requirements.

7-23. The exercise should include providing airspace information updates to friendly aircraft, with near real-time interface for airspace changes, and coordinating and deconflicting airspace. The event should evaluate terminal services to assist in the movement of aircraft including, takeoff, landing, separation, and sequencing including full-service radar, TWR communications, NAVAIDs, instrumentation on illuminated airfields, and traffic advisories. The TACTs should be employed to provide coordination of aviation operations at simulated remote and austere locations. ATS teams should train to achieve the following timelines for full system set-up when establishing operations:

- MOTS: 1 hour.
- Tactical Terminal Control System (TTCS): 30 minutes (15 minutes for emergency power).
- TAIS: 4 hours.
- ATNAVICS: 4 hours.

7-24. The FTX must be resourced and fully supported with assets external to the company. External resources may include training areas, opposing forces, and higher headquarters staff. The FTX is conducted with the supported units deployed in a field environment under tactical training conditions. Operations are conducted continuously (day and night) for the duration of the exercise. The company commander should use the results of the evaluation to gauge readiness, to identify doctrinal, operational or tactical weakness, and to structure future training prior to deployment into an operational environment. Company personnel must maintain proficiency on those automated tactical systems for which they have primary operational responsibility or may employ.

SECTION II – AIR TRAFFIC TRAINING PROGRAM

7-25. The ATTP is the ATS commander’s program designed to train combat-ready certified air traffic controllers. This training ranges from task proficiency at the individual level, to team proficiency, and finally to unit proficiency in the execution of mission essential tasks necessary for the accomplishment of combined operations as defined in the Army universal task list and the CTL.
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APPLICABILITY

7-26. The ATTP is comprised of individual ATC skill training events exercised throughout the year within the combined arms training strategy. Figure 7-2 depicts the parallel relationship of controller training and RL progression. In this figure, controller training, knowledge and skill assessments outlined within the ATC rating program construct of FAAO 7220.1 parallel the RL progression guidelines and unit proficiency assessments outlined within FM 7-0. It is important to note that these efforts are not separate initiatives undertaken by unit personnel. Controller training conducted according to the ATC rating program and RL progression are interlinked to form the basis of unit and Soldier proficiency. Sustainment training after the qualification event to maintain controller task proficiency at the highest levels of unit readiness is also indicated in the graphic.

![Figure 7-2. ATTP relationship](image)

Legend: STX Situational Training Exercise, GCA Ground Controlled Approach, RL Readiness Level, USR Unit Status Report, METL Mission Essential Task List

7-27. The ATTP consists of three types of training; qualification, proficiency, and remedial contained within two training phases; qualification phase, and rating phase. The goal of the ATTP is to produce proficient and mission-ready air traffic controllers and ATS units. The ATTP applies to all controllers that perform ATC duties and the critical tasks associated with the installation, operation, and maintenance of their team’s mission equipment. Each platoon leader, PSG, and team chief is responsible to the commander for the development of the ATTP. The ATTP will be developed and executed to meet training time limits established in AR 95-2.

7-28. Commanders and subordinate leaders use publications, unit task lists, and the combined arms training strategy to develop the unit’s ATTP. The first step in this process is to evaluate the unit’s Mission Essential Task List (METL) to determine training requirements.

DEVELOPMENT

7-29. The ATTP is the commander’s training program, and he/she is responsible for its effectiveness and content. The platoon leaders, PSGs, and team chiefs are the primary unit trainers tasked with the development and implementation of the ATTP at the individual and team training levels.
7-30. Individual and team tasks are the foundation on which the ATTP is built. Key leaders advise the commander on required tasks, applicability of team tasks to unit roles and METL based missions, geographical factors affecting training and operational employment, training assets, and recurring training issues.

7-31. After analysis of unit METL, unit leaders’ input, and higher commander’s guidance, commanders develop supporting individual task lists, or CTLs, for each team. Commanders will then establish a short-range, long-range, and near-term training plan to ensure crews gain and maintain proficiency in unit collective tasks. Implementers must be familiar with the commander’s training intent and with the three training plans to implement the ATTP.

TYPES OF TRAINING

7-32. The ATTP consists of the following three types of training:

Qualification

7-33. Newly assigned personnel receive qualification training until they can obtain a facility rating. This training is also given to facility-rated controllers when new procedures are instituted, new publications are promulgated, or new ATC equipment is installed. This training will be annotated in Section II and III (as applicable) of DA Form 3479.

Proficiency

7-34. Facility-rated or PQ controllers are given proficiency training to remain current and proficient on ATC policies, procedures, and equipment. This type of training includes but is not limited to weather certification, changes to existing procedures, changes or new versions of existing publications, or modifications to existing control equipment. Proficiency training will be annotated in Sections II and III (as applicable) of DA Form 3479.

Remedial

7-35. Remedial training will be given to controllers who have shown they are no longer qualified at a control position for which they were previously qualified for, failure of any portion of the annual skills evaluation, no-notice evaluations, or trainees who show deficiency in previously covered or tested material. This training is given to correct a demonstrated weakness and may consist of—

- Classroom instruction.
- Additional time on the position under direct supervision.
- Simulation exercises.
- Or any combination of the above.

7-36. The facility chief determines the time limits for the controllers receiving remedial training. This training will be annotated in Section II of DA Form 3479. The reason for remedial training, its contents, and time limits will be annotated in Section III.

TRAINING PHASES

7-37. There are two training phases associated with the air traffic training program.

PHASE I

7-38. Phase I training consists of the knowledge and skills requirements to successfully complete all individual and team training in the following areas:

- Air traffic system and subsystems (install, operate, maintain, and prepare for movement).
- ATC policy and administration (AR 95-2, AR 40-501, AR 40-8).
- Airspace control procedures.
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- ATC procedures (FAAO JO 7110.65 and FAAO 7220.1).
- FLIPs, charts, and maps.
- Prime mover (vehicle), shelter, generator, and trailer licensing.
- Power generation/alternative power requirements.
- Initial weather training.
- Operations orders and overlays.
- Airfield layout (landing, movement, and parking areas).

**PHASE II**

7-39. This phase measures the ability of trainees to control air traffic in a tactical environment. The trainee receives hands-on training at each operating position and completes examinations on the ATTP requirements that apply to the control procedures. Phase II rating is comprised of knowledge and skills specific to each facility. The trainee is evaluated on each operating position, and the results are recorded on DA Form 3479-1 and annotated in Section II of the DA Form 3479.

7-40. The following knowledge and skill sets will be trained and evaluated during Phase II rating:

- **Tower tasks:**
  - Separation of air traffic ensured.
  - Makes necessary transmissions.
  - Safety alerts are provided.
  - Uses appropriate communication methods.
  - Required coordination is performed.
  - Conducts relief briefings.
  - Control judgment applied.
  - Uses light gun signals.
  - Priority of duties is understood.
  - Conducts FD duties.
  - Positive control is provided.
  - Conducts ground controller duties.
  - Effective traffic flow is maintained.
  - Conducts local controller duties.
  - Aircraft identity is maintained.
  - Scans entire control environment.
  - Knowledge of equipment capabilities and operation.
  - Communications are clear and concise.
  - Uses prescribed phraseology.
  - Provides traffic advisories.
  - Strip postings and FD entries are accurate.
  - LOAs/SOPs/directives are adhered to.
  - Additional ATC services provided.
  - Recovers from equipment failures and emergencies.

- **GCA tasks:**
  - Separation of air traffic ensured.
  - Makes necessary transmissions.
  - Safety alerts are provided.
  - Uses appropriate communication methods.
  - Required coordination is performed.
- Conducts relief briefings.
- Control judgment is applied.
- Priority of duties is understood.
- Conducts FD duties.
- Positive control is provided.
- Conducts arrival controller duties.
- Effective traffic flow is maintained.
- Conducts final controller duties.
- Aircraft identity is maintained.
- Knowledge of equipment capabilities and operation.
- Communications are clear and concise.
- Uses prescribed phraseology.
- Provides traffic advisories.
- Strip postings and FD entries are accurate.
- LOAs/SOPs/directives are adhered to.
- Additional ATC services provided.
- Recovers from equipment failures and emergencies.

- AIC tasks:
  - Makes necessary transmissions.
  - Safety alerts are provided.
  - Uses appropriate communication methods.
  - Required coordination is performed.
  - Conducts relief briefings.
  - Control judgment applied.
  - Priority of duties is understood.
  - Conducts FD duties.
  - Conducts FF controller duties.
  - Effective traffic flow is maintained.
  - Recovers from equipment failures and emergencies.
  - Aircraft identity is maintained.
  - Knowledge of equipment capabilities and operation.
  - Communications are clear and concise.
  - Uses prescribed phraseology.
  - Provides traffic advisories.
  - Strip postings and FD entries are accurate.
  - LOAs/SOPs/directives are adhered to.
  - Additional ATC services are provided.

7-41. Upon completion of position qualification on all operating positions, the controller will be given a pre-FAA/ATCS facility rating examination. This written examination will consist of 50 to 100 questions covering the skills and knowledge requirements of FAAO 7220.1 for the rating desired. These questions will focus primarily on the topics the trainee must know to operate as a controller at the facility assigned. A failed examination returns the trainee to classroom study, re-examination, and is annotated on DA Form 3479, Sections II and III.

7-42. Once the pre-FAA/ATCS exam is complete, the controller will be given a final FAA/ATCS facility rating examination and a practical evaluation by the ATCS examiner. The written, oral, and practical evaluation for facility rating will be annotated on DA Form 3479, Section II and III. The results of the
practical evaluation will be recorded on DA Form 3479-1. This evaluation will be maintained on DA Form 3479 for one calendar year. The written examination will consist of 50 to 100 questions on topics as outlined in FAAO 7220.1 and other areas deemed appropriate by the examiner for the facility rating being sought. A failure of this examination, returns the trainee to classroom study and rescheduling of the examination. This failure is annotated on DA Form 3479, Sections II, III.

ADMINISTRATION AND MANAGEMENT TRAINING

7-43. Management training is an ongoing program wherein supervisors continuously train subordinates to assume supervisory positions. Administration and management training will culminate in a written examination of at least 25 questions. As a minimum, this training will include—

- Chapter 13 of the FTM (when applicable during extended operations).
- AR 95-2.
- 14 CFR parts 65.31 to 65.50.
- FAAO 7220.1.
- Chapters 5, 6, and 7 of this TC.

7-44. The administration management exam will be administered prior to assuming the duties of CIC, SL, ATC training supervisor/specialist, or facility chief. All training and test results will be entered into Sections II, III, (as appropriate), of DA Form 3479.

PROGRESSION

7-45. AR 95-2 establishes procedures, policy, responsibilities, and standardization requirements for ATC training programs. ATS unit readiness is measured through individual, team, and collective MET proficiency. Individual controller readiness levels indicate a Soldier’s proficiency, skill level, and mission readiness. Controller RL progression is the foundation of the ATTP and only applies to tactical ratings.

7-46. Controller RL training begins with development of proficiency at the individual task level and progresses through team task that support unit collective proficiency. This process follows the crawl-walk-run model of training. Tasks required for air traffic controllers to progress from various readiness levels are contained within the Soldier’s CTL. CTL requirements are tasked-based requirements derived from the unit’s METL and appropriate ATTP for the air traffic system the Soldier is assigned to or training on. In some cases, air traffic controllers may have more than one RL. For example, controllers who are RL 1 in their assigned ATS system may be RL 3 or RL 2 in other ATS tactical systems within the unit. Commanders are encourage to cross-train controllers as mission and time permits.

7-47. ATC personnel MOS qualified shall complete Phase 1 training tasks and progress from RL 3 to RL 2 within the following timeframes:

- 90 days after assignment to the unit or assigned to a new system – Active Duty Compo 1.
- Two annual training events Compos 2 and 3.

Note. Controllers participating in an installation fixed-base rating may be exempt from tactical progression requirements if directed by the unit commander.

READINESS LEVELS

7-48. In order for ATS units to conduct effective qualification, RL progression, and sustainment training within the ATTP, each facility should have a minimum of two RL 1 controllers for 12-hour operations and four RL 1 controllers for 24-hour operations. This ensure maximum training opportunities for each operating position within the facility.
LEVEL 1

7-49. A controller awarded RL 1 has been determined to possess the necessary tactical and technical skills to perform duties at the full performance level and has demonstrated task proficiency on all tasks of the CTL. Minimum RL 1 requirements are—

- Facility rated in assigned tactical facility.
- Meets proficiency standards for assigned facility according to chapter 5.
- Possesses a valid and signed DD Form 2992 indicating full flying duties (FFD).
- Licensed on all vehicles and trailers associated with assigned facility.
- Licensed on all generators and power plants associated with assigned facility.
- Has completed an Annual Skills Evaluation within one year.
- Has completed any additional RL 1 requirements specified in the associated facility’s ATTP.

7-50. Controllers should be removed from RL 1 and identified RL 2 when additional training is required, the controller does not meet proficiency requirements, or annual skills evaluations have exceeded mandatory completion intervals.

LEVEL 2

7-51. Air traffic controllers are awarded RL 2 when beginning position training at the team level. RL 2 is characterized by improving proficiency in collective tasks and team tasks associated with the advanced operation of ATS systems. Controllers possessing a previous ATC rating of the same type may be awarded this level through the commander’s evaluation processes. Controllers will remain at RL 2 until all RL 1 level provisions have been met. Minimum RL 2 requirements are—

- Possesses a valid and signed DD Form 2992 indicating FFD.
- Has completed all Phase 1 requirements listed chapter 7 for assigned facility.
- Has completed any additional RL 2 requirements specified in the associated facility’s ATTP.

LEVEL 3

7-52. Air traffic controllers are awarded RL 3 when they have completed an MOS awarding ATC school and/or are assigned to an ATS system for which they have not previously obtained an ATC rating. A controller assigned this RL is under the direct supervision of leaders and trainers of the ATS unit. Minimum RL 3 requirements are—

- Possesses a valid and signed DD Form 2992 indicating FFD.
- Has completed a qualifying ATC school.
- Has completed any additional RL 3 requirements specified in the associated facility’s ATTP.

LEVEL 4

7-53. Air traffic controllers are awarded RL 4 when ATTP progression is not required or has been temporarily suspended due to the following:

- Controller is assigned to a staff position not requiring ATTP progression and/or development.
- Controller is medically grounded/pending medical disqualification.
- Controller is pending MOS reclassification/chapter actions.
- Controller is assigned to a National Guard position without being a graduate of an approved ATC school.

Note. For the Soldier described in bullet four above, training records and the CTL will not be established until completion of an approved ATC school.
EVALUATIONS

7-54. The commander is the approving authority for controller RL progression within the unit. Unit Examiners conduct evaluations for progression and make recommendations to the commander for changes in controller readiness levels within 30 days after the controller is assigned to the unit for the active component. The reserve component unit examiners must conduct this evaluation within 45 days of the controller’s assignment to the unit. ATS training in an installation ATC facility supplements the ATTP and provides valuable experience and position hours that can be utilized for controller RL progression requirements. The commander’s evaluation provides an opportunity to assess newly assigned air traffic controllers and allows the association of a higher RL due to previous ratings.

7-55. The controller may initially be designated RL 2 if he/she successfully completed all phases of an ATTP in the same type rating. The following guidelines apply:

- Graduates of an ATC school who are on their first unit of assignment may not be awarded RL 2 based solely on a commander’s evaluation.
- Previously certified air traffic controllers may not be awarded RL 2 if more than 12 months have passed since completion of that type rating or 12 months has passed since the last successful skills evaluation of that type rating.
- Controllers may not be assigned RL 1 based upon a commander’s evaluation. RL 1 will only be awarded after the successful completion of the CTL and training requirements contained within the unit’s ATTP. RL 1 may only be awarded upon successful completion of a rating or skills evaluation by the examiner.

NO-NOTICE EVALUATIONS

7-56. A comprehensive no-notice evaluation program is a valuable tool allowing commanders to monitor training effectiveness at all levels. Each ATS unit must establish, in writing, a no-notice proficiency evaluation program to be executed by the unit’s ATCS/CTO examiners. No-notice evaluations may be written, oral, and practical or any combination thereof in a live or simulated environment. The results of no-notice evaluations will be annotated in Section II of DA Form 3479 and recorded on DA Form 3479-1. The DA Form 3479-1 will be retained in the controller’s records until completion of the annual skill’s evaluation.

TRAINEE/CONTROLLER EVALUATIONS

7-57. The use of DA Form 3479-1 for trainee/controller evaluations serves as a valuable instrument within the ATTP. These evaluations provide the trainee with the required feedback necessary to keep them on track in the training program and provide for them areas of weakness requiring more emphasis.

7-58. DA Form 3479-1 will be used in conjunction with simulation training sessions to provide the trainee feedback and identify areas requiring additional simulation training sessions.

7-59. Supervisors will determine when to conduct trainee/controller evaluations based upon trainee performance. The supervisor should conduct evaluations based upon observed trends during training and to emphasize and reinforce training points. Evaluations will be conducted according to appendix F of this TC.

ANNUAL SKILLS EVALUATIONS

7-60. Annual skills evaluations are required for RL 1 controllers and will consist of the following requirements to maintain proficiency:

- Individual and crew task iterations on the ATC system/subsystem of assignment as designated by the commander on the CTL.
- Annual proficiency evaluation on all positions of the facility of assignment during the control of live air traffic.
- Annual written examination consisting of 50-100 questions on the subject matter pertaining to the rating held all of which may be administered open book.
7-61. The annual examination and skills evaluation will be administered by a platoon leader, platoon sergeant, ATCS/CTO examiner, or facility chief who possesses a current rating in the facility and valid medical clearance. The operating position evaluations will be recorded on DA Form 3479-1 and the results of both the written exam and the position evaluation will be entered in Section II of DA Form 3479. The skills evaluation and written exam will be maintained on the right side of the controller’s training records folder and removed when the next evaluation is complete.

7-62. Failure of the written (less than 70 percent overall) or unsatisfactory performance on the evaluation portion of the annual skills requirement will result in assignment of RL 2 status and remedial training. The content and duration of this training will be determined by the facility chief. Remedial training will be noted on DA Form 3479 Section III. Individuals unable to regain proficiency will be processed according to AR 95-2.

7-63. Annual skills evaluations must be completed within 12 calendar months of rating or last annual skills evaluation. Annual skills evaluations not completed within the designated 12-month period will result in assignment of RL 2 status until an annual skills evaluation can be completed.

Note. Platoon leaders, examiners, or platoon sergeants are responsible for reviewing written examinations to ensure they are current, relevant, and adequate to assess the knowledge required to perform all duties associated with the rating held.

SECTION III – COMMANDER’S TASK LIST AND TRAINING REQUIREMENTS

7-64. The CTL is the base document from which the RL progression program is developed. It is incumbent on the commander, platoon leader, platoon sergeant, and facility chief to define the sub tasks associated with those identified tasks of the CTL and any additional tasks required for the rating. The tasks, sub tasks, and academic subjects required within the RL progression program are identified in this chapter and on the appropriate facilities CTL.

7-65. The commander and unit leaders develop a task list to support each rating. The CTL is a written agreement between the commander and the team member. The requirements established by the CTL are tailored to the proficiency training needs of the individual team member. It specifies the tasks the team member must accomplish during the training year. The controller, facility chief and platoon leader sign the CTL no later than the first day of training. The commander signs the CTL once complete.

7-66. The CTL is used to document both initial system qualification and annual proficiency requirements. The facility chief shall indicate on the form whether the CTL is for “Initial” or “Proficiency” documentation.

7-67. An individual task is defined as a task primarily performed by the individual team member, though assistance may be sought from other team members to complete the task. Individual tasks cover baseline skills, knowledge, and procedures necessary to operate the ATS system and selected team equipment.

7-68. Team tasks are selected by the commander to support the performance of the unit METL. A team task is primarily performed by multiple team members during the performance of a mission. It requires a combination of specific actions by various team members to perform the task to standard. Individual team members are responsible for performing specific roles during performance of the task. These tasks cover skills, knowledge, and procedures to operate the system during the performance of tactical or special missions.

7-69. Commanders may develop additional tasks for inclusion on the CTL, as needed, to accomplish the unit’s mission. The commander lists them separately on the CTL when an additional task is developed by the unit. The commander must perform a risk analysis for performance of the task and determine training required for personnel to attain proficiency in the task. The additional tasks must include—

- Task number (if applicable).
- Title of the task.
- Conditions under which the task is performed.
- Standards for performance of the task.
7-14 TC 3-04.15
08 October 2019

Chapter 7

- Description of how the task is performed.
- Considerations for performance of the task such as environmental and safety.
- Training/evaluation requirements.

7-70. CTLs will be retained on the right side of DA Form 3479. CTLs for initial system qualification will remain in DA Form 3479 as a permanent record. Subsequent “proficiency” CTLs will be placed on top of the initial system qualification CTLs. Proficiency CTLs will be completed annually and retained in the record until completion of the annual skills evaluation. A new “initial” CTL will be completed if lost or destroyed or if more than 12 months passes without the controller exercising ATC skills on the assigned system. All training requirements will be properly documented in Section II of DA Form 3479.

COMMANDER’S TASK LIST FORMS

7-71. Figures 7-3 through 7-10, pages 7-15 through 7-22, depict DA Form 3479-11, Commander’s Task List (ATS) AN/MSQ-135 Mobile Tower System (MOTS) Operator; DA Form 3479-12, Commander’s Task List (ATS) AN/TPN-31 Air Traffic Navigation, Integration and Coordination System (ATNAVICS) Operator; DA Form 3479-13, Commander’s Task List (ATS) AN/TSQ-221 Tactical Airspace Integration System (TAIS) Operator; and DA Form 3479-15, Commander’s Task List (ATS) AN/TSQ-198 Tactical Terminal Control System (TTCS) Operator.
### Commander's Task List (ATS)

**AN/MSQ-135 Mobile Tower System (MOTS) Operator**

For use of this form, see TC 3-04.15. The proponent agency is TRADOC.

**Controller Personal Data**

- **Name:** Last, First M.I.
  - Snuffy, Joe D
- **Rank:** PFC
  - 00000
- **Duty Position:** Controller
- **Date Assigned:** 22 Jul 2019
- **Operating Initials:** SY
  - Initial: □, Proficiency: □

#### Phase I Tasks

<table>
<thead>
<tr>
<th>Task</th>
<th>Title</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>011-16Q-1071</td>
<td>Install the AN/MSQ-135 (MOTS)</td>
<td>1 Aug 2019</td>
</tr>
<tr>
<td>011-16Q-1072</td>
<td>Operate AN/MSQ-135 (MOTS)</td>
<td>2 Aug 2019</td>
</tr>
<tr>
<td>011-16Q-1073</td>
<td>Prepare the AN/MSQ-135 (MOTS) for movement</td>
<td>2 Aug 2019</td>
</tr>
<tr>
<td>071-1102</td>
<td>Determine Grid Coordinate of a Point Using a Military Map</td>
<td>25 Jul 2019</td>
</tr>
<tr>
<td>441-100</td>
<td>Visually Identify Threat and Friendly Aircraft</td>
<td>25 Jul 2019</td>
</tr>
<tr>
<td>071-1102</td>
<td>Establish a Helicopter Landing Point</td>
<td>23 Jul 2019</td>
</tr>
<tr>
<td>011-16Q-2002</td>
<td>Conduct Controller Training</td>
<td>N/A</td>
</tr>
<tr>
<td>052-201-1160</td>
<td>Conduct PMCS</td>
<td>23 Jul 2019</td>
</tr>
<tr>
<td>011-16Q-3000</td>
<td>Manage Records, Logs, and Recorded Media</td>
<td>N/A</td>
</tr>
</tbody>
</table>

#### Phase II Tasks

<table>
<thead>
<tr>
<th>Task</th>
<th>Title</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>011-16Q-0012</td>
<td>Process Pilot Reports</td>
<td>22 Oct 2019</td>
</tr>
<tr>
<td>011-16Q-1061</td>
<td>Provide Air Traffic Control Tower Services</td>
<td>21 Oct 2019</td>
</tr>
<tr>
<td>011-16Q-1065</td>
<td>Control Aircraft, Vehicles, and Personnel by ATC Light Gun Controls</td>
<td>23 Oct 2019</td>
</tr>
<tr>
<td>011-16Q-1022</td>
<td>Provide Emergency Assistance</td>
<td>24 Oct 2019</td>
</tr>
<tr>
<td>011-16Q-1023</td>
<td>Issue Airport Condition Information</td>
<td>22 Oct 2019</td>
</tr>
<tr>
<td>011-16Q-1025</td>
<td>Decode Aviation Weather Reports</td>
<td>22 Oct 2019</td>
</tr>
</tbody>
</table>

**Subtasks Phase I**

<table>
<thead>
<tr>
<th>Task</th>
<th>Title</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>26 Jul 2019</td>
<td>Licensed c x Prime Mk III and Generator Set</td>
<td>21 Oct 2019</td>
</tr>
<tr>
<td>5 Aug 2019</td>
<td>Conduct Site Planning and Site for Certified System</td>
<td>21 Oct 2019</td>
</tr>
<tr>
<td>1 Aug 2019</td>
<td>Identify and Count Generator Equipment Solution, and Listing Equipment Trailer Components</td>
<td>11 Sep 2019</td>
</tr>
<tr>
<td>1 Aug 2019</td>
<td>Identify the Minimum Components of the ATC Tower, MMS, and ALS Generator Set</td>
<td>18 Sep 2019</td>
</tr>
<tr>
<td>2 Aug 2019</td>
<td>Identify ATO/ALS Generators and Controls</td>
<td>21 Oct 2019</td>
</tr>
<tr>
<td>1 Aug 2019</td>
<td>Ground ATC Tower/18KW and ALS Generator Set</td>
<td>23 Oct 2019</td>
</tr>
<tr>
<td>2 Aug 2019</td>
<td>Power-up, Operate, and Shut-down ATC Tower and Generator</td>
<td>25 Sep 2019</td>
</tr>
<tr>
<td>2 Aug 2019</td>
<td>Switch ATC Tower from DC Power to AC Power</td>
<td>3 Oct 2019</td>
</tr>
<tr>
<td>2 Aug 2019</td>
<td>Configure Motts Servers/Workstations</td>
<td>8 Aug 2019</td>
</tr>
<tr>
<td>2 Aug 2019</td>
<td>Erase Antenna System</td>
<td>50 Position Hour Experience Gate (Initial Tower Certification Only)</td>
</tr>
<tr>
<td>NA</td>
<td>Install the ALS (if applicable)</td>
<td>64 # of Live Traffic Position Hours (Min 40 Hours)</td>
</tr>
<tr>
<td>NA</td>
<td>Power-up, Operate, and Shut-down ALS and Generator (if applicable)</td>
<td>18 # of Simulated Traffic Position Hours (Max 40 Hours)</td>
</tr>
<tr>
<td>NA</td>
<td>Emplace the ATC Generator and Tower</td>
<td></td>
</tr>
<tr>
<td>2 Aug 2019</td>
<td>Configure the ATC Tower for DC Power</td>
<td></td>
</tr>
<tr>
<td>2 Aug 2019</td>
<td>Power-up ECUs</td>
<td></td>
</tr>
<tr>
<td>8 Aug 2019</td>
<td>Obtain Limited Weather Observer Certification</td>
<td></td>
</tr>
</tbody>
</table>

---

Figure 7-3. Sample DA Form 3479-11 (front)
## ADDITIONAL REQUIREMENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Chief</td>
<td>Printed Name: Doe, Jane M.</td>
</tr>
<tr>
<td>Air Traffic Controller</td>
<td>Printed Name: Snuffy, Joe D.</td>
</tr>
<tr>
<td>Platoon Leader</td>
<td>Printed Name: Chosen, Jim O.</td>
</tr>
<tr>
<td>Commander</td>
<td>Printed Name: Smith, Jack P.</td>
</tr>
</tbody>
</table>

**ACKNOWLEDGEMENT**

<table>
<thead>
<tr>
<th>Component</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Chief</td>
<td>Digitally signed by: Doe, Jane M.</td>
<td>22 Jul 2019</td>
</tr>
<tr>
<td>Air Traffic Controller</td>
<td>Digitally signed by: Snuffy, Joe D.</td>
<td>22 Jul 2019</td>
</tr>
<tr>
<td>Platoon Leader</td>
<td>Digitally signed by: Chosen, Jim O.</td>
<td>22 Jul 2019</td>
</tr>
<tr>
<td>Commander</td>
<td>Signed at completion of CTO</td>
<td>12 Feb 2020</td>
</tr>
</tbody>
</table>

**Figure 7-4. Sample DA Form 3479-11 example (back)**
### Commander's Task List (ATS)

**AN/TPN-31 Air Traffic Navigation, Integration and Coordination System (ATNAVICS) Operator**

For use of this form, see TC 3-04.15. The proponent agency is TRADOC.

#### Controller Personal Data

<table>
<thead>
<tr>
<th>NAME (Last, First, MI)</th>
<th>RANK</th>
<th>ATCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNUFFY, JOE D.</td>
<td>PFC</td>
<td>00000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DUTY POSITION</th>
<th>DATE ASSIGNED</th>
<th>OPERATING INITIALS</th>
<th>CTL TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTROLLER</td>
<td>22 JUL 2019</td>
<td>SY</td>
<td>Initial</td>
</tr>
</tbody>
</table>

### Phase I Tasks

<table>
<thead>
<tr>
<th>TASK</th>
<th>TITLE</th>
<th>COMPLETION DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>011-15Q-1034</td>
<td>Install the AN/TPN-31 (ATNAVICS)</td>
<td>1 AUG 2019</td>
</tr>
<tr>
<td>011-15Q-1038</td>
<td>Operate AN/TPN-31 (ATNAVICS)</td>
<td>2 AUG 2019</td>
</tr>
<tr>
<td>011-15Q-1032</td>
<td>Prepare the AN/TPN-31 (ATNAVICS) for Movement</td>
<td>2 AUG 2019</td>
</tr>
<tr>
<td>071-COM-1002</td>
<td>Determine Grid Coordinate of a Point Using a Military Map</td>
<td>25 JUL 2019</td>
</tr>
<tr>
<td>011-15Q-3000</td>
<td>Manage Records, Logs, and Recorded Media</td>
<td>N/A</td>
</tr>
<tr>
<td>011-15Q-2002</td>
<td>Conduct Air Traffic Controller Training</td>
<td>N/A</td>
</tr>
<tr>
<td>113-COM-7040</td>
<td>Navigate using DMR/FR</td>
<td>23 JUL 2019</td>
</tr>
<tr>
<td>052-201-1180</td>
<td>Conduct PMCS</td>
<td>23 JUL 2019</td>
</tr>
</tbody>
</table>

### Phase II Tasks

<table>
<thead>
<tr>
<th>TASK</th>
<th>TITLE</th>
<th>COMPLETION DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>011-15Q-1002</td>
<td>Provide Radar Services</td>
<td>21 OCT 2019</td>
</tr>
<tr>
<td>011-15Q-1012</td>
<td>Process Pilot Reports</td>
<td>22 OCT 2019</td>
</tr>
<tr>
<td>011-15Q-1022</td>
<td>Provide Emergency Assistance</td>
<td>23 OCT 2019</td>
</tr>
<tr>
<td>011-15Q-1023</td>
<td>Issue Airport Condition Information</td>
<td>22 OCT 2019</td>
</tr>
<tr>
<td>011-15Q-1025</td>
<td>Decode Aviation Weather Reports and Forecasts</td>
<td>22 OCT 2019</td>
</tr>
<tr>
<td>011-15Q-2009</td>
<td>Collect terminal approach procedure (TAP) data</td>
<td>10 OCT 2019</td>
</tr>
</tbody>
</table>

#### Subtasks Phase I

- **26 JUL 2019**: Licensed on Prime Mover and Operator SET
  - **OCT 2019**: Conduct GCA Opening Procedures
- **24 JUL 2019**: Operate/PMA Prime Mover
- **24 JUL 2019**: Operate/PMA General Fastener
- **9 AUG 2019**: Develop DMS Data
- **9 AUG 2019**: Enter DMS Data
- **8 AUG 2019**: Install Reflectors
- **7 AUG 2019**: Install Power connections
- **7 AUG 2019**: Operate Power Distribution Panel
- **7 AUG 2019**: Program/Operate System Radios
- **6 AUG 2019**: Install FM External Antennas
- **9 AUG 2019**: Develop MVA Chart
  - **10 AUG**: Approach Experience Gate (Initial GCA Certification Only)

#### Subtasks Phase II

- **26 JUL 2019**: Operate/PMA Prime Mover
- **21 OCT 2019**: Initiate/maintain DA Forms 3501, 3502, and 3503
- **21 OCT 2019**: Conduct Equipment Checks
- **23 OCT 2019**: Conduct Transfer of Position Responsibilities
- **25 OCT 2019**: Conduct OCS Evaluation
- **11 SEP 2019**: Review TC 3-04.6 and TC 3-04.15
- **25 SEP 2019**: Maintain FLIPs (VFR/FR Supplements, Sectionals)
- **3 OCT 2019**: Review FAA JO 7710.65 chapters 2-4
- **9 OCT 2019**: Review ESCAT Procedures (32 CFR, Part 245, Sub Part D)
- **18 SEP 2019**: Review ATC Policy and Administration (AR 40-8, 40-521, 55-2)

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**Figure 7-5. Sample DA Form 3479-12 (front)**

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08 October 2019  
TC 3-04.15  
7-17
<table>
<thead>
<tr>
<th>Facility Chief Printed Name</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSG DOE, JANE M.</td>
<td>Digitally signed by:</td>
<td>22 Jul 19</td>
</tr>
<tr>
<td></td>
<td>Doe, Jane M.</td>
<td></td>
</tr>
<tr>
<td>Air Traffic Controller Printed Name</td>
<td>Signature</td>
<td>Date</td>
</tr>
<tr>
<td>PFC SNUFFY, JOE D.</td>
<td>Digitally signed by:</td>
<td>22 Jul 19</td>
</tr>
<tr>
<td></td>
<td>Snuffy, Joe D.</td>
<td></td>
</tr>
<tr>
<td>Platoon Leader Printed Name</td>
<td>Signature</td>
<td>Date</td>
</tr>
<tr>
<td>CW2 CHOSEN, JIM O.</td>
<td>Digitally signed by:</td>
<td>22 Jul 19</td>
</tr>
<tr>
<td></td>
<td>Chosen, Jim O.</td>
<td></td>
</tr>
<tr>
<td>Commander Printed Name</td>
<td>Signature</td>
<td>Date</td>
</tr>
<tr>
<td>CPT SMITH, JACK P.</td>
<td>(signed at completion of G7L)</td>
<td>12 Feb 20</td>
</tr>
<tr>
<td></td>
<td>Digitally signed by:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Smith, Jack P.</td>
<td></td>
</tr>
</tbody>
</table>

Figure 7-6. Sample DA Form 3479-12 (back)
### Commander’s Task List (ATS)

#### AN/TSQ-221 Tactical Airspace Integration System (TAIS) Operator

**Name:** [Last, First, MI]  
**Rank:**  
**Duty Position:** Controller  
**Date Assigned:** 22 JUL 2019  
**Operating Initials:** SY  
**CT# Type:** Initial Proficiency  
**ATC#:** 00000

#### Phase I Required Tasks

<table>
<thead>
<tr>
<th>Task</th>
<th>Title</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>011-15Q-1015</td>
<td>Install the AN/TSQ-221 (TAIS)</td>
<td>1 AUG 2019</td>
</tr>
<tr>
<td>011-15Q-1017</td>
<td>Operate AN/TSQ-221 (TAIS)</td>
<td>2 AUG 2019</td>
</tr>
<tr>
<td>011-15Q-1023</td>
<td>Prepare the AN/TSQ-221 (TAIS) for Movement</td>
<td>2 AUG 2019</td>
</tr>
<tr>
<td>011-15Q-4005</td>
<td>Manage Airspace Control Procedures of the AN/TSQ-221 (TAIS)</td>
<td>N/A</td>
</tr>
<tr>
<td>011-15Q-3002</td>
<td>Conduct Controller Training</td>
<td>N/A</td>
</tr>
<tr>
<td>113-COM-7046</td>
<td>Navigate using DAGR</td>
<td>23 JUL 2019</td>
</tr>
<tr>
<td>052-201-1160</td>
<td>Conduct PMCS</td>
<td>23 JUL 2019</td>
</tr>
<tr>
<td>011-15Q-3000</td>
<td>Manage Records, Logs, and Recorded Media</td>
<td>N/A</td>
</tr>
</tbody>
</table>

#### Phase II Required Tasks

<table>
<thead>
<tr>
<th>Task</th>
<th>Title</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>011-15Q-1023</td>
<td>Provide Airspace Information Center Services</td>
<td>24 OCT 2019</td>
</tr>
<tr>
<td>011-15Q-1022</td>
<td>Provide Emergency Assistance</td>
<td>23 OCT 2019</td>
</tr>
<tr>
<td>011-15Q-1023</td>
<td>Issue Airport Condition Information</td>
<td>21 OCT 2019</td>
</tr>
<tr>
<td>011-15Q-1079</td>
<td>Operate the AN/TSQ-221, Airspace Workstation (AWS)</td>
<td>21 OCT 2019</td>
</tr>
<tr>
<td>011-15Q-1010</td>
<td>Process Unit airspace Plan (UAP)</td>
<td>22 OCT 2019</td>
</tr>
<tr>
<td>011-15Q-1012</td>
<td>Process Pilot Reports (PIREPS)</td>
<td>22 OCT 2019</td>
</tr>
<tr>
<td>011-15Q-1025</td>
<td>Decode Aviation Weather Reports and Forecasts</td>
<td>21 OCT 2019</td>
</tr>
</tbody>
</table>

### Subtasks Phase I

- **20 JUL 2019**  
  - Licensed on Prime Move, and Generator Set  
  - 1 AUG 2019  
    - Initializing KG-46A Encoder

- **1 AUG 2019**  
  - Generator/ Inverter setup  
  - Initializing Voice Communications Equipment

- **1 AUG 2019**  
  - Ground Radio or VHF Inst.  
  - 6 AUG 2019  
    - Voice Recorder

- **2 AUG 2019**  
  - Power Supply  
  - 6 AUG 2019  
    - UHF Radio Set

- **2 AUG 2019**  
  - Exterior Signal Installation  
  - 6 AUG 2019  
    - VHF Radio Set

- **2 AUG 2019**  
  - Antenna Configuration  
  - 6 AUG 2019  
    - EPLRS Radio Set

- **2 AUG 2019**  
  - Environmental Control Unit Preparation  
  - 6 AUG 2019  
    - HF Radio Set

- **2 AUG 2019**  
  - Initialize the Power Vault  
  - 6 AUG 2019  
    - PM Radio Set

- **2 AUG 2019**  
  - Power up the Distribution Panel  
  - 6 AUG 2019  
    - SATCOM Radio Set

- **2 AUG 2019**  
  - Power up ECU  
  - 6 AUG 2019  
    - KY-88 Secure Phone

- **2 AUG 2019**  
  - Power up the Workstations  
  - 6 AUG 2019  
    - Intercom Equipment

- **6 AUG 2019**  
  - Booting the TAIS Server as a TOC Server  
  - 6 AUG 2019  
    - Tactical Secure Terminal Equipment (TSE)

- **6 AUG 2019**  
  - Booting TAIS Server Workstations as a TOC Client

### Subtasks Phase II

- **7 AUG 2019**  
  - Initializing Remote Equipment  
  - 21 OCT 2019  
    - Conduct AIC Opening Procedures

- **7 AUG 2019**  
  - Initializing GPS Equipment  
  - 21 OCT 2019  
    - Initialize/Maintain DA Form 3502 and 3503

- **7 AUG 2019**  
  - Initializing Air Defense System Integrator  
  - 11 SEP 2019  
    - Review TC 3-04.15 and TC 3-04.4

- **7 AUG 2019**  
  - Initializing KH-705, KG-84 CONSEC Module  
  - 18 SEP 2019  
    - Review ATC Policy and Administration (AR 95-2, AR 42-051)

- **7 AUG 2019**  
  - Initializing WLA-THS Wireline Interface Adapter Module  
  - 21 OCT 2019  
    - Conduct Equipment Checks

- **7 AUG 2019**  
  - Initializing Data Terminal Set (DTS)  
  - 23 OCT 2019  
    - Conduct Transfer of Position Responsibilities

---

Figure 7-7. Sample DA Form 3479-13 (front)
### Chapter 7

#### Commander's Task List (ATS)
**AN/TSQ-221 Tactical Airspace Integration System (TAIS) Operator** (continued)

<table>
<thead>
<tr>
<th>Date</th>
<th>Task Description</th>
<th>Position Hour Experience Gate (Initial AIC Certification Only)</th>
<th># of Live Traffic Position Hours (Min 40 Hours)</th>
<th># of Simulated Traffic Position Hours (Max 40 Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 SEP 2019</td>
<td>Maintain FLIPs (VFR/IFR Supplements, Sectionals)</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 OCT 2019</td>
<td>Review PAA JO T110.85 chapters 2-4</td>
<td>64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 OCT 2019</td>
<td>Review FM 3-52 and ATP 3-82.1</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 OCT 2019</td>
<td>Airspace Command and Control (AC2)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Additional Requirements

#### Acknowledgement

<table>
<thead>
<tr>
<th>FacilityChief Printed Name</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSG Doe, Jane M.</td>
<td>Digitally signed by: Doe, Jane M.</td>
<td>22 Jul 2019</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air Traffic Controller Printed Name</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFC Snuffy, Joe D.</td>
<td>Digitally signed by: Snuffy, Joe D.</td>
<td>22 Jul 2019</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Platoon Leader Printed Name</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>CW2 Chosen, Jim O.</td>
<td>Digitally signed by: Chosen, Jim O.</td>
<td>22 Jul 2019</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Commander Printed Name</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPT Smith, Jack P.</td>
<td>Signature (signed at completion of CTL) Digitally signed by: Smith, Jack P.</td>
<td>12 Feb 2020</td>
</tr>
</tbody>
</table>

---

*Figure 7-8. Sample DA Form 3479-13 (back)*
### COMMANDER’S TASK LIST (ATS)
#### AN/TSQ-198 TACTICAL TERMINAL CONTROL SYSTEM (TTCS) OPERATOR

For use of this form, see TC 3-04.15. The propenent agency is TRADOC.

<table>
<thead>
<tr>
<th>NAME (Last, First, M)</th>
<th>RANK</th>
<th>ATCS</th>
<th>CONTROLLER PERSONAL DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNUFFY, JOE D.</td>
<td>2FC</td>
<td>00000</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DUTY POSITION</th>
<th>DATE ASSIGNED</th>
<th>OPERATING INITIALS</th>
<th>CTL TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTROLLER</td>
<td>22 JUL 2019</td>
<td>SY</td>
<td>Initial</td>
</tr>
</tbody>
</table>

#### PHASE I TASKS

<table>
<thead>
<tr>
<th>TASK</th>
<th>TITLE</th>
<th>COMPLETION DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>011-15G-1063</td>
<td>Install the AN/TSQ-198 (TTCS)</td>
<td>1 AUG 2019</td>
</tr>
<tr>
<td>011-15G-1064</td>
<td>Operate AN/TSQ-198 (TTCS)</td>
<td>2 AUG 2019</td>
</tr>
<tr>
<td>011-15G-1062</td>
<td>Prepare the AN/TSQ-198 (TTCS) for Movement</td>
<td>2 AUG 2019</td>
</tr>
<tr>
<td>071-COM-1002</td>
<td>Determine Grid Coordinate of a Point Using a Military Map</td>
<td>25 JUL 2019</td>
</tr>
<tr>
<td>441-066-1040</td>
<td>Visually Identify Threat and Friendly Aircraft</td>
<td>25 JUL 2019</td>
</tr>
<tr>
<td>071-334-4002</td>
<td>Establish a Helicopter Landing Point</td>
<td>23 JUL 2019</td>
</tr>
<tr>
<td>011-15G-2022</td>
<td>Conduct Controller Training</td>
<td>N/A</td>
</tr>
<tr>
<td>052-201-1180</td>
<td>Conduct PMCS</td>
<td>23 JUL 2019</td>
</tr>
<tr>
<td>113-COM-7048</td>
<td>Navigate using DAGR</td>
<td>23 JUL 2019</td>
</tr>
<tr>
<td>011-15G-3000</td>
<td>Manage Records, Log, and Recorded Media</td>
<td>N/A</td>
</tr>
</tbody>
</table>

#### PHASE II TASKS

<table>
<thead>
<tr>
<th>TASK</th>
<th>TITLE</th>
<th>COMPLETION DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>011-000-4284</td>
<td>Decode Aircraft Identification Symbols, Service, and Mission Prefixes</td>
<td>22 OCT 2019</td>
</tr>
<tr>
<td>011-15G-0812</td>
<td>Process Pilot Reports</td>
<td>22 OCT 2019</td>
</tr>
<tr>
<td>011-15G-1021</td>
<td>Provide Air Traffic Control Tower Services</td>
<td>21 OCT 2019</td>
</tr>
<tr>
<td>011-15G-1015</td>
<td>Control Aircraft, Vehicles, and Personnel by ATC Light Gun Signals</td>
<td>23 OCT 2019</td>
</tr>
<tr>
<td>011-15G-1022</td>
<td>Provide Emergency Assistance</td>
<td>24 OCT 2019</td>
</tr>
<tr>
<td>011-15G-1023</td>
<td>Issue Airport Condition Information</td>
<td>22 OCT 2019</td>
</tr>
<tr>
<td>011-15G-1025</td>
<td>Decode Aviation Weather Reports and Meteos</td>
<td>N/A</td>
</tr>
</tbody>
</table>

#### SUBTASKS PHASE I

<table>
<thead>
<tr>
<th>TASK</th>
<th>TITLE</th>
<th>COMPLETION DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>26 JUL 2019</td>
<td>Licensed on Prime Movers and Generator Sets</td>
<td>21 OCT 2019</td>
</tr>
<tr>
<td>26 JUL 2019</td>
<td>Operate MICS Prime Movers</td>
<td>21 OCT 2019</td>
</tr>
<tr>
<td>1 AUG 2019</td>
<td>Operate/Process Generator</td>
<td>11 SEP 2019</td>
</tr>
<tr>
<td>1 AUG 2019</td>
<td>Install/Operate PMCS/PMMS</td>
<td>18 SEP 2019</td>
</tr>
<tr>
<td>1 AUG 2019</td>
<td>Install Power Connections</td>
<td>31 OCT 2019</td>
</tr>
<tr>
<td>1 AUG 2019</td>
<td>Operate Power Distribution Panel</td>
<td>23 OCT 2019</td>
</tr>
<tr>
<td>5 AUG 2019</td>
<td>Program/Operate System Radio</td>
<td>25 SEP 2019</td>
</tr>
<tr>
<td>5 AUG 2019</td>
<td>Program System from RSCICAU</td>
<td>2 OCT 2019</td>
</tr>
<tr>
<td>2 AUG 2019</td>
<td>Install Surface Wire Grounding System</td>
<td>8O Position Hour Experience Gate (Initial Tower Certification Only)</td>
</tr>
<tr>
<td>23 JUL 2019</td>
<td>Emplacement of Landing “Y”NATO “Y”</td>
<td>64 hr of Live Traffic Position Hours (Min 40 Hours)</td>
</tr>
<tr>
<td>8 AUG 2019</td>
<td>Obtain Limited Weather Observer Certification</td>
<td>18 hr of Simulated Traffic Position Hours (Max 40 Hours)</td>
</tr>
<tr>
<td>8 AUG 2019</td>
<td>Develop Visibility Checkpoint Chart</td>
<td></td>
</tr>
</tbody>
</table>

Figure 7-9. Sample DA Form 3479-15 (front)
Figure 7-10. Sample DA Form 3479-15 (back)
AIR TRAFFIC CONTROL SIMULATION EQUIPMENT

7-72. ATS leaders will incorporate accredited ATC simulation systems into the ATTP and overall training strategy. When simulation systems are used for initial rating gates or currency requirements, facility chiefs shall utilize and maintain DA Form 3502 and DA Form 3503, Air Traffic Control Position Log, to record activities and document position hours, trainers, and trainees participating in the training session.

7-73. Use of simulation systems should ensure controllers have the means to meet training requirements and maintain a competent level of proficiency. The system should provide timely controller information and support. This is necessary to accomplish safe separation requirements between aircraft and obstacles, provide visually verifiable weather conditions, and accomplish expeditious and positive control of air traffic in a simulated terminal environment.

TRAINING SCENARIOS AND DATABASES

7-74. Scenarios and databases will be tailored to include specific task coverage to ensure satisfactory performance for each facility operating and control position. Position instructional blocks should include tasks controllers are not routinely required to perform. Development of position scenarios will measure all standards for that position as dictated by the CTL and those tasks depicted on DA Form 3479-1 used during evaluations. Scenarios and databases will be designed to aid in the task performance during live traffic conditions used for position qualifications, ratings, annual proficiency evaluations, and pre-deployment training.

*Note.* Simulation may be used during all training phases but is excluded from use during position qualifications, ratings, and annual skill evaluations. These events require the controller to demonstrate successful performance of knowledge and skills required during live-traffic conditions.

7-75. The ATC/facility chief is responsible for—

- Developing a training plan and documenting controller’s progress of basic ATC fundamentals. DA Form 3479-1 trainee/controller evaluations used to evaluate controllers in a simulated environment should indicate “Simulator” in block 1 of the evaluation.
- Incorporating simulation into the appropriate CTL. The simulation training plan will adhere, to the extent possible, to chapter six and seven.
- Overseeing the scenario development to ensure a realistic training environment.
- Ensuring training is provided, as needed, to primary trainers to operate stand-alone simulation.
- Ensuring a sufficient number of realistic scenarios meet or exceed normal traffic levels and complexity.
- Ensuring scenarios are designed to prepare controllers to work effectively in a live environment.
- Ensuring minimum standards are met for each operating/control position during evaluations.
- Ensuring training provides airspace/procedural requirements.

SECTION IV – UNIT STATUS REPORTING

7-76. The two primary ARs governing readiness reporting are AR 220-1 and AR 700-138. The current master maintenance data file for all reportable system/subsystem/equipment is available at [https://www.logsa.army.mil](https://www.logsa.army.mil). The logistics support activity site requires registration for access. Although this guide deals primarily with training, a commander must be intimately familiar with both of these regulations. The USR gives the commander a snapshot of the unit’s overall training and equipment status, and aviation logistical readiness directly affects the unit’s ability to conduct aviation training.
COMMANDER RESPONSIBILITIES

7-77. Commanders determine their unit's overall status based on an assessment of the unit's capability to accomplish its assigned mission. The commander’s responsibilities listed in AR 220-1 include—

- Maintaining the highest unit status level possible with given resources.
- Reviewing subordinate unit reports for accuracy and compliance with applicable requirements.
- Distributing unit equipment and resources against mission essential requirements on a priority basis.
- Training to the highest level possible with the resources that are available.
- Submitting unit status between regular reports, as required.
- Ensuring unit has computer hardware/software to process and submit the USR and related Army Status of Resources and Training System reports.

7-78. A unit’s C-level indicates the degree to which the unit has achieved prescribed levels of fill for personnel and equipment, the training status of those personnel, and the maintenance status of the unit’s equipment. AR 220-1 C-level definitions include—

- **C-1.** The unit possesses the required resources and is trained to undertake the full wartime mission(s) for which it is organized or designed.
- **C-2.** The unit possesses the required resources and is trained to undertake most wartime mission(s) for which it is organized or designed.
- **C-3.** The unit possesses the required resources and is trained to undertake many, but not all, portions of the wartime mission(s) for which it is organized or designed.
- **C-4.** The unit requires additional resources or training to undertake its wartime mission(s), but it may be directed to undertake portions of its wartime mission(s) with resources on hand.
- **C-5.** The unit is undergoing a service-directed resource action and is not prepared, at this time, to undertake the wartime mission(s) for which it is organized or designed.

7-79. Resourcing factors for commanders to consider include morale, discipline, availability of critical equipment, and availability of qualified key personnel.

CONTROLLER READINESS LEVEL PROGRESSION AND UNIT MISSION ESSENTIAL TASK ASSESSMENTS

7-80. The objective evaluation and assessment of training is measured against approved and published standards as discussed in FM 7-0. The readiness of an ATS unit depends on individual, crew, and collective training. Commanders assess mission essential tasks (MET) from the unit’s DA standardized METL to determine proficiency.

7-81. MET proficiency and published components of training readiness determines a unit’s T-Level. The objective task evaluation criteria matrix is the Army standard evaluation criteria used by commanders to objectively assess training. Commanders utilize training and evaluation outlines (T&EO), the Army objective task criteria matrix, and the guidance below in table 7-1, page 7-25, when conducting ATS MET assessment.
Table 7-1. MET assessment requirement

<table>
<thead>
<tr>
<th>MET Assessment</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>T</strong></td>
<td>5 or more ATS crewmembers are RL-1 on the system and at least 2 ATS maintenance personnel are certified on the system. 4 ATS crewmembers are RL-1 per TTCS system.</td>
</tr>
<tr>
<td><strong>T-</strong></td>
<td>4 ATS crewmembers are RL-1 on the system and at least 2 ATS maintenance personnel are certified on the system.</td>
</tr>
<tr>
<td><strong>P</strong></td>
<td>3 ATS crewmembers are RL-1 on the system and at least 1 ATS maintenance personnel are certified on the system.</td>
</tr>
<tr>
<td><strong>P-</strong></td>
<td>2 ATS crewmembers are RL-1 on the system and at least 1 ATS maintenance personnel are certified on the system.</td>
</tr>
<tr>
<td><strong>U</strong></td>
<td>Less than 2 ATS crewmembers are RL-1 on the system and/or 0 ATS maintenance personnel are certified on the system.</td>
</tr>
</tbody>
</table>

MET mission essential task, ATS air traffic services, RL readiness level, TTCS tactical terminal control system

7-82. The above ATS RL guidelines supplement MET, T&EO, and Task Criteria Matrix requirements. Platoon leaders and platoon sergeants may be utilized as a member of a single ATS crew when conducting MET assessments. Personnel who are RL 1 in multiple systems can only be counted for one crew during MET assessment.
Chapter 8

Air Traffic Services Maintenance Training Program

This chapter specifies the procedures for implementing and maintaining a uniform air traffic services maintenance training program (AMTP) for US Army ATC maintenance technicians. The AMTP establishes the standards for measuring the technical proficiency of ATC maintenance technicians. It also ensures the technical competence of all maintenance personnel having direct responsibility for the safe operation of systems/subsystems/equipment critical to air navigation and ATC. The program establishes the procedures for documenting the technicians’ proficiency, granting authority, and assigning certification responsibility.

SECTION I - PROGRAM DEVELOPMENT

8-1. The AMTP consists of six steps containing three phases of training. The AMTP is designed to administer a certification program with the goal of providing qualified technicians that meet the stringent requirements for properly maintaining ATC equipment. The technician must satisfy the theory and performance requirements specified in this chapter to meet qualification requirements of the assigned position. After completing qualification requirements, the technician may be assigned the responsibility of certifying specific systems/subsystems/equipment.

8-2. The responsibility for the certification program is shared by the ATS unit commanders and AMTP examiners. The examiners assist with the development of comprehensive examinations used as part of the certification process for maintenance technicians. This certification applies only for the specified ATC system/subsystem/equipment. The examiner must possess certification for the entire system on which he examines another technician.

8-3. Designated examiners—
- Provide overall direction to, and guidance on, the AMTP.
- Develop unit training plans to meet theory and performance examination requirements.
- Standardize and continually evaluate and update all phases of the AMTP.
- Administer theory and performance examinations.
- Determine the systems to be added or deleted from the AMTP.
- Resolve comments, questions, and disputes about the examinations with ATSCOM.
- Maintain database files containing complete verification records.

8-4. AMTP examiners will be designated in writing by commanders directly responsible for ATS maintenance personnel according to AR 95-2. These examiners will exercise control over the AMTP for their unit of assignment.

8-5. AMTP examiners may certify technicians from other units if the requesting unit commander does not have a qualified examiner. AMTP examiners for ATSCOM, ACOMs or Theater Airfield Operations Group will maintain training certification and related training records for ATS maintenance personnel assigned to the headquarters staff element and provide command guidance to subordinate units. Examiners—
- Maintain files containing complete technician certification and related training records on each technician.
- Provide the technician with the training materials needed to accomplish comprehensive training on the systems/subsystems/equipment.
- Administer and monitor the theory and performance examinations.
Chapter 8

- Develop and document OJT on the site-specific systems/subsystems to support the certification program.
- Advise the commander on the status of ATS maintenance certification.
- Coordinate with the maintenance chief for NOTAM if training is required on any in-use operational system/subsystem/equipment.
- Conduct and record the annual review on DA Form 3479.
- Conduct the annual review of the certification records documenting that the technician—
  - Maintains the certification proficiency level.
  - Is assigned only those certification responsibilities supported by valid certification authority.

8-6. The flow chart in figure 8-1, page 8-3, depicts the ATS maintenance technician certification process, which begins after the technician is assigned to the unit. The following steps outline the certification process:

**Note.** If certified on a particular system/subsystem, the maintenance chief reviews the technician’s training records and conducts a practical evaluation. Upon successful demonstration of tasks indicated on the CTL, the technician is awarded RL 1. If not previously certified, continue with step 3.

- Step 1. The technician enters the maintenance training program; technician is either RL 2 or RL 3. This step includes—
  - Establishing training records.
  - Orientation on equipment.
  - Orientation on facilities and their locations.
  - Initial counseling on maintenance and shop operations.
  - Statement of performance expectations.
  - Orientation on safety.
  - Overview of classes.
  - SOP requirements.

- Step 2. The technician enters a phased training program (RL 3) on individual systems or equipment (for example, AN/TSQ-221 and Army-Navy/very high frequency vehicular radio communications [AN/VRC]-103). This step consists of—
  - Phase I. The technician is trained on the theory of operation, system/subsystem/equipment operational characteristics, power requirements, frequency spectrum, and normal operating standards. Also covered in this phase are the required reference material, forms and records, maintenance allocation charts, PMCS and TMDE procedures and requirements, and local SOP requirements.
  - Phase II. The technician is trained on systems and subsystems preventive maintenance procedures, certification (ATNAVICS) and TMDE usage requirements and settings. This training also includes reference material and local SOP requirements, forms, and records completion.
  - Phase III. The technician is trained on system and subsystem fault localization, schematic use, maintenance allocation charts, and major and minor component installation/removal procedures. This training also includes tool requirements and usage, safety and quality control requirements, supply procedures, and reference material and local SOP requirements.

- Step 3. When the technician has satisfactorily completed the three phases above, the examiner will submit request for examination on the ATSCOM website under the Web-6R tab.

- Step 4. The examiner administers the examination to the technician in the following two parts:
  - Part 1. The technician completes the comprehensive theory examination, which consists of questions on Phases I, II, and III.
  - Part 2. The technician is given the hands-on performance examination on Phases II and III.
**Note.** All theory examinations are “open book.”

- Step 5. The examiner grades the performance examination and sends the results to the ATS Maintenance Certification Manager at usarmy.rucker.forscom.mbx.afat-ats-mc@mail.mil. The technician is issued a certification on that system/subsystem/equipment and awarded RL 1. If the technician fails the examination, the examiner identifies the specific areas in which the technician had problems. The technician is re-entered in the training program.

- Step 6. The technician is now certified on the applicable system or subsystem and is designated RL 1. The flow process is continued when the technician encounters a new system or new equipment. The technician is designated RL 1 upon certification on all unit assigned systems or subsystems.

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**SECTION II - THEORY OF OPERATION AND PERFORMANCE EXAMINATIONS**

8-7. All theory and performance examinations used in the certification program will be used to determine whether the examinee knows the theory and practical techniques required to perform maintenance, and diagnose and correct deficiencies on ATC systems/subsystems/equipment. Comprehensive examinations are developed using TMs, FMs, TCs, handbooks, manufacturer manuals, joint acceptance standards, and senior maintenance personnel. Equipment examinations are comprehensive in scope, covering not only the equipment within the system but also the auxiliary equipment considered part of the system.

8-8. The theory examination will test the technician’s understanding and knowledge of a wide range of information. The questions will cover system oriented theory, operational characteristics, subsystems, power...
requirements, frequency spectrum, and normal operating standards. Some questions require calculations and analytical reasoning.

Administration of Theory Examinations

8-9. When administering the theory examinations, the examiners—

- Understand and apply mandatory secure-handling requirements to protect program integrity.
- Do not discuss or disclose the contents of examinations.
- Prepare a computer with internet connection in an appropriate area for administering examinations and give the examinee required instructions and materials.
- Caution the examinee on the official nature of the examinations and the penalties involved for disclosure of the contents.
- Allow examinees the use of reference material (personal or supplied) during the examinations.
- Control and time examinations as prescribed and process completed examinations as instructed.

8-10. If the technician fails the theory examination, he is ineligible to take the performance examination. If a technician passes the theory examination but fails the performance examination, he is not required to take another theory examination. The examiner will ensure he uses a different version of the examination each time a technician retakes the examination. A technician may not take a theory or performance examination more than three times in a 12-month period.

Security in Handling Theory Examinations

8-11. Everyone in the examination chain concerned with the certification process must maintain security in the handling of theory examinations. Compromise of examinations in any form is a serious violation of the rules of conduct and discipline. The content of the examinations will not be discussed with technicians who have not achieved a passing score. Any violation will require the appropriate official to take disciplinary action. Any person having personal knowledge of a compromise on any segment of the theory examination will advise the unit commander and ATSCOM immediately of details.

Performance Examinations

8-12. Performance examinations are used to demonstrate a technician’s proficiency. These examinations vary in length according to the complexity and scope of the system/subsystem/equipment. The use of reference material is encouraged during the examination. The examinee makes the actual adjustments, alignments, or software program changes; conducts preventive maintenance procedures, certification (ATNAVICS) and evaluates system performance; and corrects equipment maladjustments. The examiner observes the results and verifies the accuracy of the adjustments, alignments, or changes.

8-13. The examiner may deviate from the printed examination to ensure the examinee has the required proficiency. The examinee should be told of any deviations before taking the examination.

8-14. If there is a published OJT course, the performance examination may be incorporated as an integral part of OJT. When there is no published OJT course, the examination may be used as a study outline. When the examination is so used, the individual who provides OJT should not be the examiner.

8-15. The examiner may make only minor changes to the performance examination to make it compatible with the system used. Operations and questions other than those given on the performance examination may be used to assure the examinee’s total system knowledge. When maintenance procedures or system configurations change, facilities will recommend changes be made to the examinations. Recommendations for changes to examinations will be sent to ATSCOM ATS Maintenance Certification Program Manager at (334) 255-8094, DSN 558-8094, or email: usarmy.rucker.forscom.mbx.afat-ats-mc@mail.mil.

Administration of Performance Examinations

8-16. The distribution of the performance examination prior to the examination is encouraged. The technician will be made thoroughly familiar with the examination requirements and related test equipment during OJT. The examinee will complete the examination unassisted, except in instances requiring two people to make a particular adjustment or alignment.
8-17. Once the examinee has completed an operation, the examiner grades the performance. Failure of one operation constitutes failure of the entire examination.

8-18. If a technician requiring certification authority fails an examination, the supervisor will return the technician to the phased training program. The improvement program will be documented in the technician’s official certification and related training record. The program will contain—

- Training for the deficient areas identified.
- Recommended study material.
- Time schedule for improvement program completion.
- Name of instructors and method of documenting training.

8-19. Certification examinations will be reviewed and updated by unit examiners regularly. Examiners will notify the ATSCOM ATSMCP manager at usarmy.rucker.forscom.mbx.afat-ats-mc@mail.mil to correct issues on exams when redundancy is discovered or questions are detected that are not correct or relevant to the system/subsystem/equipment for which the technician is being tested.

**COMMANDER’S EVALUATION**

8-20. The commander’s evaluation provides an opportunity to assess newly assigned ATS maintenance personnel and allows the association of a higher RL due to previous air traffic system certifications. This evaluation consists of a records review by the commander or his designated representative within 30 days after the maintainer is assigned to the unit. If the maintainer successfully completed all phases of an AMTP in the same ATS system and demonstrates the appropriate skill level on all tasks of the CTL he may be initially designated RL 1. Commanders should utilize practical hands-on assessments to confirm proficiency levels of maintainers. The following guidelines apply:

- Graduates of MOS 94D school who are on their first unit of assignment may only be awarded RL 3 until they have successfully completed maintenance certification on at least one ATS system.
- Previously certified ATS maintenance personnel may not be awarded RL 1 if more than 12 months have passed since direct maintenance actions have been performed on the ATS systems of the present unit.

**COMMANDER’S TASK LIST**

8-21. The CTL is a written agreement between the commander and the team member. The requirements established by the CTL are tailored to the proficiency training needs of the individual team member. It specifies the tasks the team member must accomplish during the training year.

8-22. All maintenance specific tasks will be selected by the commander and incorporated into the CTL for team members who perform maintainer duties. These maintenance tasks cover procedures, knowledge, and skills required to perform maintenance on ATS systems and sub systems.

8-23. Commanders may develop additional tasks for inclusion on the CTL, as needed, to accomplish the unit’s mission. The commander lists them separately on the CTL when an additional task is developed by the unit, the commander must perform a risk analysis for performance of the task, and determine training required for personnel to attain proficiency in the task. The additional tasks must include—

- Task number.
- Title of the task.
- Conditions under which the task is performed.
- Standards for performance of the task.
- Description of how the task is performed.
- Considerations for performance of the task such as environmental and safety.
- Training/evaluation requirements.
Figures 8-2 and 8-3, page 8-6 and page 8-7, provide an example of DA Form 3479-14, Commander’s Task List (ATS) ATS Maintainer.

![Commander's Task List (ATS) ATS Maintainer](image)

**Figure 8-2. Sample DA Form 3479-14 (front)**

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**Chapter 8**

8-24. Figures 8-2 and 8-3, page 8-6 and page 8-7, provide an example of DA Form 3479-14, Commander’s Task List (ATS) ATS Maintainer.

---

**Commander’s Task List (ATS) ATS Maintainer**

For use of this form, see TC 3-04.15. The proponent agency is TRADOC.

### ATS Maintainer Personal Data

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<tr>
<td>Tone, Tommy T.</td>
<td>SPC</td>
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**Duty Position**

MAINTAINER

**Date Assigned**

21 Jul 2019

**Operating Initials**

TE

**Control Type**

Initial

**Table: Required Tasks**

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<th>TASK</th>
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</thead>
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<td>091-84D-1041</td>
<td>Perform Preventive Maintenance Checks and Services on Air Traffic Navigation, Integration and Coordination System, (ATN/AVICS) AN/TPN-31</td>
<td>1 Aug 2019</td>
</tr>
<tr>
<td>091-84D-1061</td>
<td>Repair Air Traffic Navigation, Integration and Coordination System, (ATN/AVICS) AN/TPN-31</td>
<td>2 Aug 2019</td>
</tr>
<tr>
<td>091-84D-2010</td>
<td>Prepare Air Traffic Navigation, Integration and Coordination System (ATN/AVICS), AN/TPN-31 for Flight Check</td>
<td>21 Oct 2019</td>
</tr>
<tr>
<td>091-84D-2020</td>
<td>Manage Preparation of Air Traffic Navigation, Integration and Coordination System (ATN/AVICS) AN/TPN-31 (Skill Level 2 Only)</td>
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<td>091-84D-1002</td>
<td>Perform Organizational Preventive Maintenance Checks and Services on IPP Interrogator AN/TPX-56</td>
<td>5 Aug 2019</td>
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<tr>
<td>091-84D-1101</td>
<td>Repair Multipurpose Electronic and Fiber Optic Cables</td>
<td>7 Aug 2019</td>
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<td>091-84D-1106</td>
<td>Repair Commercial Off the Shelf (COTS) Air Traffic Control (ATC) Automation Systems</td>
<td>25 Sep 2019</td>
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<tr>
<td>091-84D-1181</td>
<td>Repair Air Traffic Control (ATC) Central AN/TSW-7A</td>
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<td>091-84D-1190</td>
<td>Repair Mobile Tower System AN/MQG-135</td>
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<td>091-84D-1600</td>
<td>Operate General Purpose Test Equipment</td>
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<td>091-84D-1680</td>
<td>Operate Electronic Shop, Shelter Mounted, Avionics AN/MAG-83, G/C, R/S, 47</td>
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<td>091-84D-1280</td>
<td>Repair Tactical Terminal Control System AN/TSQ-199</td>
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<tr>
<td>091-84D-1380</td>
<td>Repair Tactical Airspace Integration System (TAIS) AN/TSI-221</td>
<td>24 Oct 2019</td>
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<td>091-84D-1910</td>
<td>Maintain Compatible Motors, Compatible 6 Mi. Inter/Transmitter Radio Set</td>
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<td>Manage Preparation of the Mode S Transponder System (MOTS) AN/MAG-135 (Skill Level 2 Only)</td>
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<tr>
<td>091-84D-2050</td>
<td>Administrator Air Traffic Control (ATC) Logistics Operations (Skill Level 2 Only)</td>
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<tr>
<td>091-84D-2060</td>
<td>Administrator Maintenance Certification Records and Forms (Skill Level 2 Only)</td>
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<tr>
<td>091-MCST-3005</td>
<td>Develop a Maintenance Standing Operating Procedure (MPOP) (Skill Level 3 Only)</td>
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<tr>
<td>091-MCST-3006</td>
<td>Conduct Quality Assurance/Quality Check (QUC/QU/C) (Skill Level 3 Only)</td>
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<tr>
<td>091-MCST-3007</td>
<td>Conduct Shop Operations (Skill Level 3 Only)</td>
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<tr>
<td>091-MCST-3008</td>
<td>Administrator Logistics Information Systems (Skill Level 3 Only)</td>
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</tr>
<tr>
<td>091-MCST-3009</td>
<td>Implement Command Maintenance Discipline Program (CMDP) (Skill Level 3 Only)</td>
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<td>091-CLS-3003</td>
<td>Conduct Administrative Procedures at the Platoon Level (Skill Level 3 Only)</td>
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<td>091-CLS-3004</td>
<td>Administrator Training Programs at the Platoon Level (Skill Level 3 Only)</td>
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</tr>
<tr>
<td>091-CLS-3005</td>
<td>Maintain Hand Recepts (Skill Level 3 Only)</td>
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<tr>
<td>091-CLS-3007</td>
<td>Conduct a Military Briefing (Skill Level 3 Only)</td>
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<td>Signature</td>
<td>Date</td>
</tr>
<tr>
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<td>SPC Torni, Tommy T.</td>
<td>Digitally signed by Torni, Tommy T.</td>
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<tr>
<td>SSG Grease, Billy J.</td>
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<td>CPT Smith, Jack P.</td>
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<td>12 Feb 2020</td>
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</tbody>
</table>

Figure 8-3. Sample DA Form 3479-14 (back)
8-25. Maintenance personnel assigned to an ATS unit will be certified within the time limits specified in AR 95-2.

8-26. The commander should consider unit RLs and mission requirements when training is initiated for the particular system or sub system. Training time begins the first duty day after an individual is formally assigned to the maintenance section and will be annotated on DA Form 3479-9.

Note. AR 95-2 establishes training time limitations and authorized reasons to stop maintenance training.

8-27. RL training begins with development of proficiency at the individual level and progress through team to collective proficiency. This process follows the crawl-walk-run model of training. Tasks required for air traffic maintenance personnel to progress from various levels are contained within the Soldier’s CTL. CTL requirements are battle-focused, task-based requirements derived from the unit’s METL. The following guidelines should be utilized when assigning RLs to air traffic maintenance personnel and assessing AMTP progression.

**Readiness Level-1**

8-28. Air traffic maintenance personnel are awarded RL 1 upon completion of AMTP training requirements. An ATS maintainer awarded RL 1 has been determined to possess the tactical and technical skills needed to perform maintenance duties on the ATS system and subsystems. ATS maintainers should be removed from RL 1 and identified RL 2 when additional training is warranted due to a lack of proficiency.

**Readiness Level-2**

8-29. ATS maintenance personnel are awarded RL 2 when undergoing advanced ATS system training at the team level and the required CTLs for RL 1 have not yet been met. This RL is characterized with proficiency in collective tasks and team tasks associated with the advanced maintenance of ATS systems. ATS maintenance personnel are awarded this RL when they have achieved certification on at least one ATS system of the unit. Tasks are performed in complex varying environments and require successful coordination and integration of combined arms operations. Advanced maintenance procedures during all phases of tactical operations are a critical element of this level.

**Readiness Level-3**

8-30. ATS maintenance personnel are awarded RL 3 when they have completed an MOS awarding school and/or are on initial assignment to an ATS unit and have not achieved maintenance certification on any ATS systems of the unit. This RL is characterized with the individual task proficiency in the installation, operation, and unit level maintenance of air traffic systems. This phase reinforces basic maintenance procedures and theories. A maintainer assigned this RL is under the direct supervision of leaders and trainers of the ATS unit when performing maintenance actions.

**Readiness Level-4**

8-31. ATS maintenance personnel are awarded RL 4 when AMTP progression is not required or has been temporarily suspended due to the following:

- Maintainer is assigned to a staff position not requiring AMTP progression and/or development.
- Maintainer is pending MOS reclassification/chapter actions.
- Maintainer is assigned to a National Guard position without being a graduate of the 94D School.
MAINTAINER STATUS AND UNIT STATUS RELATIONSHIP

8-32. The objective evaluation and assessment of training is measured against approved and published standards as discussed in FM 7-0. The readiness of an ATS unit depends on individual, crew, and collective training. Commanders assess Mission Essential Tasks (MET) from the unit’s DA Standardized METL to determine proficiency.

8-33. MET proficiency and published components of training readiness determines a unit’s T-Level. The Objective Task Evaluation Criteria Matrix is the Army standard evaluation criteria used by commanders to objectively assess training. Commanders utilize Training & Evaluation Outlines (T&EO), the Army Objective Task Criterial Matrix, and the guidance above in table 7-1 when conducting ATS MET assessment.
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Appendix A

Reference Material

The ATC chief/facility chief will maintain a current set of facility directives, LOAs, FAA handbooks and orders, ARs, FMs, and TMs. All references will be immediately available to facility personnel for operations, reference, training, and study.

REFERENCE FILES, CHARTS, DIAGRAMS, AND MAPS

A-1. The ATC administration and controller reference files will include the publications listed in this appendix. This file should also contain copies of FTMs, SOPs, operating manuals, and other materials of value to controllers and facility operations. Advances in technology and the accessibility of digital publications have made the need for multiple files unnecessary. An ATC administration reference file will be maintained in the office of the ATC chief/PSG/facility chief/maintenance chief and the controller reference file will be maintained in all ATC facilities. Digital copies may be used as long as computer access is readily available to controller in the ATC facilities. Table A-1 lists the publications required for the ATC administration and controller reference file. Table A-2, page A-3, lists the required maintenance publications.

A-2. All tactical systems will maintain a mobile facility administration/controller reference file (fly-away kit) to include all required administrative/reference information. This kit will also include an FTP and FTM to aid in the transition from a tactical facility training program to an installation facility training program.

Table A-1. Required ATC administration and controller reference files

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<td>Installation</td>
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Table A-1. Required ATC administration and controller reference files

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Table A-2. Required ATC maintenance reference files

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### Unified Facilities Criteria

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**Recent Information File**

A-3. The ATC chief/facility chief will maintain an information file in a folder, binder, or clipboard. The file will be used to post shift schedules and new information about facility operations. This file is temporary. Items are removed and filed according to AR 25-400-2 after all personnel have initialed the document. It will be readily available to controllers in facility operating positions. Each controller will read and initial new
directives, changes, or other materials before assuming a control position. Items may be removed from the file when all controllers have initialed them.

OPERATING POSITION BINDERS

A-4. Each facility will maintain operating position files in a loose-leaf binder, electronic display system or some other suitable display file. These files will be available for each operating position so all controllers have an immediate source for confirming data or obtaining information.

A-5. All local procedures and instruction handbook materials pertaining to a certain operating position will be identified, defined, and maintained. For example, an arrival control position file should include LOAs, memorandums, and other documents pertaining to arrival control procedures.

A-6. Mandatory items for operating position files include—

- Instructions dealing with airfield emergencies (such as in flight/ground emergencies, hijacking, bomb threats, facility evacuation, and position specific responsibilities).
- A list of suitable airports, as determined by the facility chief, showing runways, type of surface lighting, and distance and bearing from the facility.
- Point of contact information for supported airspace control elements (if applicable).
- Suggested items for operating position files, including—
  - Instrument DP diagrams.
  - Extracts from LOAs, LOPs, and facility memorandums.

CHARTS, DIAGRAMS, AND MAPS

A-7. Each ATC facility, control TWR, radar facility, and AIC/flight-following facility will maintain certain charts, diagrams, and maps for reference. The requirements for these materials are—

- ATC facility. Each ATC facility will maintain current crash grid maps, sunrise and sunset tables, and FLIPs.
- Control tower. Each control TWR will develop and maintain the following diagrams and charts.
  - Airfield diagram. The airfield diagram will depict runways, ramps, blind spots, ILS-critical areas, helipads, wind equipment, and RT groups. The facility chief will review the chart annually and post the date of review to the chart.
  - Intersection-takeoff diagram. The intersection-takeoff diagram will depict distances remaining rounded down to the nearest 50 feet (for example, 4,075 would be rounded down to 4,050 and 10,045 to 10,000). The intersection-take-off diagram maybe incorporated into the airfield diagram provided no information is omitted and the diagram remains legible.
  - Visibility charts. The facility chief and weather support personnel will prepare a chart of day and night visibility markers. They may use panoramic photographs marked with distances and cardinal compass points. Each marker will be identified and its distance from the TWR noted. The height of the marker also will be noted if used for estimating heights of clouds and obscuring phenomena. The facility chief and weather personnel will review these charts annually; both personnel conducting the review will annotate their name and the date on the chart.
- Radar facility. Each radar facility will keep a runway diagram of each airfield it services and a map of the facility's jurisdiction area. The map will depict airfields, NAVAIDs, Class D airspace, area and section boundaries, memorandum of agreement restricted and prohibited areas, airways, and prominent objects. The facility will also maintain a video map, if the capability exists, and an MVA chart. Appendix D contains details about video maps and MVA charts.
- Airspace information center/flight following facility. Each facility will keep an up-to-date map of its area of responsibility. Chapter two contains additional information about en route flight management procedures.
ADMINISTRATIVE CORRESPONDENCE

A-8. The ATC facility will maintain a file of administrative correspondence. This correspondence should include LOAs, LOPs, and facility memorandums.

LETTERS OF AGREEMENT

A-9. ATC Leaders will negotiate a LOA when operational or procedural needs require the cooperation and concurrence of other persons, facilities, or organizations outside of the facility.

A-10. Conditions requiring the creation of an LOA and examples are found in FAAO 7210.3. The process for development and coordination of a LOA may be found in FAAO 7210.3 with the following exceptions:

- Army facilities and deployed units will coordinate LOAs affecting aircraft operations or pilot procedures with resident and supported aviation unit commanders.
- Army facilities and deployed units (when practical) will forward LOAs as applicable to the FAA service area DAR as identified for that location in AR 95-2, the US Aeronautical Services Detachment-Europe, or the Eighth Army ATC coordinator.
- LOAs between Army units or other Army elements on the same airfield are coordinated with the airfield division chief/commander/manager in lieu of the DAR. LOAs between Army units or other Army elements not on the same airfield, but on the same installation, will be coordinated with the installation AT&A officer in lieu of the DAR.
- LOAs will not be used to describe procedures for the joint use of restricted or prohibited airspace.
- LOA describing procedures for issuance of NOTAMs.

A-11. LOAs will not be used to standardize internal facility administrative procedures. The process for approval and distribution of an LOA can be found in FAAO 7210.3 and AR 95-2. Coordinate all letters with the appropriate DAR during the development stage or upon modification. Provide copies of the final version of these letters to the appropriate DAR. Units operating in host countries will coordinate each LOA with the appropriate office in theater, with USAASD–E for its area of responsibility, the Eighth United States Army ATC coordinator’s office for Korea, or with the appropriate AT&A officer.

A-12. Each LOA will be reviewed annually by all signatories and documentation of the review will be kept on file in the facility. The DAR; the Commander, United States Army Aeronautical Services Detachment-Europe (USAASD–E); the Eighth United States Army ATC coordinator’s office (Korea); or the ACOM/ASCC/DRU/ARNG/Installation AT&A officer will participate in these reviews.

A-13. LOAs will be stored and maintained according to the requirements for Army Records Information Management System (ARIMS) file 95-1f. Figure A-1, page A-7, provides an example of the LOA format.
LETTERS OF PROCEDURE

A-14. ATC leaders will prepare a LOP for stating specific terms regarding the joint use of restricted or prohibited airspace as defined in 14 CFR Part 73 or local theater equivalents.

A-15. ATS leaders responsible for developing LOP will ensure LOPs are worded so the Army maintains the greatest degree of mission flexibility within limits prescribed by law or regulation and that each will address, at a minimum—

- Scheduling procedures and updates, to include requirement and time parameters for providing updates to the schedule.
- Activation/deactivation procedures.
- Activation/deactivation times.
- Transfer of the airspace during emergency conditions.
- Transfer of the airspace for situations caused by weather.

A-16. Example process steps for development, coordination, approval, and distribution of a LOP may be found in FAAO 7210.3 except—
Army facilities will format LOPs using the guidance and examples in AR 25-50 for memorandums of agreement. The term "letter of procedure" will be substituted for "memorandum of agreement". Additional paragraphs such as "cancellation" and "attachments" may be added as needed. LOPs originated by other agencies (FAA, USAF) which the Army will sign may follow the format of the originating agency.

In addition to the requirements in FAAO 7210.3, Army facilities and deployed units (when practical) will coordinate LOPs with the installation AT&A officer.

Army facilities and deployed units (when practical) will forward LOPs as applicable to the FAA service area DAR as identified for that location in AR 95-2, the U.S Aeronautical Services Detachment-Europe, or the Eight Army ATC Coordinator. A cover memorandum will accompany the LOP and must include any changes to an existing LOP, along with background information for each change. If the LOP is new, a brief description of the operations to be accommodated should be outlined. The unit commander will approve/sign the memorandum.

To ensure timeliness and conformance to current policies and directives, the LOP will be reviewed annually no later than the anniversary month of the original document. A memorandum or cover letter documenting the review will be posted to the LOP. A single document may be used to record the annual review of more than one LOP provided each LOP is specifically listed on the document.

LOPs will be stored and maintained according to the requirements for ARIMS file 95-2f.

**Facility Memorandums**

The ATC chief/facility chief will issue facility memorandums when internal facility operations must be regulated and standardized. Memorandums will contain instructions on the administrative or operational practices and procedures within the facility. The ATC chief may issue a memorandum as a combined facility document when it applies to two or more ATC facilities under his jurisdiction.

Memorandums will follow the standard Army memorandum format according to AR 25-50 and will be numbered in sequence (19-1, 19-2 meaning the first/second memorandum for 2019). They will be limited to one subject, operation, or procedure; enclosures and attachments may be included. Facility memorandums will be reviewed annually no later than the anniversary month of the original document. The ATC chief/facility chief will date and sign the annual review.

**Operating Records and Forms**

Facility records will be managed according to the procedures in AR 25-400-2 and as directed by the servicing adjutant general. They are a part of the facility's permanent records and subject to review by authorized personnel or agencies. Entries on all facility operating forms will be neat and accurate. When practical, entries should be typewritten (computer generated forms may be used); however, entries may be printed in ink. Incorrect entries will not be erased or struck over. When an entry must be corrected, a line will be typed or drawn through the incorrect portion and the correct entry made. The controller correcting the error will initial the correction.

Controllers witnessing procedural or material operational hazards or unsafe ATC practices or procedures will submit DA Form 2696, Operational Hazard Report, to their supervisors. Procedures covering the completion and disposition of DA Form 2696 are covered in DA Pam 385-90. The ATC chief/facility chief will ensure blank copies of this form are available. He will also ensure completed forms are correct and submitted through the appropriate commander to the local aviation safety officer or airfield operations officer. The FTM will include instructions for preparing and submitting DA Form 2696.

Operational hazard reports are not to be used to report alleged flight violations for punitive action. AR 95-1 provides guidance for processing alleged flight violations.
AIR TRAFFIC CONTROL FACILITY PERSONNEL STATUS REPORT

A-24. All facilities will prepare and submit DA Form 3479-6 or an automated version of the form within the first 15 workdays of the succeeding calendar month. All Army National Guard and Army Reserve units will submit DA Form 3479-6 quarterly based on a calendar year. The units will forward this completed unclassified form to the ACOM headquarters through the normal chain of command. They also will send a copy directly to Commander, ATSCOM, AFAT-ATS-CT, 30501 Nevin Street, Cairns Army Airfield, Fort Rucker, Alabama 36362-5265. All installation ATC facilities will provide the local airfield division chief/commander/manager with a copy of the monthly traffic record (block 11 of the form). The responsible commander or his designated representative will verify the accuracy of the report and sign in block 15b prior to submission to ATSCOM. Following submission, the signed version of this form will be kept on file and retained for 12 months. Instructions for completing the manual DA Form 3479-6 are listed in table A-3.

Note. If there is an advantage in doing so, this form or data may be transmitted by electronic means.

Table A-3. Instructions for completing DA Form 3479-6

| Block 1. Unit. | Enter the agency, battalion, company, platoon, or detachment having command of the ATC facility, branch, division, element, or section identified in the report. Include the mailing address of the city, post, or station. |
| Block 2. Facility, Branch, Division, Element, Section. | Enter the name, title, or number of the section to which ATC personnel being reported are assigned (for example, Forney AAF, Hanchey Army Heliport (AHP), 1st Platoon, or 3rd Platoon). |
| Block 3. Date. | Enter the month and year the report covers in the following format: MM YY (Dec 02). |
| Block 4. Hours of Operation. | Enter the number of hours per day and days per week that each facility or staff element operates. More than one entry may be required to indicate different hours of operation. (For example, Monday through Friday/16 hours [M-F/16] or Saturday, Sunday, and Holidays/8 hours [S-S-H/8].) |
| Block 5. Manned Positions. | Enter an X under each position normally manned by an individual dedicated to that position during each shift. If an individual is normally responsible for more than one position during a given shift, show position responsibility by entering C1 under each position. (For example, show the normally combined positions of GC and LC by placing C1 under each position for that shift). If more positions are combined and assigned to a second individual, enter C2 under these positions. Shift A will be the first shift of the day (for example, 0600-1400 or 0700-1500). Shift B will be the second shift of the day, and shift C will be the third shift of the day. The facilities that do not operate on weekends and holidays will use shift D for those periods. |
| Block 6. TDA Authorizations (by MOS). | Enter both controller and maintenance ATC personnel by MOS (or job series for civilians); follow with the authorized total and on-hand total (for example, 15Q 5/4, 2152-2/2, 94D-2/1, or 0856-1/2). Do not indicate skill levels. DA Form 3479-6 reporting is for the status of the facility/section on the last day of the month. All personnel on SD or temporary duty are considered on-hand at the losing facility/section for reporting purposes. Any person that has PCS, transferred, end term of service (ETS), terminated employment, or is on terminal leave during the course of the month (to include the last day) is no longer on-hand at the end of the month. |
| Block 7. TOE Authorizations (by MOS). | Enter totals the same way as in block 6. |
| Block 8. Aircraft Activity (by Shift). | Enter the total aircraft activity for each shift. Using the installation facility criteria (see instructions in block 11), report the aircraft activity for tactical ATC exercises by shift only. For installation facilities, the totals in block 8 will be the same as the totals in block 11. |
### Table A-3. Instructions for completing DA Form 3479-6

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<th>Use this block to explain any entry in blocks 1 through 8.</th>
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<td>Enter alphabetically, by facility or section, all assigned military and civilian controller, and maintenance personnel. Complete block 10 as shown below:</td>
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<tr>
<td></td>
<td>Column (a) Name. Enter the individual’s last name, first name, and middle initial.</td>
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<td>Column (b) Rank. Enter the rank for military and pay grade for civilian employees (for example, SSG, GS 11, or WG 10).</td>
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<td>Column (c) MOS. Enter the individual’s primary MOS. For civilians, enter 2152 or 0856, as appropriate.</td>
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<td>Column (d) ETS. Enter the individual’s current ETS/retention control point date (military only).</td>
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<td>Column (e) ATCS No. Enter the individual’s assigned ATCS certificate number.</td>
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<td>Column (f) Date Assigned. Enter the date the individual was assigned to a tactical section or facility for training. Enter a new assigned date each time an individual is moved geographically or is moved from one facility to another within the same facility complex (for example, Heidelberg to Wiesbaden or TWR to GCA). If dual rated, the date assigned will be the facility/section of primary assignment.</td>
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<td>Column (g) Date Rated. Enter the letter T for trainee. Enter the date the individual was issued a facility rating for that facility. This date will correspond to the date entered on the back of the ATCS certificate. If, for example, an individual is rated in TWR and working in GCA, make no entry in this column until he becomes rated in GCA. Annotate the TWR rating, however, in the Remarks column.</td>
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<td>Column (h) Remarks. Enter the following information, as applicable:</td>
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<td>The gaining unit will list SD personnel or personnel not working in the MOS and indicate the primary unit.</td>
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<td>The primary unit will list SD personnel and indicate the location of the SD. Indicate when an individual is a 90, 60, and 30-day loss for ETS or PCS loss. Units reporting their DA Form 3479-6 electronically will ensure surrendered ATCS certificates are mailed according to the standards associated with the paper-filed format.</td>
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<td>Enter REQ if making a request for reissuance of an ATCS certificate. State the reason for the request, such as lost, worn, or name change; indicate the date the individual completed ATC School. These entries will remain in the remarks column until the individual receives a new ATCS certificate.</td>
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<td>Enter primary and additional ATC duty assignments (for example, facility chief, training supervisor/specialist, or examiner).</td>
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<td>Enter the number of calendar months an individual is extended with a TTE and the expiration date of the extension. An approved TTE starts the day after the initial rating period ends. The TTE expires the same day on a later calendar month. Include the reason the individual did not become rated, qualified, or certified in the prescribed time.</td>
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<td>Enter groundings, and include the estimated date for return to duty. List the reason for grounding using one of the following terms: positive urinalysis, medical, administrative, or disciplinary.</td>
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<td>Enter reclassification actions. An individual being reclassified remains on report with no ATCS number until reclassified.</td>
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<td>State the reason for suspension (for example, apathy, lack of ability, or pending medical evaluation).</td>
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<td>Enter the dual rating (for example, TWR/GCA).</td>
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Table A-3. Instructions for completing DA Form 3479-6

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<tr>
<td>11.</td>
<td>Enter any other data (for example, maintenance certified [AN/TSQ71B, FPN-40], pathfinder, tactical certification, or additional skill identifiers as appropriate).</td>
</tr>
<tr>
<td>Monthly</td>
<td>In addition to the data in block 8, ATC facilities will maintain a monthly traffic count in the following categories:</td>
</tr>
<tr>
<td>Traffic</td>
<td>Block 11a. Enter the name of the AAF/AHP.</td>
</tr>
<tr>
<td>Record.</td>
<td>Block 11b and 11c. TWR–IFR and TWR–VFR. Movement by (1) local and (2) transient aircraft. Use the following criteria to count control TWR activity:</td>
</tr>
<tr>
<td></td>
<td>Count a single aircraft arrival, departure, or overflight as one.</td>
</tr>
<tr>
<td></td>
<td>Count a single aircraft touch-and-go, stop-and-go, low approach, missed approach, or wave-off/go-around below the traffic pattern altitude as two.</td>
</tr>
<tr>
<td></td>
<td>Count formation flights according to the number of aircraft in the formation. (For example, count a flight of two aircraft flying a low approach as four and a flight of two aircraft making a full stop as two.)</td>
</tr>
<tr>
<td></td>
<td>Count helicopters remaining within the ATA while on air taxi to or from working or alert areas the same as departures or arrivals. Enter the count in the TWR VFR local column.</td>
</tr>
<tr>
<td></td>
<td>Count UAS traffic the same as manned aircraft. TWR–VFR movement by (1) local and (2) transient aircraft.</td>
</tr>
<tr>
<td>11d.</td>
<td>Use the following criteria to count approach control activity:</td>
</tr>
<tr>
<td>ARAC</td>
<td>ARTS/STARS (TOWER DISPLAY WORKSTATIONS) have the capability for automated traffic count and should be used fully. Unique traffic that cannot be programmed into the automation system will be counted and added to the automated count manually.</td>
</tr>
<tr>
<td>(not to include final)</td>
<td>Count aircraft operations the same as TWR operations. However, count formation flights as only one operation.</td>
</tr>
<tr>
<td>by (1)</td>
<td>Count aircraft as instrument operations when they are provided separation regardless of existing weather conditions or type of flight plan.</td>
</tr>
<tr>
<td>IFR and</td>
<td>Count VFR operations, and enter them in the same format and category as instrument operations (for example, military, air carrier, and general aviation).</td>
</tr>
<tr>
<td>(2)</td>
<td>Count UAS the same as manned aircraft.</td>
</tr>
<tr>
<td>11e.</td>
<td>Count each GCA pattern (vector) to the final approach course/fix as one or when radar vectors are provided as part of a missed approach. When GCA/ASR radar is used for range monitoring/flight-following of UAS aircraft, the provisions established for flight-following facilities will be used. If active separation for IFR UAS from other UAS or manned aircraft is applied, IFR count will apply.</td>
</tr>
<tr>
<td>GCA</td>
<td>Count each GCA ASR final, and PAR final as one.</td>
</tr>
<tr>
<td>radar</td>
<td>Block 11f. GCA/ARAC (1) final ASR and (2) final PAR.</td>
</tr>
<tr>
<td>vector</td>
<td>Count each GCA ASR final, and PAR final as one.</td>
</tr>
<tr>
<td>(pattern)</td>
<td></td>
</tr>
<tr>
<td>Block 11g.</td>
<td>AIC/TWR FF (total count). Use the following criteria to count total FF activity:</td>
</tr>
<tr>
<td></td>
<td>Count the initial contact with an aircraft as one.</td>
</tr>
<tr>
<td></td>
<td>Count formation flights as a single operation.</td>
</tr>
<tr>
<td></td>
<td>Count each position report made while the aircraft is en route as one. (To be counted, the position report must be posted to the flight progress strip.)</td>
</tr>
<tr>
<td></td>
<td>Count each aircraft entering or departing an unmanned area (restricted area, range and NOE, NVD route) as one. (To be counted, this data must be posted to the flight progress strip.)</td>
</tr>
<tr>
<td></td>
<td>Count UAS traffic the same as manned aircraft.</td>
</tr>
<tr>
<td>12.</td>
<td>Enter the date the form was completed.</td>
</tr>
</tbody>
</table>
Table A-3. Instructions for completing DA Form 3479-6

| Block 13. Prepared by. | Enter the name of the individual who completed the form and the telephone numbers (commercial, including the area code, and DSN). A signature is not required. |
| Block 14. Last TB received. | Enter the last TB message received. |
| Block 15a. | Authentication officer. Enter the name, title, office symbol, and telephone numbers (commercial, including the area code, and DSN) of the commander or civilian equivalent. |
| Block 15b. | Signature of authentication officer. The commander or civilian equivalent signs this block. |

Note. The appropriate acronyms will be used for position titles. If the appropriate acronyms are not listed in the glossary of this publication, local acronyms will be used in block 5 and defined in block 9, Remarks.


**SYSTEM OUTAGE REPORTING**

A-25. System outages involving ATC installation equipment will be reported to ATSCOM on a monthly basis as an attachment to DA Form 3479-6. Outages include all out-of-service conditions (for example: one channel of a dual-channel system out-of-service condition). The attachment will contain the following:

- Unit/organization.
- Facility/airfield.
- System/subsystem.
- Serial number.
- Date out of service (DD MM YY).
- Date returned to service (DD MM YY).
- Not mission capable maintenance hours.
- Not mission capable supply hours.
- Reason for outage.
- Restore method. (Action[s] taken to return system to fully mission capable status).

**GROUND-CONTROLLED APPROACH OPERATIONS LOG**

A-26. Flight strips or DA Form 3501, *GCA Operations Log* (figure A-2, page A-13), may be used to record air traffic in GCA facilities. When used, DA Form 3501 is initiated at the beginning of each calendar day (0000 local time or whenever the facility begins operations for the day). Time entries will be in UTC. The ATC chief/PSG/facility chief will review each completed DA Form 3501 and sign the authentication block (block 2). If more than one form is required to log daily activities, the pages will be numbered consecutively and stapled together. Daily totals will be entered on the final form.
A-27. DA Form 3501 will be completed as follows:

- **Item 1.** Enter the name of the GCA facility.
- **Item 2.** The facility chief signature is required.
- **Item 3.** Enter date.
- **Item 4a and 4b.** Insert an X for the aircraft of a VFR or IFR flight plan in the applicable column.
- **Item 4c.** Enter aircraft identification or call sign (R12345).
- **Item 4d.** Enter aircraft type (UH60).
- **Item 4e.** Enter the time of radar contact in UTC.
- **Item 4f.** Enter “LA” for low approach, “FS” for full stop, and “TG” for touch-and-go, or other type of approach.
- **Item 4g.** Enter the operating initials of the controller conducting the supervised or simulated ASR pattern portion of the approach and the initials of the controller who is signed on behind a trainee or controller on remedial training. An example would be BR/CB.
- **Item 4h.** Enter the operating initials of the controller conducting the live unsupervised and non-simulated ASR pattern portion of the approach.
- **Item 4i.** Enter the operating initials of the controller conducting the supervised or simulated ASR final portion of the approach and the initials of the controller who is signed on behind a trainee or controller on remedial training. An example would be BR/CB.
- **Item 4j.** Enter the operating initials of the controller conducting the live unsupervised and non-simulated ASR final portion of the approach.
- **Item 4k.** Enter the operating initials of the controller conducting the supervised or simulated final portion of the precision approach and the initials of the controller who is signed on behind a trainee or controller on remedial training. An example would be BR/CB.
Appendix A

- **Item 4l.** Enter the operating initials of the controller conducting the live unsupervised and non-simulated final portion of the precision approach.
- **Item 4m.** Enter an X if the approach is an emergency or No Gyro simulated or live.
- **Item 4n.** Enter the time the aircraft was released to another agency, TWR, or ARAC.
- **Item 4o.** Enter remarks such as missed approach the controller’s initials followed by ILS MON if the controller monitored a NAVAID approach or departure (CB ILS MON) or any other control instructions.

A-28. Add up all approaches for VFR and IFR aircraft in columns 4g through 4l at the bottom of DA Form 3501 and write the cumulative total is written in the bottom left corner of DA Form 3501.

A-29. DA Form 3501 will be filed daily with DA Form 3502 and retained for a minimum of twelve calendar months. For example, all logs in June 2019 may not be destroyed until June 2020. ARAC facilities may use flight progress strips to record traffic movements instead of DA Form 3501. Flight progress strips will be maintained for six calendar months.

**DAILY REPORT OF AIR TRAFFIC CONTROL FACILITY**

A-30. All Army ATC facilities will use DA Form 3502 to record daily activities. This form will be initiated at the beginning of each calendar day (0000 local time or when facility operations begin for the day). Entries will be in UTC. The logs will be closed at midnight local for facilities operating on a 24-hour basis. Facilities operating less than 24 hours a day will open the log when the facility opens for daily operations and close the logs when the facility officially ends operations for the day.

A-31. If abbreviations or contractions are used, only authorized Army, FAA, and ICAO abbreviations and phrase contractions will be used for entries. The entries will describe all abnormal conditions, unusual occurrences, or items of interest. The operating initials of the individual making the entry will follow all entries in the remarks section of the form. The following are standard entries that shall be made on the DA Form 3502:

- Equipment checklist completed.
- Equipment outages or returns to service. (Enter a capital E [Equipment] to the left of the time entry.)
- Initials of the person and the facility notified of events (for example, CS/WX, JD/OPS, or RH/ARAC).
- Shift change completion (for example, “SHFT CHG CMPLT, ABOVE NOTED /WR”).
- Supervisor on duty; for example CB/SL or CH/CIC.
- TC OT, annotate amount of time off (for example TIME ADJUSTED, CLOCK 35 SECONDS FAST [each shift]).
- Facility or log opening and closing. (Around-the-clock facilities shall show when the log was opened and closed.
- Part-time facilities shall show when the facility and logs were opened and closed.
- Opening and closing broadcast (for example "CLOSING BCST CMPLT").
- Weather conditions at the airfield, heliport, or landing area; for example, WX-IFR/VFR.
- Tower visibility if different than what is reported by the official weather report.
- Any unusual occurrence shall also be annotated on the form.

A-32. Supervisory responsibility will be indicated in the remarks section using assigned operating initials (for example, “CB ASSUMES DUTIES AS SL,” “CB DEPARTED FAC, WS ASSUMES DUTIES AS CIC”).

A-33. The facility chief will review each DA Form 3502 for accuracy and sign in the authentication block. This form will be filed daily and retained for a minimum of twelve calendar months. (For example, June 2019 may not be destroyed until June 2020.) Electronic methods may be used to maintain the DA Form 3502. If electronic means are not used, the form will be printed at the end of each day. See figure A-3, page A-15, for a sample DA Form 3502.
## Figure A-3. Sample DA Form 3502

**Example Table:**

<table>
<thead>
<tr>
<th>Time (UTC)</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1100</td>
<td>TWR AND LOGS OPN. OPNG BCST CMPLT. EQUIP CHECKLIST CMPLT. CM ASSUMES DUTIES AS SL. TC OT. FLD VFR. RWY 07 IN USE. DLR, RCRDG, LOUD AND CLEAR. AC/ARAC, SY/HUB, DRGCA NOTIFIED. /TW</td>
</tr>
<tr>
<td>E1211</td>
<td>VHF RDO OTS. LD MAINT. AC/ARAC, SY/HUB, DRGCA NOTIFIED. /TW</td>
</tr>
<tr>
<td>E1216</td>
<td>VHF RDO RTS. AUDIO LVL. CK CMPLT BY LD MAINT. AC/ARAC, SY/HUB, DRGCA NOTIFIED. /TW</td>
</tr>
<tr>
<td>1553</td>
<td>WIND SHFT. RWY 32 IN USE. AC/ARAC, DRGCA. /TW</td>
</tr>
<tr>
<td>1700</td>
<td>CM DEPARTED FAC. TW ASMD DUTIES AS CIC. ABOVE NOTED. /TW</td>
</tr>
<tr>
<td>E1702</td>
<td>G5 OTS. BS MAINT. WD/ARAC NOTIFIED. /TW</td>
</tr>
<tr>
<td>1800</td>
<td>CM ASMD DUTIES AS SL. ABOVE NOTED. /TW</td>
</tr>
<tr>
<td>E1852</td>
<td>G5 RTS. BS MAINT. WD/ARAC NOTIFIED. /TW</td>
</tr>
<tr>
<td>1900</td>
<td>SHIFT CHG CMPLT. ABOVE NOTED. EQUIP CHECKLIST CMPLT. CM ASSUMES DUTIES AS SL. TC OT. FLD VFR. RWY 32 IN USE. DLR, RCRDG, LOUD AND CLEAR. AC/ARAC, SY/HUB, DRGCA NOTIFIED. /BC</td>
</tr>
<tr>
<td>1907</td>
<td>FLD IFR. WD/ARAC, JY/GCA NOTIFIED. /BC</td>
</tr>
<tr>
<td>E2016</td>
<td>ATIS OTS. BS MAINT. NTFY. BN ARAC, SY/HUB, JY/GCA NOTIFIED. /BC</td>
</tr>
<tr>
<td>2200</td>
<td>TWR AND LOGS CLSD. CLOSE OF ST BMNT. INN ARAC, AD/HUB, JY/GCA NOTIFIED. /BC</td>
</tr>
</tbody>
</table>

I CERTIFY that the entries above have been reviewed.

<table>
<thead>
<tr>
<th>Name (Last, first, M)</th>
<th>Rank</th>
<th>Chief’s Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doe, Jane M.</td>
<td>SSG</td>
<td>Digitally signed by: Doe, Jane M.</td>
</tr>
</tbody>
</table>
AIR TRAFFIC CONTROL POSITION LOG

A-34. DA Form 3503 (figure A-4, page A-17) provides a record of personnel assigned to each operating position within an ATC facility. Controllers assigned responsibility for an operating position initiate the DA Form 3503 at the beginning of each calendar day. (This would be 0000 local time or when facility operations begin for the day). Entries will be in UTC. Pages will be added as necessary to complete the day. The logs will be closed at midnight local for facilities operating on a 24-hour basis. Facilities operating less than 24 hours a day will open the log when the facility opens for daily operations and close the logs when the facility officially ends operations for the day.

A-35. Controllers requiring direct supervision will use their operating initials followed by a slant mark (/) and the facility-rated controller's initials. Those under direct supervision include—

- Controller trainees who are not positioned qualified.
- Controllers being evaluated for facility rating by ATCS/CTO examiners.
- Rated controllers who are not current.
- Rated controllers who are receiving remedial training.
- Rated controllers receiving biennial skills evaluations.
- Rated controllers receiving a no-notice evaluation.
- Rated controllers receiving annual skills evaluation.

Note. Personnel providing direct supervision are directly responsible for the operation of the position being supervised. They must be plugged in and continuously observe and monitor the controller being supervised. Personnel providing direct one-on-one supervision may not be signed on at additional positions.

A-36. DA Form 3503 is filed daily with DA Form 3502 and retained for a minimum of twelve calendar months (for example all the logs in June 2019 may not be destroyed until June 2020.) Electronic methods used to track position of assignment may be used. If electronic means is not used, the form will be printed at the end of each day. Voice recordings of position assignments will not be used to satisfy facility record keeping requirements.

Note. When correcting the DA Form 3503 a line will be drawn through all blocks, with the operating initials of the controller making the correction at the end of the line.
### Flight Progress Strips

A-37. When FAA Form 7230-7.2, *Flight Progress Strip: Terminal Continuous Without Center Perforation*, or FAA Form 7230-8, *Flight Progress Strip: Terminal-Cut*, are utilized in lieu of DA Form 3501, they shall be prepared according to guidance contained in FAAO 7110.65 and retained for a minimum of six calendar months. For example, June 2019 logs may be destroyed 1 January 2020.
A-38. FAA Form 7230-21, *Flight Progress Strip: FSS*, will be used to record all flight-following movements.

A-39. TWR facilities may use VFR logs or notepads instead of flight strips to record all VFR operations, if there is an advantage in doing so. All other facilities will record IFR and VFR operations on appropriate flight strips.

A-40. FAA Form 7230-21 (NSN 7530 01 449 4244) and the flight strip holder (NSN 6605-00-485-6649, Type 5) may be ordered through the normal supply channels.

A-41. Standard ATC information symbols will be used, and completed strips maintained in the same manner as other ATC flight strips.

A-42. Instructions for completing FAA Form 7230-21 (figure A-5) are as follows:

- Block 1. Aircraft identification.
- Block 2. Aircraft and equipment suffix used for special equipment such as the DME transponder.
- Block 3. Altitude.
- Block 4. Beacon code.
- Block 5. Route or area of flight.
- Block 6. Radio or radar contact time in UTC.
- Block 7. Destination (the training area or intended landing area).
- Block 8. ETA at the destination in UTC.
- Block 9. Coordination effected (Control Reporting Center, AIC, range control, and ADIZs).
- Block 10. Type mission (for example, NOE, NVD, and administrative).
- Block 11. Time of last radio contact and handoff information.
- Block 12. Time at reporting points.
- Blocks 13 & 14. Reporting points, amendments, clearances, that correspond to block 12. Blocks 13 and 14 can be changed or modified by the facility as necessary.

![Figure A-5. Sample completed progress strip](image)
Appendix B
Facility Training Manuals

This appendix provides outlines for installation and tactical FTMs. These outlines cover indoctrination, equipment, responsibilities, and emergency equipment and notification procedures. They also cover local area information, reference material, coordination procedures, and facility administration and management. Facilities will use only the portions of these outlines pertaining to that specific facility.

B-1. Table B-1 is a detailed outline for an installation FTM.

Table B-1. Installation facility training manuals outline

<table>
<thead>
<tr>
<th>Chapter 1 Installation Facility Indoctrination</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1. Mission.</td>
</tr>
</tbody>
</table>
b. Duty schedule.  
c. Pre-duty requirements.  
d. Duty requirements.  
  (1) Briefings.  
  (2) Facility cleanup.  
e. Training program.  
  (1) Description.  
  (2) Type (classroom, hands-on, and so forth).  
  (3) Written, oral, and practical exams.  
  (4) Training time limitation (AR 95-2).  
  (5) Facility training schedule.  
  (1) Contents.  
  (2) Location.  
g. Facility reference file.  
  (1) Contents.  
  (2) Location. |
b. Base operations.  
c. Dispatch.  
d. Other ATC facilities.  
e. Range control.  
f. Fire station.  
g. Alert sections. |
| 1-4. Training Records. | a. Use.  
b. Location.  
c. Access. |
| 1-5. Electronic Warfare Training. | a. Threat briefing.  
b. Equipment vulnerabilities.  
c. Electronic countermeasures.  
d. Recognition of electronic countermeasures and appropriate electronic counter countermeasures.  
e. Meaconing, intrusion, jamming, and interference reporting. |
| 1-6. Facility Forms. | |
Table B-1. Installation facility training manuals outline

<table>
<thead>
<tr>
<th>Chapter 2 Air Traffic Control Facility Equipment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1) Type.</td>
</tr>
<tr>
<td></td>
<td>(2) Location.</td>
</tr>
<tr>
<td>b. Receivers.</td>
<td>(1) Type.</td>
</tr>
<tr>
<td></td>
<td>(2) Location.</td>
</tr>
<tr>
<td>c. Frequencies.</td>
<td>d. Channelization.</td>
</tr>
<tr>
<td>d. Channelization.</td>
<td>e. Standby communications equipment.</td>
</tr>
<tr>
<td>e. Standby communications equipment.</td>
<td>f. Secure voice operation.</td>
</tr>
<tr>
<td>f. Secure voice operation.</td>
<td>g. Maintenance and outage.</td>
</tr>
<tr>
<td>g. Maintenance and outage.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1) Type.</td>
</tr>
<tr>
<td></td>
<td>(2) Location.</td>
</tr>
<tr>
<td></td>
<td>(3) Use.</td>
</tr>
<tr>
<td></td>
<td>(4) Circuit identification.</td>
</tr>
<tr>
<td></td>
<td>(5) Maintenance and outage.</td>
</tr>
<tr>
<td>b. Telephones.</td>
<td></td>
</tr>
<tr>
<td>c. Intercommunications units.</td>
<td>(1) Type.</td>
</tr>
<tr>
<td></td>
<td>(2) Location.</td>
</tr>
<tr>
<td></td>
<td>(3) Use.</td>
</tr>
<tr>
<td></td>
<td>(4) Maintenance and outage.</td>
</tr>
<tr>
<td>d. Weather dissemination.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1) Type.</td>
</tr>
<tr>
<td></td>
<td>(2) Location.</td>
</tr>
<tr>
<td></td>
<td>(3) Use.</td>
</tr>
<tr>
<td></td>
<td>(4) Maintenance.</td>
</tr>
<tr>
<td>e. Automation equipment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1) Type.</td>
</tr>
<tr>
<td></td>
<td>(2) Location.</td>
</tr>
<tr>
<td></td>
<td>(3) Use.</td>
</tr>
<tr>
<td></td>
<td>(4) Maintenance and outage.</td>
</tr>
<tr>
<td>2-3. Recording Equipment.</td>
<td>a. Type.</td>
</tr>
<tr>
<td></td>
<td>b. Location.</td>
</tr>
<tr>
<td></td>
<td>c. Positions/frequencies recorded.</td>
</tr>
<tr>
<td></td>
<td>d. Recorder procedures.</td>
</tr>
<tr>
<td></td>
<td>e. Playback.</td>
</tr>
<tr>
<td></td>
<td>f. Maintenance and outage.</td>
</tr>
<tr>
<td></td>
<td>b. Automation procedures.</td>
</tr>
<tr>
<td>2-5. Airfield/Heliport Lighting.</td>
<td>a. Control panel.</td>
</tr>
<tr>
<td></td>
<td>b. Runway and helipad.</td>
</tr>
<tr>
<td></td>
<td>c. Threshold.</td>
</tr>
<tr>
<td></td>
<td>d. Boundary.</td>
</tr>
<tr>
<td></td>
<td>e. Approach.</td>
</tr>
<tr>
<td></td>
<td>f. Taxiway.</td>
</tr>
<tr>
<td></td>
<td>g. Rotating beacon.</td>
</tr>
<tr>
<td></td>
<td>h. Obstruction.</td>
</tr>
<tr>
<td></td>
<td>i. Wind direction indicator.</td>
</tr>
<tr>
<td></td>
<td>j. Spotlights.</td>
</tr>
<tr>
<td></td>
<td>k. Maintenance and outage.</td>
</tr>
<tr>
<td></td>
<td>l. Other.</td>
</tr>
</tbody>
</table>
### Table B-1. Installation facility training manuals outline

b. Operational checks.  
c. Maintenance checks. |
|---------------------------|-------------------------------------------------------------------|
b. Operational procedures.  
c. Message content and sequence.  
d. Maintenance and outage. |
b. Traffic counters.  
c. Binoculars.  
d. Wind instruments.  
e. Altimeters.  
f. Clocks.  
(1) Time check.  
(2) Setting procedure.  
g. First aid kits.  
h. Fire extinguisher.  
i. Fuse boxes.  
j. Heating and cooling equipment.  
k. Emergency power.  
l. Emergency egress system.  
m. Night Vision Devices.  
n. Maintenance and outages. |
| 2-10. NOTAM. | a. Responsible agency.  
b. Equipment outages requiring a NOTAM.  
c. Controller action. |

### Chapter 3 Responsibilities

| 3-1. Operating Positions. | a. Control Tower.  
(1) Flight Data.  
(2) Ground Control.  
(3) Local Control.  
(4) Clearance delivery.  
(5) Approach control.  
(6) Combined positions.  
(7) Others.  
b. Ground Control Approach.  
(1) Arrival.  
(2) Flight Data.  
(3) Final.  
c. Army Radar Approach Control.  
(1) Flight Data.  
(2) Arrival.  
(3) Departure.  
(4) Precision Approach Radar.  
(5) Other.  
d. Airspace Information Center.  
(1) Flight Data.  
(2) Flight-following control.  
(3) Other. |
|---------------------------|-------------------------------------------------------------------|
b. Shift Leader.  
c. Training supervisor/specialist.  
d. Facility chief. |
# Table B-1. Installation facility training manuals outline

<table>
<thead>
<tr>
<th>Chapter 4 Local Airport/Heliport Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4-1. Airport/Heliport.</td>
<td>a. Responsible agency.</td>
</tr>
<tr>
<td></td>
<td>b. Layout.</td>
</tr>
<tr>
<td></td>
<td>c. Runways.</td>
</tr>
<tr>
<td></td>
<td>(1) Width.</td>
</tr>
<tr>
<td></td>
<td>(2) Length.</td>
</tr>
<tr>
<td></td>
<td>(3) Weight restrictions.</td>
</tr>
<tr>
<td></td>
<td>(4) Preferential runway.</td>
</tr>
<tr>
<td></td>
<td>d. Other landing areas.</td>
</tr>
<tr>
<td></td>
<td>(1) Taxiways.</td>
</tr>
<tr>
<td></td>
<td>(2) Width.</td>
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<td>(3) Weight restrictions.</td>
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<td>e. Ramp area.</td>
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<td>h. Crash standby points.</td>
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<td>i. Intersection take-off diagram</td>
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4-2. Tower Visibility Restrictions.


4-4. Radio Blind Spots.

4-5. Compass Rose.

4-6. Very High Frequency Omnidirectional Range Receiver Checkpoints.

4-7. Airport/Heliport Obstructions.  
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4-10. Special VFR.  
   a. Minimums.  
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4-11. Local Airport/Heliport Rules and Regulations.  
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   b. Terminal procedures.  
      (1) Medical Evacuation (MEDEVAC).  
      (2) Local night vision systems procedures.  
      (3) Very important persons.  
      (4) Hot refueling.  
      (5) Aircraft types and call signs.  
   c. Hazardous cargo.  
   d. Emergency equipment location.  
   e. Restricted aircraft movement.  
   f. Airfield security.  
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### Chapter 6 Local Area Information

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<td>6-4. Special Use Airspace.</td>
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<td>(2) Altitudes.</td>
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<td>(4) Controlling agency.</td>
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<tr>
<td>b. Use.</td>
<td></td>
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<tr>
<td></td>
<td>(2) Procedure.</td>
</tr>
<tr>
<td></td>
<td>(2) Procedure.</td>
</tr>
<tr>
<td>g. Airstrips.</td>
<td>(2) Use.</td>
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6-5. VFR Training Areas.

6-6. Adjacent Airports/Heliports.

6-7. Parachute Areas.

### Chapter 7 Letters, Memoranda, Reports, and Forms

7-1. Letters of Agreement.
- a. Agencies.
- b. General content.

7-2. Facility Memoranda.

7-3. Operational Hazard Reports.
- a. Preparation.
- b. Submission.

### Chapter 8 Flight Plans, Strips, and Markings

8-1. Flight Plans.
- a. Types.
- b. Requirements.
- c. Local filing.
- d. In-flight filing.
- e. Action upon receipt.
  - (1) IFR.
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- f. Procedures.
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8-2. Flight Strips.
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### Chapter 9 Instrument Flight Rules and Coordination Procedures

- a. Initial approach altitudes.
- b. Holding patterns.
  - (1) Location.
  - (2) Description.
- c. Procedure turns.
- d. Final approach altitude and heading.
- e. Release points.
- f. Missed-approach procedures.
- g. Weather minimums.

- a. Routes.
  - (1) DPs.
  - (2) Transitions.
- b. Altitudes between fixes and intersections.
### Table B-1. Installation facility training manuals outline

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</table>
| **9-3. Coordination Procedures.** | (1) Normal assigned frequencies.  
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|   | a. Interposition.  
b. Local facilities.  
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d. Adjacent airports. |
| **9-4. Inadvertent Instrument Meteorological Conditions.** | a. Frequency management.  
b. Coordination.  
c. Abbreviated (short) approaches.  
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b. Coordination.  
c. Abbreviated (short) approaches.  
d. Sequencing and separation standards. |

### Chapter 10 Secondary Radar

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<th></th>
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</thead>
</table>
| **10-1. Components.** | a. Interrogator.  
b. Transponder.  
c. Decoder. |
| **10-2. Type of Equipment (AN/TPX-41 AND ATCBI-3).** | a. Factors.  
(1) Line-of-sight.  
(2) Aircraft altitude.  
(3) Reflections.  
(4) Resolution.  
(5) Ring-around.  
(6) Slant-range.  
b. Interface.  
c. Others. |
b. Adjacent facilities.  
c. Emergency. |
b. Adjacent facilities.  
c. Emergency. |

### Chapter 11 Radar

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| **11-1. Equipment.** | a. Type.  
b. Display.  
c. Alignment and adjustment.  
d. Characteristics.  
e. Keyboard.  
f. Computer.  
g. Radar coverage.  
h. Simulators. |
b. Minimum safe altitude.  
c. Minimum Restricted Altitude.  
| **11-3. Use.** | Note. This paragraph was left blank intentionally. The ATC chief/PSG/facility chief may use it to expound on, or refer to, radar use, services, separation, sequencing, and phraseology contained in FAAO 7110.65. All Army radar controllers are required to know and use the applicable radar procedures in the handbook. For purposes of testing, training, proficiency, and record keeping, FAAO 7110.65, chapter five will be considered an extension of this manual. |

### Chapter 12 Facility Administration

<p>| | |</p>
<table>
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<th></th>
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</table>
| **12-1. Daily Administration.** | a. Compiling traffic count.  
b. Recording traffic count.  
c. Maintaining facility forms and records.  
d. Filing facility forms and records. |
b. Storage area.  
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Table B-1. Installation facility training manuals outline

b. Numbers and types of aircraft.  
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Chapter 13 Air Traffic Control Management Training

13-1. Administration.
13-2. Facility Reports.
13-3. Operational Hazard Reports.
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13-6. Training Records and Training Programs.
13-7. Administration of Facility Qualification and Rating Program.


ABBREVIATED OUTLINE FOR A TACTICAL FACILITY TRAINING MANUAL

B-2. Tactical ATC facilities will follow the abbreviated training manual outlined in table B-2. These manuals will be fully developed when deployments are 120 days or longer so a controller can be trained and receive a rating at an airfield or heliport. Tactical ATC Facilities must prepare an FTM for their home station.

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</tr>
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<td>1-1. Mission.</td>
</tr>
<tr>
<td>1-2. Facilities.</td>
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<tr>
<td>1-3. General Description of Associated or Supported Units.</td>
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<td>1-4. Training Records.</td>
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<td>1-5. Electronic Warfare Training.</td>
</tr>
<tr>
<td>1-6. DA Form 3501, DA Form 3502, and DA Form 3503.</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Chapter 2 Air Traffic Control Facility Equipment</th>
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<td>2-1. Radio Communications Equipment.</td>
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<tr>
<td>2-2. Land-Line Communications Equipment.</td>
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<td>2-5. Airfield/Heliport Lighting.</td>
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<tr>
<td>2-6. Miscellaneous Equipment.</td>
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<td>2-7. Equipment Maintenance.</td>
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</table>

<table>
<thead>
<tr>
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<td>3-1. Control Tower (Mobile Tower System [MOTS]).</td>
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<td>3-2. Tactical Aviation Control Team (Tactical Terminal Control System [TTCS]).</td>
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<td>3-3. GCA Team (Air Traffic Navigation, Integration, and Coordination System [ATNAVICs]).</td>
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<tr>
<td>3-4. Airspace Information Centers (Tactical Airspace Integration System).</td>
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<td>4-3. Radio Restrictions.</td>
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<td>4-4. Airfield/Heliport Obstructions.</td>
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<td>4-5. Traffic Patterns.</td>
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<td>4-7. Local Rules and Regulations.</td>
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<td>5-2. Emergency Notification Procedures.</td>
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<th>Chapter 6 Local Area Information</th>
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<td>6-2. Adjacent Class B/C/D/E Airspace.</td>
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<td>8-2. Flight Strips and Markings.</td>
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<td>10-3. Code Assignment.</td>
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<td>11-3. Use.</td>
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<td>13-2. Facility Reports.</td>
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<td>13-3. Operational Hazard Reports.</td>
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<td>13-4. Accidents and Incidents.</td>
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<tr>
<td>13-6. Training Records and Training Programs.</td>
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<tr>
<td>13-7. Administration of Facility Qualification and Rating Program.</td>
</tr>
</tbody>
</table>
Appendix C

Theodolite Operations

The accuracy of Theodolite measurements depends on the proper care, setup, and adjustment of the instrument. See the TM or manufacturer’s publication for the proper setup, leveling, and sighting of the Theodolite. Personnel must be careful when removing the Theodolite from its carrying case and mounting it onto the tripod. This appendix explains the correct procedures for positioning and orienting the Theodolite. It also includes flight inspection commissioning factors and preventive maintenance measures.

POSITIONING

C-1. The Theodolite will be positioned according to the criteria for the PAR. Figure C-1 depicts how to position the Theodolite, while figures C-2 to C-6, pages C-2 to C-4, depict how it is repositioned. If an aircraft equipped with the automatic flight inspection system is not used for the commissioning inspection, a Theodolite will be used to determine glide angles including lower safety limits. For a PAR facility performance evaluation, the Theodolite is placed as close to the runway as possible. However, it must be placed forward of the runway point of intercept (RPI) to minimize or eliminate the elevation difference between the RPI (touchdown) and the Theodolite location; this difference includes the height of the Theodolite eyepiece. The touchdown reflector is usually abeam the RPI but not always. Aircraft operations will dictate how close to the runway the Theodolite can be located.

Note. The elevation and azimuth scales are graduated in whole degrees, whereas the elevation and azimuth tangent screws are accurate in degrees and tenths of a degree.

Figure C-1. Theodolite positioned
Figure C-2. Desired angle set and a Theodolite repositioned

Figure C-3. Theodolite barrel elevated
Figure C-4. Adjustment for height differences

Figure C-5. Theodolite positioned for zero elevation difference

The runway centerline is 20" higher (20" - 42") than the survey's base and is, therefore, a minus value (-20'). Place a mark on the survey's pole at 104" (104" - 20")

Initially position the theodolite forward of the RPI using the distance calculated for the desired or commissioned angle. In this case, an angle of 3° is used.
Theodolite positioned for known elevation difference

**ORIENTATION**

C-2. The Theodolite is oriented on the actual glide slope angle (for example, 2.5 degrees) on the vertical scale when set up on the observation point and viewing the approach end of the runway. The following steps will orient the Theodolite properly:

- **Step 1.** With a lensatic compass, select a prominent object; record its bearing from the observation point.
- **Step 2.** Place the Theodolite at the observation point.
- **Step 3.** Level the Theodolite.
- **Step 4.** Set the azimuth scale and azimuth scale tangent screw to read the exact azimuth of the established reference point.
- **Step 5.** Loosen the lower clamp and sight the reference point as close to the vertical crosshair as possible.
- **Step 6.** Retighten the lower clamp, and then adjust the slow-motion screw until the vertical crosshair is exactly on the reference point. Make the final adjustment by turning the slow-motion screw clockwise.

**Note.** Because of the prism arrangement in some Theodolite telescopes, objects viewed through the proper plane may be presented upside down. When the aircraft appears in the bottom half of the scope, it is high. When it appears in the top half, it is low.

**FLIGHT CHECK COMMISSIONING FACTORS**

C-3. Communications with GCA is essential during a PAR flight inspection. Only on-glide-path calls will be recorded. Calls inside of decision height (DH) will not be recorded. Radar will be capable of detecting an aircraft a minimum of 7.5 nautical miles from touchdown and within the azimuth and elevation sector portrayed on the radarscope.

C-4. The flight inspection is a team effort; therefore, good communications is vital. Aircrew members will continuously advise the Theodolite operator of their intentions. The Theodolite operator should ask questions if there is doubt and request assistance if problems arise.
Note. To evaluate the equipment, it is important to record at least 15 to 20 on-glide-path calls.

C-5. At a minimum two approaches for each runway and one lower safe check are required for commissioning. The lower safe limit is normally 0.5 degree less than the glide path angle (GPA); however, obstacle clearance is all that is required.

C-6. To evaluate bends on the approach, range will be given at least once per mile.

C-7. The Theodolite is placed as close to the runway as possible and forward of the RPI. The locations of the marked reference points are calculated using the formulas shown below. Figure C-7 depicts how to determine zero elevation differences.

![Figure C-7. Zero elevation difference calculated](image)

**FORMULAS**

C-8. The following formulas are used when determining Theodolite positioning:
- Opposite = Adjacent x Tangent; or \( O = A \times T \).
- Adjacent = Opposite/Tangent; or \( A = O/T \).
- Tangent = Opposite/Adjacent; or \( T = O/A \).
Example

5-foot/3-degree tangent \((0.0524078)\) = 95.4 feet. Therefore, the Theodolite would be placed 95.4 feet forward of RPI.

**Problems and Solutions**

C-9. With a 1,200-foot ceiling and a 3-degree angle, what is the distance? The solution is 1,200/3 degrees \((0.0524078)\) \(= \frac{22897.365}{6076.1} = 3.76\) nautical miles. This is not acceptable. With a 2,000-foot ceiling and a 3-degree angle, what is the distance? The solution is 2,000/3 degrees \((0.0524078)\) \(= \frac{38162.275}{6076.1} = 6.28\) nautical miles. This is acceptable.

**Radar Course Alignment Check**

C-10. At some locations, it may be necessary to use a Theodolite to supplement the pilot's observations, especially when the runway is extremely wide or poorly defined by surrounding terrain. The following steps are performed:

- **Step 1.** Place the Theodolite on the centerline of the runway at a location suitable for operation.
  
  *Note.* Use optical or mechanical plummetts to ensure the Theodolite is precisely placed at the center of the runway.

- **Step 2.** Level the Theodolite.

- **Step 3.** Place a stadia rod on the centerline of the runway at the threshold.
  
  *Note.* Previously surveyed runways should have a nail/spike installed in the pavement indicating the centerline of the runway at the threshold.

- **Step 4.** Set and calibrate the Theodolite horizontal display for zero degrees with the vertical crosshair centered on the stadia rod and verify horizontal calibration.

- **Step 5.** Have the final controller furnish information as to the aircraft's position relative to the runway centerline.

- **Step 6.** The Theodolite operator will continuously track the aircraft and inform the pilot of the aircraft position relative to the runway centerline.
Appendix D

Approach Procedures

This appendix contains criteria and guidance on TERPS and preparing minimum vectoring altitude charts (MVACs).

TERMINAL APPROACH PROCEDURES

D-1. TERPS is the process of developing approach procedures based on location, obstacles, airspace, air traffic flow, procedures desired, and aircraft performance according to FAAO 8200.1, FAAO 8260.15, FAAO 8260.3, and this publication.

D-2. Under National Air Transportation 127 Agreement, the FAA provides worldwide TERPS service for the US Army. This service will include original procedure development and amendments as necessary (to include procedures for contingency/exercise operations), facility and procedure flight inspection service, site evaluation of proposed NAVAIDs (reimbursable service), and procedure processing. Request for procedure development will be forwarded to the FAA through USAASA, United States Army Aeronautical Services Detachment-Europe (USAASD-E).

REQUIRED INFORMATION FOR PROCEDURE DEVELOPMENT

D-3. In order to construct instrument approach procedures, accurate coordinates are required. As a minimum, the plans or drawings must contain survey data required for design of instrument approach procedures all distances (in feet) and elevations (in mean sea level) in hundredths of a foot; all latitude and longitude are in hundredths of a second and assumed to be in World Geodetic system–84/North American Datum–83 unless otherwise noted. Do not round values. Data requirements should be compiled in memorandum format to accompany the TERPS packet airfield/heliport. Data requirements are listed in FAAO 8260.15.

Contingency/Exercise Operations

D-4. Commander, USAASA/USAASD-E must provide appendix one data requirements to the flight inspection central operations team, AJW-335. Emergency, contingency, and exercise procedures are intended for loose-leaf publication and documented on FAA Form 8260-7, Special Instrument Approach Procedures. USAASA headquarters is responsible for coordinating charting requirements.

D-5. Any photographs of the airport (surface, air, or satellite), maps (scale 1:24,000 through 1:500,000), airport layout plans, or civil engineering master tabs must also be provided if available.

D-6. If required information is not provided, the National Flight Procedures Office will determine the best procedure design based on the airfield/heliport data requirements for instrument approach procedures.

TERMINAL INSTRUMENT PROCEDURES PACKETS

D-7. A TERPS packet will be completed each time a NAVAID is installed for operational use. Instructions for completing each form in the packet are provided for clarification and guidance.

D-8. When the radar system is deployed (VFR training/military use only), the packet sent to the DAR/USAASD-E/ATSCOM will include the following documents:

- MVAC drawn on two copies of the appropriate maps or charts.
- DA Form 7870, Minimum Altitude/Minimum Vectoring Altitude Obstruction Documentation.
- DA Form 3501-1.

D-9. DA Form 3501-1 is used to capture and record data about the radar installation for TERPS development.
D-10. DA Form 3501-1 (figure D-1, page D-7) contains all the information required by USAASA/USAASD-E to have a terminal instrument approach procedure developed. When ASR approaches are requested, the information contained in the PAR data sheet for the specific radar will be used to develop the procedure.

D-11. Table D-1 includes the instructions for completing DA Form 3501-1.

Table D-1. Filling out DA Form 3501-1

<table>
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<tr>
<th>STEP</th>
<th>COLLECTION ITEM</th>
</tr>
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<tr>
<td>1</td>
<td>Identify the mission location</td>
</tr>
<tr>
<td></td>
<td>• Airfield Name</td>
</tr>
<tr>
<td></td>
<td>• ICAO/FAA Airport Code</td>
</tr>
<tr>
<td></td>
<td>• Nearest City</td>
</tr>
<tr>
<td>2</td>
<td>Identify the Critical Design Airframe for the location</td>
</tr>
<tr>
<td>3</td>
<td>Locate publicly available imagery for mission location</td>
</tr>
<tr>
<td></td>
<td>• Google Maps</td>
</tr>
<tr>
<td></td>
<td>• Bing Maps</td>
</tr>
<tr>
<td></td>
<td>• Google Earth</td>
</tr>
<tr>
<td></td>
<td>• National Geospatial-Intelligence Agency (NGA)</td>
</tr>
<tr>
<td>4</td>
<td>Download survey data for location</td>
</tr>
<tr>
<td></td>
<td>• Federal Aviation Administration Airfields Database (FAAAD)</td>
</tr>
<tr>
<td></td>
<td>• Terminal Aeronautical Global Navigation Satellite System Geodetic Survey Program (TAGGS) (NGA)</td>
</tr>
<tr>
<td></td>
<td>• Automated Air Facilities Intelligence File (AAFIF) (NGA)</td>
</tr>
<tr>
<td></td>
<td>• Airfield Layout Plans (ALP) (local)</td>
</tr>
<tr>
<td></td>
<td>• DOD Flight Information Publications (FLIPs) (NGA)</td>
</tr>
<tr>
<td></td>
<td>• Commercial Products</td>
</tr>
<tr>
<td>5</td>
<td>Determine if pre-existing instrument procedures exist for the landing surface. Subject to mission requirements, tactical procedures should be designed coincident with pre-existing procedures regarding touchdown point and glidepath.</td>
</tr>
<tr>
<td>6</td>
<td>Locate the following information in any available survey data:</td>
</tr>
<tr>
<td></td>
<td>• Landing Threshold Point (LTP) Location (Latitude/Longitude)</td>
</tr>
<tr>
<td></td>
<td>• Landing Threshold Point (LTP) Elevation</td>
</tr>
<tr>
<td></td>
<td>• Displaced Threshold Location (Latitude/Longitude)</td>
</tr>
<tr>
<td></td>
<td>• Displaced Threshold Elevation</td>
</tr>
<tr>
<td></td>
<td>• PAPI/VASI Location (Latitude/Longitude)</td>
</tr>
<tr>
<td></td>
<td>• PAPI/VASI Distance</td>
</tr>
<tr>
<td></td>
<td>• PAPI/VASI Elevation</td>
</tr>
<tr>
<td></td>
<td>• Record PAPI/VASI data in your notes for future reference</td>
</tr>
<tr>
<td></td>
<td>• Departure End of Runway (DER) Location (Latitude/Longitude)</td>
</tr>
<tr>
<td></td>
<td>• Departure End of Runway (DER) Elevation</td>
</tr>
<tr>
<td></td>
<td>• Glidepath Angle (GPA)</td>
</tr>
<tr>
<td></td>
<td>• Threshold Crossing Height</td>
</tr>
</tbody>
</table>
Table D-1. Filling out DA Form 3501-1

<table>
<thead>
<tr>
<th>STEP</th>
<th>COLLECTION ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DA Form 3501-1, Block 7n</td>
</tr>
<tr>
<td></td>
<td>Height Above Touchdown</td>
</tr>
<tr>
<td></td>
<td>Use to calculate Decision Altitude (DA) for DA Form 3501-1, Block 7o</td>
</tr>
<tr>
<td></td>
<td>Magnetic Variation: Amount, Direction, and Date</td>
</tr>
<tr>
<td></td>
<td>DA Form 3501-1, Block 7l</td>
</tr>
<tr>
<td></td>
<td>Controlling Obstruction (Type, Location, Elevation)</td>
</tr>
<tr>
<td></td>
<td>Record obstruction data in your notes for future reference.</td>
</tr>
<tr>
<td>7</td>
<td>Determine planned equipment locations based on map/imagery reconnaissance and survey data.</td>
</tr>
<tr>
<td></td>
<td>Record planned locations in your notes for future use.</td>
</tr>
<tr>
<td></td>
<td>Download geodetic products from local Map Server or NGA for mission location based on either planned radar location or center of landing area.</td>
</tr>
<tr>
<td>5 NM radius</td>
<td>Imagery</td>
</tr>
<tr>
<td></td>
<td>CIB01</td>
</tr>
<tr>
<td></td>
<td>Maps and Charts</td>
</tr>
<tr>
<td></td>
<td>CADRG TLM 25k</td>
</tr>
<tr>
<td></td>
<td>USGS 20k, 24k,and 25k</td>
</tr>
<tr>
<td></td>
<td>Terrain</td>
</tr>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Obstacles</td>
</tr>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td>10 NM radius</td>
<td>Imagery</td>
</tr>
<tr>
<td></td>
<td>CIB05</td>
</tr>
<tr>
<td></td>
<td>Maps and Charts</td>
</tr>
<tr>
<td></td>
<td>CADRG TLM 50k</td>
</tr>
<tr>
<td></td>
<td>Terrain</td>
</tr>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Obstacles</td>
</tr>
<tr>
<td></td>
<td>DVOF - no filters</td>
</tr>
<tr>
<td></td>
<td>TFADS-O Format which can be used in Excel</td>
</tr>
<tr>
<td></td>
<td>ESRI Shapefile which can be displayed in TAIS airspace workstation</td>
</tr>
<tr>
<td>30 NM radius</td>
<td>Imagery</td>
</tr>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Maps and Charts</td>
</tr>
<tr>
<td></td>
<td>CADRG TPC 500k</td>
</tr>
<tr>
<td></td>
<td>CADRG IFR Enroute Area (Sectional) 500k</td>
</tr>
<tr>
<td></td>
<td>CADRG JOG-A 250k</td>
</tr>
<tr>
<td></td>
<td>CADRG TLM 100k</td>
</tr>
<tr>
<td></td>
<td>Terrain</td>
</tr>
<tr>
<td></td>
<td>DTED0, DTED1, DTED2</td>
</tr>
<tr>
<td></td>
<td>Obstacles</td>
</tr>
<tr>
<td></td>
<td>DVOF (filter for &gt; 150 feet AGL)</td>
</tr>
<tr>
<td></td>
<td>TFADS-O Format which can be used in Excel</td>
</tr>
<tr>
<td></td>
<td>ESRI Shapefile which can be displayed in TAIS airspace workstation</td>
</tr>
<tr>
<td>9</td>
<td>Upload geodetic products to TAIS airspace workstation internal map server.</td>
</tr>
</tbody>
</table>
Table D-1. Filling out DA Form 3501-1

<table>
<thead>
<tr>
<th>STEP</th>
<th>COLLECTION ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>10</strong></td>
<td>Plot planned equipment locations on TAIS airspace workstation and evaluate for feasibility using zoomed in display.</td>
</tr>
<tr>
<td><strong>11</strong></td>
<td>Conduct Preventative Maintenance Checks and Services (PMCS) on theodolite, tripod, and stadia rod. Ensure fresh batteries are available.</td>
</tr>
<tr>
<td><strong>12</strong></td>
<td>Conduct Preventative Maintenance Checks and Services (PMCS) on AN/PSN-13 Defense Advanced GPS Receiver (DAGR). Ensure fresh batteries are available.</td>
</tr>
<tr>
<td><strong>13</strong></td>
<td>Examine the landing threshold location on centerline (LTP) for a survey pin or marker.</td>
</tr>
<tr>
<td><strong>14</strong></td>
<td>Emplace the theodolite at LTP and level.</td>
</tr>
</tbody>
</table>
| **15** | If survey data on LTP is NOT available:  
  - Turn the DAGR on  
  - Navigate the menus to disable Auto-OFF and Auto-STANDBY  
  - Place DAGR in **Averaging** mode  
  - Emplace the DAGR at LTP on centerline  
  - After a **minimum of one (1) hour** retrieve the DAGR and record the location and elevation for LTP  
  Enter results on DA Form 3501-1 Block 6b(1) for latitude, Block 6c(1) for longitude, and Block 6d(1) for elevation. |
| **16** | Set theodolite to horizontal (90° or 270°) and align along runway centerline. |
| **17** | Place stadia rod alongside theodolite and mark the theodolite center on stadia rod or record stadia rod measurement.  
  *Record device height in your notes for future use.* |
| **18** | Calculate estimated Runway Point of Intercept (RPI) distance using the following formula:  
  **Threshold crossing height / (GPA)tan** = **Estimated RPI distance**  
  *Record distance in your notes for future use.* |
| **19a** | Determine estimated RPI elevation change from LTP. (Use either of the methods below.)  
  19a. Place stadia rod at estimated RPI location from Step 18. Sight on the stadia rod and measure the elevation difference from LTP recorded in Step 17.  
  *Record the elevation difference in your notes for future use.* |
| **19b** | Place stadia rod at estimated RPI location from Step 18. Sight on the stadia rod and adjust the horizontal crosshair to the mark recorded in Step 17.  
  *Record the vertical angle change (VAC) in your notes for future use.*  
  **NOTE:** Identify if angle was upward or downward. |
| **20a** | Calculate true RPI distance. (Use either of the methods below.)  
  20a. Express the elevation difference from Step 19a in decimal feet (convert whole feet to inches and multiply total inches by 0.083) and divide it by the estimated RPI distance from Step d. This number is a tangent. Use the Invert Tangent or TAN⁻¹ function on the Scientific Calculator to convert this number to an angle and record to three (3) decimal places in your notes for future reference. |
| **20b** | Calculate the true RPI distance given a known threshold crossing height, a planned GPA, and a vertical angle change (VAC) from Steps 19b or 20a using the following formula:  
  **Threshold crossing height / ((GPA)tan ± (VAC)tan)** = **True RPI distance.**  
  Enter result on DA Form 3501-1, Block 7a.  
  **NOTE:** If angle was upward add the value, if angle was downward subtract the value. |
| **21** | Determine actual RPI elevation change from LTP. (Use either of the methods below.) |
### Table D-1. Filling out DA Form 3501-1

<table>
<thead>
<tr>
<th>STEP</th>
<th>COLLECTION ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>21a.</td>
<td>Measure the distance from LTP to the true RPI location on centerline from Step 20b. Measure distance using theodolite and stadia rod, measuring tape, measuring wheel, or right triangle math calculation.</td>
</tr>
<tr>
<td>21b.</td>
<td>Place stadia rod at actual RPI location from Step 21a. Sight on the stadia rod and measure the elevation difference from LTP recorded in Step 17. <em>Record the elevation difference in your notes for future use.</em></td>
</tr>
<tr>
<td>21c.</td>
<td>Place stadia rod at actual RPI location from Step 21a. Sight on the stadia rod and adjust the horizontal crosshair to the mark recorded in Step 17. <em>Record the vertical angle change (VAC) in your notes for future use.</em> <strong>NOTE:</strong> Identify if angle was upward or downward.</td>
</tr>
<tr>
<td>22</td>
<td>Measure the distance from LTP to the location on centerline abeam the radar from Step 10. Location must be at least 1720 feet from RPI for helicopters and at least 2220 feet for fixed-wing operations. Measure distance using theodolite and stadia rod, measuring tape, measuring wheel, or right triangle math calculation. <em>Enter results on DA Form 3501-1, Block 7b.</em></td>
</tr>
<tr>
<td>23a.</td>
<td>Calculate radar abeam (Point 3) location elevation change from LTP. (Use either of the methods below.)</td>
</tr>
<tr>
<td>23b.</td>
<td>Place stadia rod at the radar abeam location (Point3) from Step 22. Sight on the stadia rod and measure the elevation difference from LTP recorded in Step 17. <em>Record the elevation difference in your notes for future use.</em></td>
</tr>
<tr>
<td>23c.</td>
<td>Place stadia rod at the radar abeam location (Point3) from Step 22. Sight on the stadia rod and adjust the horizontal crosshair to the mark recorded in Step 17. <em>Record the vertical angle change (VAC) in your notes for future use.</em> <strong>NOTE:</strong> Identify if angle was upward or downward.</td>
</tr>
<tr>
<td>24</td>
<td>If survey data on DER (Point 4) is NOT available: Measure the distance from LTP to the DER location on centerline. Measure distance using theodolite and stadia rod, measuring tape, measuring wheel, or right triangle math calculation. <em>Enter results on DA Form 3501-1, Block 7c.</em></td>
</tr>
<tr>
<td>25a.</td>
<td>Calculate the DER (Point 4) location elevation change from LTP. (Use either of the methods below.)</td>
</tr>
<tr>
<td>25b.</td>
<td>Place stadia rod at the DER (Point 4) location. Sight on the stadia rod and measure the elevation difference from LTP recorded in Step 17. <em>Record the elevation difference in your notes for future use.</em></td>
</tr>
<tr>
<td>26</td>
<td>Measure the straight-line distance from LTP to the radar physical location (Point 5) abeam the runway. Measure distance using theodolite and stadia rod, measuring tape, measuring wheel, or right triangle math calculation. <em>Enter results in your notes for future use.</em></td>
</tr>
<tr>
<td>27a.</td>
<td>Calculate the radar physical location (Point 5) elevation change from LTP. (Use either of the methods below.)</td>
</tr>
<tr>
<td>27b.</td>
<td>Place stadia rod at the radar physical location (Point 5). Sight on the stadia rod and measure the elevation difference from LTP recorded in Step 17. <em>Record the elevation difference in your notes for future use.</em></td>
</tr>
</tbody>
</table>

**NOTE:** Identify if angle was upward or downward.
### Table D-1. Filling out DA Form 3501-1

<table>
<thead>
<tr>
<th>STEP</th>
<th>COLLECTION ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>Measure the straight-line distance from LTP to the reflector right-of-runway (Point 6a) location. Measure distance using theodolite and stadia rod, measuring tape, measuring wheel, or right triangle math calculation.&lt;br&gt;<strong>Enter results in your notes for future use.</strong></td>
</tr>
<tr>
<td>29</td>
<td>Calculate the reflector right-of-runway (Point 6a) location elevation change from LTP. (Use either of the methods below.)&lt;br&gt;29a. Place stadia rod at the reflector right-of-runway (Point 6a) location. Sight on the stadia rod and measure the elevation difference from LTP recorded in Step 17.&lt;br&gt;<strong>Record the elevation difference in your notes for future use.</strong>&lt;br&gt;29b. Place stadia rod at the reflector right-of-runway (Point 6a) location. Sight on the stadia rod and adjust the horizontal crosshair to the mark recorded in Step 17.&lt;br&gt;<strong>Record the vertical angle change (VAC) in your notes for future use.</strong>&lt;br&gt;Note: Identify if angle was upward or downward.</td>
</tr>
<tr>
<td>30</td>
<td>Measure the straight-line distance from LTP to the reflector left-of-runway (Point 6b) location. Measure distance using theodolite and stadia rod, measuring tape, measuring wheel, or right triangle math calculation.&lt;br&gt;<strong>Enter results in your notes for future use.</strong></td>
</tr>
<tr>
<td>31</td>
<td>Calculate the reflector left-of-runway (Point 6b) location elevation change from LTP. (Use either of the methods below.)&lt;br&gt;31a. Place stadia rod at the reflector left-of-runway (Point 6b) location. Sight on the stadia rod and measure the elevation difference from LTP recorded in Step 17.&lt;br&gt;<strong>Record the elevation difference in your notes for future use.</strong>&lt;br&gt;31b. Place stadia rod at the reflector left-of-runway (Point 6b) location. Sight on the stadia rod and adjust the horizontal crosshair to the mark recorded in Step 17.&lt;br&gt;<strong>Record the vertical angle change (VAC) in your notes for future use.</strong>&lt;br&gt;Note: Identify if angle was upward or downward.</td>
</tr>
<tr>
<td>32</td>
<td>Determine the True Bearing down runway centerline. (Use either of the methods below).&lt;br&gt;<strong>DO NOT USE THE TRUE BEARING SHOWN IN THE SURVEY DATA - IT HAS BEEN ROUNDED TO THE NEAREST WHOLE DEGREE AND WILL RESULT IN CALCULATION INACCURACY BEYOND ACCEPTABLE TOLERANCES.</strong>&lt;br&gt;32a. Calculate the True Bearing down runway centerline using the <strong>Inverse Worksheet</strong> of the FAA Ellipsoidal Calculator.&lt;br&gt;• Enter the coordinates of LTP from DA Form 3501-1 Blocks 6b(1) and 6c(1) as the <strong>Origin.</strong>&lt;br&gt;• Enter the coordinates of the Departure End of Runway (DER) from DA Form 3501-1 Blocks 6b(4) and 6c(4) as the <strong>Target.</strong>&lt;br&gt;• Hit F9 to process&lt;br&gt;<strong>Record Forward True Bearing and Reverse True Bearing in your notes for future use.</strong>&lt;br&gt;32b. Calculate the True Bearing down runway centerline using the magnetic variation.&lt;br&gt;• Determine the magnetic heading down runway centerline using a magnetic compass. Be as accurate as possible.&lt;br&gt;• Use the published magnetic variation for the location to convert the magnetic heading to a True Bearing.&lt;br&gt;<strong>West Variation</strong>&lt;br&gt;True = Mag - Declination&lt;br&gt;<strong>East Variation</strong>&lt;br&gt;True = Mag + Declination&lt;br&gt;<strong>Record True Bearing in your notes for future use.</strong></td>
</tr>
</tbody>
</table>
RADAR SAFETY LIMITS

D-12. These safety limits serve as a minimum standard for controllers to determine if an aircraft can execute a safe approach using the smallest aircraft target. They are established in relation to the azimuth and elevation cursors. The limits begin at the point the aircraft reaches the FAF or intercepts the glide path and ends at the missed approach point (MAP)/DH.

D-13. The following standards will be used when applying the elevation failure procedures of FAAO 7110.65, if authorized, on the digital radars such as the ATNAVICS AN/TPN-31 and fixed base precision...
approach radar AN/FPN-67 (figure D-2). Once the aircraft begins descent and progresses along the final approach path, ensure target returns meet the following radar safety limits:

- Five to three miles, the target does not exceed one inch left or right of azimuth cursor.
- Three miles to one mile, the target does not exceed one-half inch left or right of azimuth cursor.
- One mile to the MAP, the target must be touching the azimuth cursor.

![Figure D-2. Radar safety limits (ASR with digital video)](image)

D-14. If the pilot deviates from the final approach course beyond the limits in the previous paragraph, or the pilot does not respond to trend information, apply the procedures outlined in FAAO 7110.65.

D-15. All radar facility controllers will receive this training, and it will be annotated in the individual training records as “radar safety limits.”

**FLIGHT INSPECTION APPROACHES**

D-16. When conducting radar approaches for flight inspection, the pilot will perform a minimum of two approaches to check facility alignment.

D-17. One approach will be conducted under normal conditions requiring numerous glide-path information calls. This approach establishes the facility angle and course alignment. The flight inspection pilot commonly refers to the elevation cursor as the “A” cursor (figure D-3).

![Figure D-3. PAR “A” cursor (on glide path)](image)

*Note.* The vertical line directly under ‘DH’ indicates where the glidepath and decision height intersect. The horizontal line indicates actual decision height.

D-18. The second approach will be to check the glide-path angle lower safe limits (figure D-4, page D-9). The flight inspection pilot will request that the controller use the “B” cursor for the approach.
D-19. Descent notification will be issued 10 to 30 seconds prior to the top of the aircraft target touching or an eighth of the target width intercepting the elevation cursor. The aircraft’s FAF or descent point will have to be adjusted to compensate for this type of approach.

![Figure D-4. “B” Cursor lower safe limits (on path)](image)

D-20. Standard course and trend information is issued throughout the approach to maintain the aircraft on glide path.

D-21. Flight inspection approaches are normally conducted by the most experienced controller in a facility. This does not preclude familiarizing all controllers with flight inspection procedures, terminology, and maneuvers. These procedures are further outlined in FAAO 8200.1 and will be incorporated in the FTP.

**Note.** According to FAAO 8200.1, surveillance approaches will be evaluated using surveillance type radarscopes. Conducting an ASR approach on a PAR display is not acceptable for flight inspection purposes. This does not preclude controllers from exercising the elevation failure procedures of FAAO 7110.65

D-22. Flight inspection of deployed radar facilities is determined by the mission requirements. See appendix E for installation and NAVAID certification requirements/guidance.

**MINIMUM VECTORING ALTITUDE CHARTS**

D-23. To provide controllers with minimum IFR altitudes for radar vectoring, facilities will prepare MVA charts for all ASR systems. Table D-2, page D-10, provides step-by-step instructions for the development of an MVA chart.
Table D-2. Instructions for the development of an MVAC

<table>
<thead>
<tr>
<th>Step</th>
<th>Requirement</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Identify Minimum Vectoring Altitude (MVA) coverage area and buffer.</td>
<td>FAAO 7210.3, Para 3-8-2, b. FAAO 8260.3, Para 11-3-2, a (1). TC 3-04.15, App D.</td>
</tr>
<tr>
<td>2</td>
<td>Gather charts/maps for coverage area in hard copy or digital form.</td>
<td>TC 3-04.15, App D.</td>
</tr>
<tr>
<td>3</td>
<td>Identify required accuracy of charts/maps.</td>
<td>FAAO 8260.19, Para 2-11-3, b, (4) and (5).</td>
</tr>
<tr>
<td>4</td>
<td>Compare accuracy correction of charts/maps to required accuracy standard for Minimum Vectors (MVAC).</td>
<td>FAAO 8260.19, Appendix C.</td>
</tr>
<tr>
<td>5</td>
<td>Plot Navigational Aid location.</td>
<td>TC 3-25.26, Local SOP.</td>
</tr>
<tr>
<td>6</td>
<td>Divide MVA Area for scanning and label.</td>
<td>TC 3-04.15, App D.</td>
</tr>
<tr>
<td>7</td>
<td>Sub-divide scanning areas by range and label.</td>
<td>TC 3-04.15, App D.</td>
</tr>
<tr>
<td>8</td>
<td>Plot adverse assumption obstacle exempt area based on landing surfaces.</td>
<td>FAAO 8260.19, Para 2-11-5, a.</td>
</tr>
<tr>
<td>9</td>
<td>Scan for controlling obstructions and document on working copy of DA Form 7870.</td>
<td>TC 3-04.15 Para 2-11-5, a.</td>
</tr>
<tr>
<td>10</td>
<td>Consult digital obstacle databases or applicable chart updating manual (CHUM/electronic chart updating manual) for a source with a higher level of obstacle data accuracy.</td>
<td>FAAO 8260.19, Para 2-11-4.</td>
</tr>
<tr>
<td>11</td>
<td>Determine distance and bearing to each obstruction and document on working copy of DA Form 7870.</td>
<td>FAAO 7210.3, 11-3-2, b, (1). TC 3-04.15, Appendix D.</td>
</tr>
<tr>
<td>12</td>
<td>Enclose obstructions in applicable buffer (3 NM/5 NM).</td>
<td>FAAO 8260.3, 11-3-2, b, (1). TC 3-04.15, Appendix D.</td>
</tr>
<tr>
<td>13</td>
<td>Identify areas of controlled airspace and document on working copy of DA Form 7870.</td>
<td>FAAO 7210.3, 11-3-2, b, (1). TC 3-04.15, Appendix D.</td>
</tr>
<tr>
<td>15</td>
<td>Identify a separate obstruction clearance altitude when MVA must be established in uncontrolled airspace.</td>
<td>FAAO 7210.3, Para 3-8-2, i FAAO 8260.3, Para 11-3-5.</td>
</tr>
<tr>
<td>16</td>
<td>Apply reductions for precipitous terrain if necessary.</td>
<td>FAAO 7210.3, Para 3-8-2, e</td>
</tr>
<tr>
<td>17</td>
<td>Group or isolate obstructions into sectors to obtain an operational advantage and update the working copy of DA Form 7870.</td>
<td>FAAO 8260.3, Para 11-3-2.</td>
</tr>
<tr>
<td>18</td>
<td>Label final MVA sectors and update working copy of DA Form 7870.</td>
<td>FAAO 8260.3, Para 11-3-2.</td>
</tr>
<tr>
<td>19</td>
<td>Prepare 2 copies of the final MVA chart and final DA Form 7870 and forward for approval.</td>
<td>FAAO 8260.3, Para 11-3-2.</td>
</tr>
</tbody>
</table>

Legend: NM Nautical Miles MVA minimum vectoring altitude MVAC minimum vectoring altitude chart

D-24. The MVA chart will be drawn on two current 1:100,000 joint operational graphic or FAA sectional aeronautical charts. The most current obstruction data for updating an aeronautical chart prior to use is available at the NGA site:
The chart will be centered on the location of the radar antenna site and segmented into areas as required by the different MVAs. Configuration of the areas and features shown on the chart will vary with local terrain and operational considerations. Figure D-5 is a depiction of an MVA chart.

**Figure D-5. Sample MVAC**

D-25. The MVA on MVACs must be compatible with vectoring altitudes established for associated radar instrument approach procedures. The MVA in each area will be shown, and the controlling obstructions will be documented.

D-26. Installation air traffic manager must prepare MVAC in coordination with the National Flight Procedures Office using the Sector Design and Analysis Tool and FAA Order 8260.3, United States Standard for Terminal Instrument Procedures. USAASA oversees the Sector Design and Analysis Tool program and provides user support for Army aviation.

D-27. At a minimum, the airspace considered for providing obstacle clearance information on MVACs must accommodate the facility’s delegated area of control as well as adjacent airspace where control responsibility is assumed because of early handoff or track initiation.

D-28. The name of the facility will be affixed to both charts, and the edition and date will be printed on the obstruction documentation of each MVAC. MVACs will be forwarded to the appropriate DAR for approval. MVA documentation will be submitted using DA Form 7870 as follows:

- DA Form 7870 signed by the facility chief.
- Two copies of the current DA Form 7870 and maps.
- Do not use large pens to mark on the charts or taped/glued labels; this can cover up obstacles.
IDENTIFYING OBSTACLES

D-29. Obstacles (manmade or natural) within 28 nautical miles (at a minimum) of an ATNAVICS will be identified and annotated on DA Form 7870. This example is completed using non-mountainous terrain required obstacle clearance of 1000 feet in lieu of mountainous terrain (required obstacle clearance 2000). The example also shows how the horizon may be broken down into four equal areas of ninety degrees each and ranges in increments of 5 to 10 miles. This makes it easier to scan for obstacles. When obstacles are identified, they will be used to determine the MVA, minimum safe altitude, lowest usable glidepath, and any required adjustments to the MAP. US Army ATS facilities will forward two copies of new or revised MVAC and DA Form 7870 to the appropriate DAR annually for review. For US Army installations outside US territory and not under an FAA regional office, MVAC will be forwarded annually to Commander, USAASA or USAAED-E respective of the area of responsibility.

D-30. Instructions for completing DA Form 7870 (figure D-6) are as follows:

- **Column 1.** Designate an area identifier.
- **Column 2.** Determine type of obstruction/controlling obstacle (manmade or natural).
- **Column 3.** Provide the heading/distance from center point.
- **Column 4.** Provide the elevation of the obstruction/controlling obstacle in mean sea level.
- **Column 5.** Determine the required obstacle clearance (non-mountainous or mountainous).
- **Column 6.** Reduction for mountainous terrain.
- **Column 7.** Additional increase for airspace.
- **Column 8.** Sum of additional applicable obstruction/controlling obstacle clearances.
- **Column 9.** Amount required to round up to the next highest 100.
- **Column 10.** Final established MVA/MIA.
- **Column 11.** Additional applicable obstruction/controlling obstacle clearance explanations.

<table>
<thead>
<tr>
<th>AREA</th>
<th>Location</th>
<th>Type of Obstruction</th>
<th>Height/Distance from Center Point</th>
<th>Elevation</th>
<th>Obstruction Clearance</th>
<th>MVA/MIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Airfield</td>
<td>0000.0 NM</td>
<td>734</td>
<td>1000</td>
<td>0</td>
<td>450</td>
</tr>
<tr>
<td>B</td>
<td>Arterra</td>
<td>3210.80 NM</td>
<td>1915</td>
<td>1000</td>
<td>0</td>
<td>450</td>
</tr>
<tr>
<td>C</td>
<td>Terminus</td>
<td>9511.40 NM</td>
<td>2044</td>
<td>1000</td>
<td>0</td>
<td>450</td>
</tr>
<tr>
<td>D</td>
<td>Airspace</td>
<td>15510.10 NM</td>
<td>1205</td>
<td>0</td>
<td>300</td>
<td>2550</td>
</tr>
<tr>
<td>E</td>
<td>Smokey</td>
<td>24418.30 NM</td>
<td>1065</td>
<td>1000</td>
<td>0</td>
<td>450</td>
</tr>
<tr>
<td>F</td>
<td>P-17</td>
<td>288215.90 NM</td>
<td>1290</td>
<td>1000</td>
<td>0</td>
<td>450</td>
</tr>
</tbody>
</table>

**Figure D-6. Sample DA Form 7870**
Appendix E

Installation ATC Facility and Navigational Aids Equipment

This appendix provides guidance for the standardization of Army Installation ATC and NAVAID facilities. It also outlines the framework of ATC engineering standards and facility equipment requirements. The standard design, siting, security, and force protection requirements are documented in the appropriate Unified Facilities Criteria.

GENERAL

E-1. This section provides the standards for planning new facilities or improving existing ones and applies to all active ACOMs, ARNG, and US Army Reserve units having requirements for installation ATC/NAVAID facilities. AR 95-2 sets guidance for establishing, relocating, altering, and terminating these facilities. UFC 3-260-01 provides guidance to assure AAF/AHP facilities are properly planned and constructed. FAAO 8260 series sets terminal instrument approach procedures to be used with all NAVAID planning. UFC 3-535-01 provides guidance and criteria for planning and building Army aviation lighting facilities.

ENGINEERING STANDARDS

E-2. Integrity of ATC/NAVAID facility layout and equipment configuration of AAF or AHP is maintained through a configuration management program. Product Manager Assured Airspace Access Systems (PM A3S) is the configuration manager for ATC systems.

E-3. The human engineering factors of MIL-STD 1472G, including voice levels and environmental control of air, will be applied to the facilities described in this chapter. Additional criteria are also included in this chapter pertaining to environmental factors/controls to be applied to ATC/NAVAID facilities.

E-4. All ATC/NAVAID facilities on or near an Army installation are required to implement the physical security provisions of Army regulatory guidance and applicable UFCs to prevent or reduce loss or damage from theft, espionage, sabotage, and other criminal or disruptive activities.

SUSTAINING ATC AND NAVAID FACILITY CAPABILITIES

E-5. ATC/NAVAID facilities must be upgraded and modernized per AR 95-2. An ATC/NAVAID requirements survey is conducted to analyze and evaluate operational requirements. This survey will determine if additional capabilities are required, or if alteration of existing ATC/NAVAID facilities meets the operational requirements. The engineering aspect of the site survey will determine configuration and location of facilities.

ATC FACILITY DESIGN STANDARDS

E-6. UFC 4-133-01, Air Traffic Control and Air Operations Facilities, provides requirements for evaluating, planning, programming, and designing ATC Facilities. This UFC contains guidance for planners, engineers, and architects on the planning, engineering, and design of ATCTs, and radar facilities. This UFC is intended as a source of basic architectural and engineering information for all individuals involved in the planning, design, or evaluation of ATC Facilities.

E-7. Continued use of existing structures or equipment is determined on a case-by-case basis with consideration for the following:

- Age and condition of the existing equipment and materials.
- Suitability, maintainability, supportability, and reliability (safety) for continued use.
Appendix E

- Cost of replacement and funding.
- Operational requirements for the AAF or AHP in connection with functional capabilities of the equipment.

E-8. Backup power systems in support of ATC facilities are a critical requirement for assuring continuous, reliable operation of these facilities. To prevent serious ATC facility outages (because of primary power interruptions), all ATC facilities that are published for IFR use will require backup power. The maximum time required for the generator to assume full load when primary power fails is 15 seconds. Those facilities not published for IFR use may qualify if located in a geographical area considered sensitive to national security or having a history of poor climatic conditions and/or excessive power outages. The decision to provide backup power for facilities not published for IFR use will be made on a case-by-case basis and determined during the ATSCOM requirements survey.

E-9. Proposed new facilities that violate UFC 3-260-01 require a waiver according to AR 95-2 before the project is approved.

FACILITY EQUIPMENT AND CONFIGURATION

E-10. This section discusses the design standards and equipment requirements for ATC facilities.

Radar Approach Control

E-11. Provides air traffic approach, arrival control, and departure control services in accordance with established Army and FAA guidance. ARAC facilities may offer approach control service in support of multiple airfields and originate IFR and special VFR clearances.

Design Standard

E-12. The Approach Control contains equipment used for controlling air traffic and is staffed by air traffic controllers, administrative and maintenance support personnel. The scope of radar services provided will vary according to equipment installed and the delegated airspace. The scope and complexity of the services are the significant design drivers. The facility contains an IFR control room that includes the radar display consoles and communications control equipment. An adjacent terminal equipment room houses all automation central (or terminal) equipment, maintenance positions and audio/video tape recorders. The ARAC facility is the primary monitor location for NAVAID facilities. As a minimum, the following should be included when considering design of an ARAC facility:

- Operations (IFR) room.
- Equipment room.
- Ready room.
- Maintenance shop and supply room.
- Offices for chief of maintenance and chief of operations.
- Training room.
- Locker room.
- Receiver transmitter location.

Equipment Requirements

E-13. Table E-1, page E-3, lists standard equipment and systems required in an Approach Control Facility. Quantities may vary based upon numbers of sectors, positions, and the overall control area serviced by the ARAC. A requirements survey will validate the required quantities.
### Table E-1. Major equipment (ARAC)

<table>
<thead>
<tr>
<th>System</th>
<th>Capability</th>
<th>Required Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position Console</td>
<td>Controller Consoles with integrated voice communications equipment with touch entry devices capable of controlling receiver/transmitter and landline communications. It must also provide landline communications with direct access lines to other Air Traffic Control (ATC), airfield operations and support facilities. This must include the capability of headset use and trainer/trainee override capabilities.</td>
<td>1 Per Position</td>
</tr>
<tr>
<td>Note: When collocated with other ATC Faciliites, the voice communications equipment may be provided by a single switch.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voice Communications Switching System</td>
<td>Used to manage the communications of an ATC facility. The system is modular in design in order to provide the needed flexibility. System is interoperable with National and International voice communication systems.</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>Note: When collocated with other ATC Faciliites, the voice communications equipment may be provided by a single switch.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication Entry Devices</td>
<td>Integrates communications equipment in order to provide direct access to receiver/transmitters and landline communications. Provides direct access to servicing instrument flight rule, other ATC, airfield operations and support facilities.</td>
<td>1 Per Position</td>
</tr>
<tr>
<td>Headset/Microphone Handset</td>
<td>Enhances communications, reduces operational noise levels and allows controllers to adjust audio levels to an accepting level without impeding operations.</td>
<td>1 Per Controller</td>
</tr>
<tr>
<td>Very High Frequency Receiver/Transmitter</td>
<td>Used to communicate with aircraft during ground and air communications.</td>
<td>Per AR 95-2, Frequency Allocation</td>
</tr>
<tr>
<td>Ultra High Frequency Receiver/Transmitter</td>
<td>Used to communicate with aircraft during ground and air communications.</td>
<td>Per AR 95-2, Frequency Allocation</td>
</tr>
<tr>
<td>Frequency Modulation Receiver/Transmitter</td>
<td>Used to communicate with aircraft during ground and air communications.</td>
<td>Mission Specific</td>
</tr>
<tr>
<td>Back-up Transceiver</td>
<td>Portable/Tunable emergency backup transceiver with battery backup supply. Quantities identified as per this regulation</td>
<td>Per AR 95-2, Frequency Allocation</td>
</tr>
<tr>
<td>Telephone Line</td>
<td>Used for “official” ATC functions, recorded.</td>
<td>1 per sector</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 for admin office</td>
</tr>
<tr>
<td>Telephone Line</td>
<td>Used for “unofficial” ATC functions.</td>
<td>1 for IFR Room</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 for admin office</td>
</tr>
<tr>
<td>Navigational Aid Remote Status Monitor</td>
<td>Used to monitor the status of navigational aids.</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>Equipment Type</td>
<td>Description</td>
<td>Quantity</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Position Overhead Lights</td>
<td>Individual controlled position lighting to be used by controllers to preserve night vision</td>
<td>1 Per Position</td>
</tr>
<tr>
<td>Digital Voice Recorder</td>
<td>A multi-channel, multi-line digital voice recorder system, for continuous unattended recording of each position used for receiver/transmitting ATC clearances, control instructions and coordination between internal/external control positions. Capabilities must include remote alarm, synchronized recording of time, playback without recording interruption, reproduction in a digital format, and automatic archiving. The recorder must be capable of split (stereo) tracks to record voice on one track and a time source on the other channel. Recorder must be capable of providing recordings to an external media. [NOTE: When collocated with other ATC Facilities, the voice communications equipment may be supported by a single recorder]</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>Automatic Terminal Information Service</td>
<td>A system microcomputer to automate the delivery of airport and terminal area operational and meteorological information to aircraft flight crews.</td>
<td>1 Per Facility if a Flight Following Position is validated</td>
</tr>
<tr>
<td>Airport Surveillance Radar</td>
<td>Used at airports to detect and display the presence and position of aircraft in the terminal area, the airspace around airports. It is the main air traffic control system for the airspace around airports.</td>
<td>As required</td>
</tr>
<tr>
<td>ATC Automation System</td>
<td>The display receives and processes weather, reports, and other information from terminals and other sensors, providing aircraft positioning and weather data.</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>Airfield Automation System</td>
<td>Integrated Dissemination and Display System significantly reduces controller workload, increases situational awareness, and enhances Army airfield operational efficiency.</td>
<td>1 system per position</td>
</tr>
<tr>
<td>Flight Progress Strip Holders</td>
<td>Used to hold flight progress strips and arrange in flight strip bay.</td>
<td>Minimum 50 Per Facility</td>
</tr>
<tr>
<td>Stand Alone Global Positioning System Timed Clock</td>
<td>24-hour clock with seconds display, i.e. digital light emitting diode</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>ATC Maintenance Test &amp; Diagnostic Equipment</td>
<td>Used to test and troubleshoot ATC systems.</td>
<td>Equipment Specific</td>
</tr>
</tbody>
</table>

**ARMY AIR TRAFFIC CONTROL TOWERS**

E-14. The ATCT houses equipment and personnel for control of aircraft approaching and departing the terminal area and aircraft and vehicular movement on the runways, taxiways, and all other movement areas. It is an elevated structure having an unobstructed line-of-sight to the airfield approach areas, runways, taxiways, aircraft parking areas, and all other operational areas over which aircraft movements must be
controlled. ATC TWRs are terminal facilities that use air and ground communications, visual signaling, and other devices, and give ATC service to airborne and surface aircraft operating on or near an AAF or AHP.

**SITING CRITERIA**

E-15. The ATCT must be sited in accordance with UFC 3-260-01, *Airfield and Heliport Planning and Design*. The ATCT must be physically oriented relative to the primary runways so as to obtain the best unobstructed view of the air installation complex and aircraft primary movement areas (i.e. runways and taxiways), their associated VFR and IFR approach paths, traffic pattern entry points, traffic patterns, ground routes, parking areas, and VFR and IFR departure paths. Consider planned runway and taxiway construction when siting the ATCT, as well as expected vegetation growth that cannot be cultivated due to various factors.

E-16. The ATCT itself should not be an obstruction or affect IFR operations. Care must be taken not to site the ATCT close to and/or under a flight path. When computing the height of the ATCT, the height of the antennas being installed (after construction is completed) must be included. The design of the antenna supports, installed as part of the construction, will affect the final antenna height. When computing the total ATCT height, the height of the tallest antenna must be added to the height of the top of the parapet wall or railing. The height of the lightning protection installed during construction must also be included in the total ATCT height. The total height of the ATCT, including antennas and lightning protection, must be shown on the design elevation drawings.

E-17. Other considerations for final siting include utility availability (water, sewer, storm, power, and gas), site access, security, and relationship to existing ATC Facilities and existing ATCTs. If an area directly below the ATCT requires controlling, consideration for relocating the ATCT to allow proper visual access to that area should be of prime importance.

**DESIGN STANDARDS**

E-18. UFC 4-133-01 contains the design specific requirements for all engineering facets, mechanical, structural, electrical, fire protection, force protection, and architectural.

E-19. ATCTs are four position facilities. Towers are comprised of a supervisory, local, ground, and flight data position.

E-20. Towers may also have a Flight Following position located within the tower or a GCA and AIC facility located within the TWR structure.

E-21. ATCTs may have a functional or a non-functional tower shaft supporting the Control Cab. The key programmatic differences between a functional and a non-functional tower shaft include the following:

- Functional Tower Shaft: Typically pertains to low and intermediate activity ATCTs where operations support functions can be located on most floors in the tower shaft. This eliminates the need for an administrative support building.
- Non-functional Tower Shaft: Typically pertains to major activity ATCTs where operations support functions cannot fill up all the floors in the tower shaft. The shaft includes only unoccupied spaces, such as egress stairs, elevators and service shafts, to reduce the floor footprint for cost efficiency. Two to three floors immediately below the cab can be used for administrative support and equipment spaces (these floors can have a wider footprint).

E-22. In either case, the preferred layout for the tower shaft is rectangular or square to maximize the efficiency of the layout of the internal spaces.

**EQUIPMENT REQUIREMENTS**

E-23. Table E-2, page E-6, lists standard equipment and systems required in an ATCT Facility. Quantities may vary based upon numbers of sectors, positions, and the overall control area serviced by the tower. A requirements survey will validate the required quantities.
### Table E-2. Major equipment (tower)

<table>
<thead>
<tr>
<th>System</th>
<th>Capability</th>
<th>Required Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position Console</td>
<td>Controller Consoles with integrated voice communications equipment with touch entry devices capable of controlling receiver/transmitter and landline communications. It must also provide landline communications with direct access lines to servicing instrument flight rules, other Air Traffic Control (ATC), airfield operations and other support facilities. This must include the capability of headset use and trainer/trainee override capabilities. NOTE: When collocated with other ATC Facilities, the voice communications equipment may be provided by a single switch.</td>
<td>1 per Position</td>
</tr>
<tr>
<td>Voice Communications Switching System</td>
<td>Used to manage the communications of an ATC facility. The system is modular in design in order to provide the needed flexibility. System is interoperable with National and International voice communication systems. NOTE: When collocated with other ATC Facilities, the voice communications equipment may be provided by a single switch.</td>
<td>1 per Facility</td>
</tr>
<tr>
<td>Communication Entry Devices</td>
<td>Integrates communications equipment in order to provide direct access to receiver/transmitters and landline communications. Provides direct access to servicing instrument flight rule, other ATC, airfield operations and support facilities.</td>
<td>1 per operating position</td>
</tr>
<tr>
<td>Headset/Microphone Handset</td>
<td>Enhances communications, reduces operational noise levels and allows controllers to adjust audio levels to an accepting level without impeding operations.</td>
<td>1 per controller</td>
</tr>
<tr>
<td>Very High Frequency Receiver/Transmitter</td>
<td>Used to communicate with aircraft during ground and air communications.</td>
<td>AR 95-2, Frequency Allocation</td>
</tr>
<tr>
<td>Ultra High Frequency Receiver/Transmitter</td>
<td>Used to communicate with aircraft during ground and air communications.</td>
<td>AR 95-2, Frequency Allocation</td>
</tr>
<tr>
<td>Frequency Modulation Receiver/Transmitter</td>
<td>Used to communicate with aircraft during ground and air communications.</td>
<td>Mission Specific</td>
</tr>
<tr>
<td>Back-up Transceiver</td>
<td>Portable/Tunable emergency backup transceiver with battery backup supply. Quantities identified as per this regulation</td>
<td>AR 95-2, Frequency Allocation</td>
</tr>
<tr>
<td>Telephone Line</td>
<td>Used for “official” ATC functions, recorded.</td>
<td>1 for Tower cab 1 per admin office</td>
</tr>
<tr>
<td>Telephone Line</td>
<td>Used for “unofficial” ATC functions.</td>
<td>1 for Tower cab 1 per admin office</td>
</tr>
<tr>
<td>Lighting Control System</td>
<td>Used to control all airfield and heliport lighting systems.</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>Navigational Aid (NAVAID) Remote Status Monitor</td>
<td>Used to monitor the status of navigational aids.</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>System</td>
<td>Capability</td>
<td>Required Quantities</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Window Shades</td>
<td>Window shades are required at all ATC towers for use in bright sunlight and snow conditions. Shades must meet Federal Aviation Administration specification E-2470b/12520-5 Suggested type is manufactured by Plastic-View ATC, 4584 Runway, Suite B, Simi Valley, California 93063. The number of shades will be determined locally and will be on all sides to reduce rear and side reflections.</td>
<td>1 Per Window</td>
</tr>
<tr>
<td>Overhead Position Lights</td>
<td>Individual controlled position lighting to be used by controllers to preserve night vision</td>
<td>1 Per Position</td>
</tr>
<tr>
<td>Crash Alarm Systems</td>
<td>Primary and Secondary Crash Alarm System Per AR 420-1. Garrisons will provide a primary and secondary telephone crash alarm with two way capabilities between the tower, base operations, fire, police and medical authorities only. Only those emergency agencies directly involved in first response to an airfield incident will be on the primary crash alarm system. Garrisons will also provide a direct telephone two-way circuit with the air traffic control tower, aircraft maintenance control, ambulance, law enforcement, or any other agency designated by the fire chief</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>Digital Voice Recorder</td>
<td>A multi-channel, multi-line digital voice recorder system, for continuous unattended recording of each position used for receiver/transmitting ATC clearances, control instructions and coordination between internal/external control positions. Capabilities must include remote alarm, synchronized recording of time, playback without recording interruption, reproduction in a digital format, and automatic archiving. The recorder must be capable of split (stereo) tracks to record voice on one track and a time source on the other channel. Recorder must be capable of providing recordings to an external media. NOTE: When collocated with other ATC Facilities, the voice communications equipment may be supported by a single recorder.</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>Automatic Terminal Information Service (ATIS)</td>
<td>A system microcomputer to automate the delivery of airport and terminal area operational and meteorological information to aircraft flight crews.</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>Certified Tower Radar Displays</td>
<td>Local controllers may use certified tower radar displays for the following purposes: 1. To determine an aircraft's identification, exact location, or spatial relationship to other aircraft. 2. To provide aircraft with radar traffic advisories. 3. To provide a direction or suggested headings to VFR aircraft as a method for radar identification or as an advisory aid to navigation. 4. To provide information and instructions to aircraft operating within the surface area for which the tower has responsibility.</td>
<td>1 Per Local and Ground Control Positions.</td>
</tr>
</tbody>
</table>
Table E-2. Major equipment (tower)

<table>
<thead>
<tr>
<th>System</th>
<th>Capability</th>
<th>Required Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airfield Automation System</td>
<td>Integrated Dissemination and Display System significantly reduces controller workload, increases situational awareness, and enhances Army airfield operational efficiency.</td>
<td>1 per position</td>
</tr>
<tr>
<td>ATC Signal Light Gun</td>
<td>Used to provide visual instructions to aircraft and vehicles operating within the tower’s assigned airspace or operational areas. E-1. Two signal light guns are required in each control tower. Battery powered signal light guns that meet Federal Aviation Administration specifications FAA-E-2214a are acceptable.</td>
<td>2 Per Facility</td>
</tr>
<tr>
<td>Binoculars</td>
<td>7x50 or greater to assist controllers in observing ground and aerial traffic.</td>
<td>2 Per Facility</td>
</tr>
<tr>
<td>Traffic Counting Devices</td>
<td>Either electrical or mechanical</td>
<td>2 Per Facility</td>
</tr>
<tr>
<td>Flight Progress Strip Holders</td>
<td>Used to hold flight progress strips and arrange in flight strip bay.</td>
<td>Minimum 50 Per Facility</td>
</tr>
<tr>
<td>Stand Alone Global Positioning System (GPS)</td>
<td>24-hour clock with seconds display, i.e. digital light emitting diode (LED)</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>Timed Clock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATC Maintenance Test &amp; Diagnostic Equipment</td>
<td>Used to test and troubleshoot ATC systems.</td>
<td>Equipment Specific</td>
</tr>
<tr>
<td>Automated Flight Strips</td>
<td>Ability to receive, send, and modify automated flight strips.</td>
<td>1 per Facility</td>
</tr>
<tr>
<td>Remote Communications Facility</td>
<td>A remote communications facility includes an equipment building with associated antenna platform(s). The ground radio equipment used for communications between air traffic controller and aircraft is installed in the building. The remote communications facility can be either a separate transmitter site, receiver site, or both. Transmitter and receiver sites are located a minimum of 1/4 mile to 1 mile apart to reduce or eliminate mutual interference.</td>
<td>As required.</td>
</tr>
</tbody>
</table>

**GROUND-CONTROLLED APPROACH**

E-24. The GCA provides final approach control services and permits aircraft to be recovered when ceiling and/or visibility are less than the prescribed minimums for non-precision instrument approaches. Services may include PAR approaches, ASR approaches, flight following, and final approach course monitoring. The facility may also offer arrival services if they have been given airspace for that purpose via LOA with the controlling agency. Departure control services are not normally provided unless coordinated through LOA. A GCA will not originate IFR clearances unless otherwise coordinated through LOA with the parent IFR facility.

**SITING CRITERIA**

E-25. The GCA must be sited in accordance with UFC 3-260-01, *Airfield and Heliport Planning and Design*. The manufacture handbook or technical manual will specify siting requirements in order to maximize the capabilities of the system.
Design Standards

E-26. UFC 4-133-01 contains the design specific requirements for all engineering facets, mechanical, structural, electrical, fire protection, force protection, and architectural.

E-27. Ground Controlled Approach Facilities are Four Position Facilities. GCAs are comprised of a Supervisory, Arrival, Final, and Flight Data position.

Equipment Requirements

E-28. Table E-3 lists standard equipment and systems required in a Ground Controlled Approach Facility. Quantities may vary based upon numbers of sectors, positions, and the overall control area serviced by the GCA. A requirements survey will validate the required quantities.

<table>
<thead>
<tr>
<th>System</th>
<th>Capability</th>
<th>Required Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position Console</td>
<td>Controller Consoles with integrated voice communications equipment with touch entry devices capable of controlling receiver/transmitter and landline communications. It must also provide landline communications with direct access lines to other Air Traffic Control (ATC), airfield operations and support facilities. This must include the capability of headset use and trainer/trainee override capabilities.</td>
<td>1 per Position</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> When collocated with other ATC Facilities, the voice communications equipment may be provided by a single switch.</td>
<td></td>
</tr>
</tbody>
</table>
| Certified Radar Displays                | Controllers may use certified radar displays for the following purposes:  
1. To determine an aircraft's identification, exact location, or spatial relationship to other aircraft.  
2. To provide aircraft with radar traffic advisories.  
3. To provide a direction or suggested headings to VFR aircraft as a method for radar identification or as an advisory aid to navigation.  
4. To provide information and instructions to aircraft operating within the surface area for which the tower has responsibility. | 1 Per Arrival Position |
| Voice Communications Switching System  | Used to manage the communications of an ATC facility. The system is modular in design in order to provide the needed flexibility. System is interoperable with National and International voice communication systems. | 1 per Facility     |
|                                        | **NOTE:** When collocated with other ATC Facilities, the voice communications equipment may be provided by a single switch.                                                                                       |                    |
Table E-3. Major equipment (GCA)

<table>
<thead>
<tr>
<th>System</th>
<th>Capability</th>
<th>Required Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Entry Devices</td>
<td>Integrates communications equipment in order to provide direct access to receiver // transmitters and landline communications. Provides direct access to servicing instrument flight rule, other ATC, airfield operations and support facilities.</td>
<td>1 per operating position</td>
</tr>
<tr>
<td>Headset/Microphone Handset</td>
<td>Enhances communications, reduces operational noise levels and allows controllers to adjust audio levels to an accepting level without impeding operations.</td>
<td>1 per controller</td>
</tr>
<tr>
<td>Very High Frequency Receiver/Transmitter</td>
<td>Used to communicate with aircraft during ground and air communications.</td>
<td>Per AR 95-2, Frequency Allocation</td>
</tr>
<tr>
<td>Ultra High Frequency Receiver/Transmitter</td>
<td>Used to communicate with aircraft during ground and air communications.</td>
<td>Per AR 95-2, Frequency Allocation</td>
</tr>
<tr>
<td>Frequency Modulation Receiver/Transmitter</td>
<td>Used to communicate with aircraft during ground and air communications.</td>
<td>Mission Specific</td>
</tr>
<tr>
<td>Back-up Transceiver</td>
<td>Portable/Tunable emergency backup transceiver with battery backup supply. Quantities identified as per this regulation</td>
<td>Per AR 95-2, Frequency Allocation</td>
</tr>
<tr>
<td>Telephone Line</td>
<td>Used for “official” ATC functions, recorded.</td>
<td>1 per sector</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 for admin office</td>
</tr>
<tr>
<td>Telephone Line</td>
<td>Used for “unofficial” ATC functions.</td>
<td>1 for IFR Room</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 for admin office</td>
</tr>
<tr>
<td>Overhead Position Lights</td>
<td>Individual controlled position lighting to be used by controllers to preserve night vision</td>
<td>1 Per Position</td>
</tr>
<tr>
<td>Digital Voice Recorder</td>
<td>A multi-channel, multi-line digital voice recorder system, for continuous unattended recording of each position used for receiver/transmitting ATC clearances, control instructions and coordination between internal/external control positions. Capabilities must include remote alarm, synchronized recording of time, playback without recording interruption, reproduction in a digital format, and automatic archiving. The recorder must be capable of split (stereo) tracks to record voice on one track and a time source on the other channel. Recorder must be capable of providing recordings to an external media. NOTE: When collocated with other ATC Facilities, the voice communications equipment may be supported by a single recorder.</td>
<td>1</td>
</tr>
<tr>
<td>Automatic Terminal Information Service (ATIS)</td>
<td>A system microcomputer to automate the delivery of airport and terminal area operational and meteorological information to aircraft flight crews.</td>
<td>1 Per Facility if a Flight Following Position is validated</td>
</tr>
</tbody>
</table>
### Table E-3. Major equipment (GCA)

<table>
<thead>
<tr>
<th>System</th>
<th>Capability</th>
<th>Required Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airport Surveillance Radar</td>
<td>Used at airports to detect and display the presence and position of aircraft in the terminal area, the airspace around airports. It is the main air traffic control system for the airspace around airports.</td>
<td>As required</td>
</tr>
<tr>
<td>ATC Automation System</td>
<td>The display receives and processes weather, reports, and other information from terminals and other sensors, providing aircraft positioning and weather data.</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>Airfield Automation System</td>
<td>Integrated Dissemination and Display System significantly reduces controller workload, increases situational awareness, and enhances Army airfield operational efficiency.</td>
<td>1 per position</td>
</tr>
<tr>
<td>Flight Progress Strip Holders</td>
<td>Used to hold flight progress strips and arrange in flight strip bay.</td>
<td>Minimum 50 Per Facility</td>
</tr>
<tr>
<td>Stand Alone Global Positioning System (GPS)</td>
<td>24-hour clock with seconds display, i.e. digital light emitting diode (LED)</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>Timed Clock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATC Maintenance Test &amp; Diagnostic Equipment</td>
<td>Used to test and troubleshoot ATC systems.</td>
<td>Equipment Specific</td>
</tr>
</tbody>
</table>

### FLIGHT FOLLOWING FACILITY

E-29. Flight following facilities are inclusive of all tactical airspace information centers that provide terminal area ATS in a contingency environment and those airspace information centers, radios, and flight operations centers validated to support fixed-base ATS missions. Provides terminal area control services. Controllers provide flight following services normally augmenting procedural controls the installation has established for the local flying area for participating aircraft. Flight following facility services include, but are not limited to: relaying clearances, weather information, airport information, position location as reported by the aircraft, and traffic advisories of reported traffic. When augmented with pre-existing, certified, and FAA flight-inspected sensory systems such as radar, controllers may provide traffic advisories and updates on observed traffic as well. A flight following facility operating in controlled airspace must have been granted the authority by the controlling agency who has ATC jurisdiction to issue clearances and instructions and provide separation of the aircraft.

### SITING CRITERIA

E-30. The Flight Following facility is not required to be in a specific location on the airfield. This function may be contained within existing infrastructure, collocated with another ATC capability or Range Operations facility.

### Design Standards

E-31. The design specifications for all engineering facets, mechanical, structural, electrical, fire protection, force protection, and architectural listed within UFC 4-133-01 apply.

E-32. Flight Following Facilities are typically three position facilities. They are comprised of a Supervisory, Flight Following, and Flight Data position. Complexity of operations, airspace volume, and density of traffic may dictate addition flight following sectors.
Equipment Requirements

E-33. Table E-4 lists standard equipment and systems required in a Flight Following Facility. Quantities may vary based upon numbers of sectors, positions, and the overall control area serviced by the tower. A requirements survey will validate the required quantities.

**Table E-4. Major equipment (flight following)**

<table>
<thead>
<tr>
<th>System</th>
<th>Capability</th>
<th>Required Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position Console</td>
<td>Controller Consoles with integrated voice communications equipment with touch entry devices capable of controlling receiver/transmitter and landline communications. It must also provide landline communications with direct access lines to other Air Traffic Control (ATC), airfield operations and support facilities. This must include the capability of headset use and trainer/trainee override capabilities.</td>
<td>1 per Position</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> When collocated with other ATC Facilities, the voice communications equipment may be provided by a single switch.</td>
<td></td>
</tr>
<tr>
<td>Certified Radar Display</td>
<td>Controllers may use certified radar displays for the following purposes: 1. To determine an aircraft's identification, exact location, or spatial relationship to other aircraft. 2. To provide aircraft with radar traffic advisories. 3. To provide a direction or suggested headings to VFR aircraft as a method for radar identification or as an advisory aid to navigation. 4. To provide information and instructions to aircraft operating within the surface area for which the tower has responsibility.</td>
<td>1 per Facility</td>
</tr>
<tr>
<td>Voice Communications Switching System</td>
<td>Used to manage the communications of an ATC facility. The system is modular in design in order to provide the needed flexibility. System is interoperable with National and International voice communication systems.</td>
<td>1 per Facility</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> When collocated with other ATC Facilities, the voice communications equipment may be provided by a single switch.</td>
<td></td>
</tr>
<tr>
<td>Communication Entry Devices</td>
<td>Integrates communications equipment in order to provide direct access to receiver // transmitters and landline communications. Provides direct access to servicing instrument flight rule, other ATC, airfield operations and support facilities.</td>
<td>1 per operating position</td>
</tr>
<tr>
<td>Headset/Microphone Handset</td>
<td>Enhances communications, reduces operational noise levels and allows controllers to adjust audio levels to an accepting level without impeding operations.</td>
<td>1 per controller</td>
</tr>
</tbody>
</table>
### Table E-4. Major equipment (flight following)

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<thead>
<tr>
<th>System</th>
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<th>Required Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High Frequency Receiver/Transmitter</td>
<td>Used to communicate with aircraft during ground and air communications.</td>
<td>Per AR 95-2, Frequency Allocation</td>
</tr>
<tr>
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<td>Used to communicate with aircraft during ground and air communications.</td>
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<td>Used to communicate with aircraft during ground and air communications.</td>
<td>Mission Specific</td>
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<tr>
<td>Back-up Transceiver</td>
<td>Portable/Tunable emergency backup transceiver with battery backup supply.</td>
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<tr>
<td>Telephone Line</td>
<td>Used for “official” ATC functions, recorded.</td>
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<td>Telephone Line</td>
<td>Used for “unofficial” ATC functions.</td>
<td></td>
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<tr>
<td>Overhead Position Lights</td>
<td>Individual controlled position lighting to be used by controllers to preserve night vision</td>
<td>1 Per Position</td>
</tr>
<tr>
<td>Digital Voice Recorder</td>
<td>A multi-channel, multi-line digital voice recorder system, for continuous unattended recording of each position used for receiver/transmitting ATC clearances, control instructions and coordination between internal/external control positions. Capabilities must include remote alarm, synchronized recording of time, playback without recording interruption, reproduction in a digital format, and automatic archiving. The recorder must be capable of split (stereo) tracks to record voice on one track and a time source on the other channel. Recorder must be capable of providing recordings to an external media. NOTE: When collocated with other ATC Facilities, the voice communications equipment may be supported by a single recorder</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>Automatic Terminal Information Service (ATIS)</td>
<td>A system microcomputer to automate the delivery of airport and terminal area operational and meteorological information to aircraft flight crews.</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>Airfield Automation System</td>
<td>Integrated Dissemination and Display System significantly reduces controller workload, increases situational awareness, and enhances Army airfield operational efficiency.</td>
<td>1 per position</td>
</tr>
<tr>
<td>Flight Progress Strip Holders</td>
<td>Used to hold flight progress strips and arrange in flight strip bay.</td>
<td>Minimum 50 Per Facility</td>
</tr>
<tr>
<td>Stand Alone Global Positioning System (GPS)</td>
<td>24-hour clock with seconds display, i.e. digital light emitting diode (LED)</td>
<td>1 Per Facility</td>
</tr>
<tr>
<td>Timed Clock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATC Maintenance Test &amp; Diagnostic Equipment</td>
<td>Used to test and troubleshoot ATC systems.</td>
<td>Equipment Specific</td>
</tr>
</tbody>
</table>
Table E-4. Major equipment (flight following)

<table>
<thead>
<tr>
<th>System</th>
<th>Capability</th>
<th>Required Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote Communications Facility</td>
<td>A remote communications facility includes an equipment building with associated antenna platform(s). The ground radio equipment used for communications between air traffic controller and aircraft is installed in the building. The remote communications facility can be either a separate transmitter site, receiver site, or both. Transmitter and receiver sites are located a minimum of 1/4 mile to 1 mile apart to reduce or eliminate mutual interference.</td>
<td>As required.</td>
</tr>
</tbody>
</table>

**NAVIGATIONAL AIDS**

E-34. This section discusses the ILS and the VOR.

**INSTRUMENT LANDING SYSTEM**

E-35. An ILS is a highly accurate radio signal navigation aid consisting of two antennas which transmit signals to receivers in the aircraft cockpit, a glide slope tower located next to the runway at approach end and the localizer antenna located at the departure end of the runway. These antennas provide the pilot with vertical and horizontal guidance when landing in low visibility. There are four types of ILS systems based on specific runway configuration and space availability, Capture Effect, Side Band, Null Reference, or End-Fire. Range information is provided by a Distance Measuring Equipment system, which is normally located in the localizer shelter.

E-36. Siting, environmental, power, and other requirements will be specific to the type system being installed. Refer to the manufactures handbook or installation guide for specific requirements.

**(VERY HIGH) FREQUENCY OMNIDIRECTIONAL-RANGE**

E-37. A VOR facility is a ground-based electronic NAVAID transmitting VHF navigation signals, 360 degrees in azimuth, oriented from magnetic north. The facility is used for air navigation. The VOR periodically identifies itself by Morse code and may have an additional voice identification feature. Voice feature may be used by ATC for transmitting routine information to pilots by way of an ATIS recorder.

E-38. Siting, environmental, power, and other requirements will be specific to the type system being installed. Refer to the manufactures handbook or installation guide for specific requirements. In congested areas, or those areas with rolling terrain, a Doppler VOR may be more suitable to meet the operational requirements.

**AIRFIELD ADVISORY OR OPERATIONS FACILITY**

E-39. When the TWR is not operational, control of the communications radios is transferred to remote control console located in the airfield or heliport operations room. Airfield or heliport advisory service consists of giving information to arriving and departing aircraft concerning wind direction and speed, preferred runway, altimeter setting, pertinent known traffic and field conditions, airfield taxi routes and traffic patterns, and authorized instrument approach procedures. If the control TWR is the NAVAID monitoring facility, the advisory facility will become the alternate NAVAID monitoring facility during hours the control TWR is not in operation.

**WEATHER SYSTEMS**

E-40. The Joint Environmental Toolkit (JET) Sensor Collection Appliance (SCA) provides the collection and dissemination of real-time airfield sensor data, observations, terminal forcasts, and weather
watch/warnings/advisory data for the local airspace as well as alternate airfields. The JET SCA provides the automated service that integrates directly with the Army Airfiled Automation System (AAAS) and D-ATIS message service. The JET SCA also provides an ATSCOM approved AAAS look-alike webpage for continued support during ATC system outages or for locations that do not have access to automated ATC systems.

E-41. Sensors now feed data into the JET server for distribution to AAAS indicators and D-ATIS message services.

AIR TRAFFIC CONTROL MISSION ESSENTIAL PECULIAR ITEMS

E-42. This section describes items difficult to identify but essential for US Army ATC facilities.

FLIGHT PROGRESS STRIPS/STRIP HOLDER

E-43. Table E-5 describes flight strip holders required at all ATC facilities.

**Table E-5. Progress strips/strip holders**

<table>
<thead>
<tr>
<th><strong>ARAC</strong></th>
<th><strong>FAA Form 7230-7.2, NSN 7530-01-449-4250.</strong></th>
<th><strong>Perforated strips, no holder necessary.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tower</strong></td>
<td><strong>FAA Form 7230-8, NSN 7530-01-449-4239</strong></td>
<td><strong>Strip holder, type 4 NSN 6605-00-485-2879.</strong></td>
</tr>
<tr>
<td><strong>AIC</strong></td>
<td><strong>FAA Form 7230-21, NSN 7530-01-449-4244</strong></td>
<td><strong>Strip holder, type 5 NSN 6605-00-485-6649.</strong></td>
</tr>
</tbody>
</table>

Legend: ARAC Army Radar Approach Control, AIC Airspace Information Center

TRAFFIC COUNTERS

E-44. Hand-hold tally registers are required in all control TWRs. These four-wheeled, registers to 9,999 and comes with reset knob, NSN 6680-00-641-3206.

PHYSICAL SECURITY REQUIREMENTS

E-45. AR 190-13 requires that a physical security plan be written by the installation commander. As an annex to this security plan, a physical security plan for aviation facilities located on, or close to, an Army installation is essential (AR 190-51).

E-46. UFC 4-133-01 identifies specific physical security requirements for each type ATC facility. Security of aviation facilities includes ATC and Navigational Aid facilities.
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Appendix F

Evaluations and Training Records

Evaluations and training records will be managed according to the procedures in this appendix. They are a part of the facility's permanent records and subject to review by authorized personnel or agencies. Entries on all evaluations and training records will be neat and accurate. When practical, entries should be typewritten (computer generated forms may be used); however, entries may be printed in ink. Incorrect entries will not be erased or struck over. When an entry must be corrected, a line will be typed or drawn through the incorrect portion and the correct entry made. The controller correcting the error will initial the correction.

TRAINEE/CONTROLLER EVALUATION

F-1. The DA Form 3479-1, Trainee/Controller Evaluation, provides a written evaluation of an individual’s training progress or job performance for a specific time while signed on one or more operating positions within a facility. It also provides a means for documenting areas of weakness that need training attention. This form is also used to document observed trends in the controller performance since the last evaluation. Instructions for completing DA Form 3479-1 are outlined in table F-1.

Table F-1. Instructions for completing DA Form 3479-1

<table>
<thead>
<tr>
<th>Block 1: Facility</th>
<th>Enter the facility for which the evaluation is being conducted.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block 2: Positions</td>
<td>Lines one and two will be used to show the positions evaluated. Separate multiple positions with a comma (LC, GC, and FD). Indicate combined positions with diagonal slash (/) (FD, LC/GC) Identify similar positions with an additional alphanumeric character (FD, GC, LCN, and LCS).</td>
</tr>
<tr>
<td>Block 3: Traffic density</td>
<td>From the presented choices, select the option, which most correctly indicate the density.</td>
</tr>
<tr>
<td>Block 3b: Conditions</td>
<td>Select the block that most correctly indicates the condition of traffic compared to the facilities normal load.</td>
</tr>
<tr>
<td>Block 4: Demonstrated performance</td>
<td>Select or manually enter the evaluation results, which most accurately indicate the demonstrated performance and training progress of the trainee/controller when compared against the standard of a rated/full performance level controller using the following standards listed below.</td>
</tr>
<tr>
<td>Satisfactory (S)</td>
<td>A selection of “Satisfactory” indicates the trainee/controller is performing at a level that is satisfactory for position qualification or the rating held.</td>
</tr>
<tr>
<td>Unsatisfactory (U)</td>
<td>A selection of “Unsatisfactory” indicates that the trainee/controller is not performing at an acceptable level. Examples would be continued errors in the subject area with little or no improvement shown and failure to complete study assignments. Selections of this performance level should not be taken lightly nor considered normal. The evaluator and the trainee should place additional emphasis on training in these areas.</td>
</tr>
</tbody>
</table>
| Needs Improvement (NI) | A selection of "Needs Improvement" indicates the trainee/controller is performing at a level less than satisfactory for position qualification or the rating held. As applied to trainees, it should be considered an extension of a “SATISFACTORY” selection and indicates the trainee is at a level expected at this point in the training program, but still exhibits deficiencies that must be corrected prior to position qualification. A selection of "Needs Improvement" in blocks a-z indicates satisfactory training progress. As applied to rated controllers, it should be considered an extension of an "UNSATISFACTORY"
### Table F-1. Instructions for completing DA Form 3479-1

| Block 4a. Separation is ensured | Provides control instructions or restrictions to ensure separation standards are maintained at all times. Satisfactory if—  
|                                | • Issues appropriate control instructions or restrictions, including speed control, vectoring techniques, and visual separation.  
|                                | • Ensures traffic entering/departing his airspace is not in conflict or about to lose separation.  
|                                | • Obtains specific approval prior to entering another position/facility's area of jurisdiction.  
|                                | • Ensures traffic is not in conflict with other aircraft or vehicular traffic on runway(s) and/or any movement area. |

| Block 4b. Safety alerts are provided | Takes action to prevent collisions between aircraft operating in the system. Satisfactory if—  
|                                     | • Issues control instructions (i.e., altitude assignment and/or turns) to prevent a collision.  
|                                     | • Applies merging target procedures to IFR/VFR conflicts. |

| Block 4c. Performs handoffs/pointouts | Performs handoffs/pointouts correct, and at the appropriate time/position. |

| Block 4d. Required coordination is performed | Coordinates all information pertinent to the situation. Ensures personnel receiving the information have all necessary information. Acknowledges all information received on position. Satisfactory if—  
|                                            | • Coordinates restrictions or SPINS.  
|                                            | • Verifies aircraft/vehicle position and/or altitude at the time of coordination.  
|                                            | • Verifies and acknowledges all information exchanges. |

| Block 4e. Good control judgment is applied | Issues control instructions or restrictions that are correct. Carefully plans procedures prior to issuing instructions to provide a safe, expeditious traffic flow. Satisfactory if—  
|                                            | • Uses correct speed control procedures/techniques.  
|                                            | • Applies effective vectoring techniques.  
|                                            | • Considers aircraft performance capabilities in control decisions, and demonstrates awareness of aircraft equipment capabilities and limitations that affect ATC instructions.  
|                                            | • Uses control procedures that do not place workload or stress on other controllers/facilities.  
|                                            | • Considers subsequent controller requirements.  
|                                            | • Does not terminate or activate radar control prematurely.  
|                                            | • Informs aircraft and appropriate personnel of significant situations.  
|                                            | • Applies effective techniques for taxiing to, from, and crossing runways. |

| Block 4f. Priority of duties is understood | Properly prioritizes actions according to their significance in the overall traffic situation. Satisfactory if—  
|                                            | • Maintains situational awareness.  
|                                            | • Performs duties in the order of their importance.  
|                                            | • Applies effective prioritization during operations where anticipated separation is utilized. |
Table F-1. Instructions for completing DA Form 3479-1

| Block 4g. Positive control is provided | Takes command of control situations and does not act in a hesitant or unsure manner. Observes present and considers forecasted traffic to predict if an overload may occur, and takes appropriate action to prevent or lessen the situation. Satisfactory if—  
  - Demonstrates confidence and takes command of control situations.  
  - Maintains positive control during stressful situations.  
  - Recognizes potential overload situations. |
| Block 4h. Effective traffic flow is maintained | Takes into account aircraft characteristics and their effect on traffic control. Uses runways and taxiways effectively. Satisfactory if—  
  - Makes effective use of runways and taxiways.  
  - Provides orderly traffic flow with proper aircraft spacing, and avoids use of excessive separation/restrictions.  
  - Considers aircraft characteristics and their effect on traffic flow and properly sequences traffic.  
  - Manages ground traffic effectively and efficiently.  
  - Implements and recovers from holding procedures efficiently.  
  - Adheres to flow control procedures. |
| Block 4i. Aircraft identity is maintained | Maintains positive identification during the entire time the aircraft are within the area of responsibility. Satisfactory if—  
  - Uses radar displays to assist in maintaining identity.  
  - Re-identifies aircraft when doubt exists.  
  - Detects errors in aircraft identity.  
  - Employs correct beacon and radar procedures in identifying aircraft.  
  - Maintains awareness of non-radar, untracked, unassociated, or primary targets within delegated airspace.  
  - Remains aware of previously coordinated traffic. |
| Block 4j. Strip posting is complete/correct | Posts all required information on strips and updates as required. Satisfactory if—  
  - Receives flight plans and distributes strips to correct operational positions in a timely manner.  
  - Posts all required information on strips, and reviews and updates as required.  
  - Posts data in correct area on strips.  
  - Ensures postings are legible.  
  - Detects and corrects strip errors, ensuring actual altitude and route agree with strip information.  
  - Selects appropriate sorting and posting options so the aircraft list is easily referenced for necessary flight information.  
  - Enters all required information into the automated systems and updates as required. |
| Block 4k. Clearance delivery is complete, correct, and timely | Transmits/Issues clearances in correct format, is specific, and uses correct phraseology. Satisfactory if—  
  - Uses specific terms to describe a fix.  
  - Adheres to read-back procedures.  
  - Adheres to pre-departure clearance procedures. |
| Block 4l. LOAs/directives are adhered to | Ensures performance of control instructions/duties is compliance with handbooks, facility procedures, and directives. Satisfactory if—  
  - Adheres to LOA requirements.  
  - Adheres to facility directives and local routing instructions. |
Table F-1. Instructions for completing DA Form 3479-1

| Block 4m. Additional services are provided | Follows the required format for providing navigational assistance, weather information, and traffic advisories. Satisfactory if—  
|                                            | • Provides navigational assistance when operational advantage would be gained by pilot or controller.  
|                                            | • Provides significant weather information in a timely manner to aircraft and controllers/facilities.  
|                                            | • Solicits PIREPs as required.  
|                                            | • Adheres to NOTAM, significant meteorological information, and center weather advisory procedures.  
|                                            | • Issues complete traffic information in required format for both radar-identified and non radar-identified aircraft as required.  
|                                            | • Provides chaff services and bird activity information when necessary. |

| Block 4n. Rapidly recovers from equipment failures and emergencies | Handles equipment failures, unusual or nonstandard situations, and emergencies correctly. Satisfactory if—  
|                                                               | • Handles aircraft emergencies effectively, including radio failures, hijacks, and bomb threats.  
|                                                               | • Appropriately handles special flight operations, and unusual or nonstandard situations.  
|                                                               | • Is knowledgeable of available backup equipment and properly transitions to its use. |

| Block 4o. Scans entire control environment | Checks assigned control environment and equipment for changes in data or presentation. Satisfactory if—  
|                                           | • Monitors equipment, equipment alarms, displays, and status information area for changes in data or presentation.  
|                                           | • Scans assigned control environment for potential errors or conflicts and weather-related problems.  
|                                           | • Scans runways for landing, departing, and crossing situations.  
|                                           | • Acts rapidly to correct errors.  
|                                           | • Recognizes when incorrect information has been passed to aircraft or other positions.  
|                                           | • Remains alert for possible problem situations from other controllers/facilities. |

| Block 4p. Effective working speed is maintained | Paces control actions and associated tasks at an acceptable rate. Satisfactory if—  
|                                                | • During periods of inactivity, reviews and updates pending/current information for familiarity and plans actions to be taken.  
|                                                | • Records information at the same time it is received from pilots/controllers/facilities.  
|                                                | • Records information at the same time it is issued to pilots/controllers/facilities. |

| Block 4q. Equipment status information is maintained | Maintains knowledge of equipment operating status. Satisfactory if—  
|                                                    | • Determines status of equipment performance.  
|                                                    | • Reports malfunctions. |

| Block 4r. Equipment capabilities are utilized/understood | Uses available equipment to the fullest extent possible. Knowledgeable on capabilities and limitations of equipment. Satisfactory if—  
|                                                          | • Enters all required data into computer for required area display.  
|                                                          | • Displays appropriate area of jurisdiction.  
|                                                          | • Adjusts radar presentation to present best display possible.  
|                                                          | • Displays appropriate filter limits.  
|                                                          | • Demonstrates knowledge of required computer entries and ensures entries are complete and correct. |
### Table F-1. Instructions for completing DA Form 3479-1

<table>
<thead>
<tr>
<th>Block</th>
<th>Description</th>
<th>Satisfactory if</th>
</tr>
</thead>
<tbody>
<tr>
<td>4a.</td>
<td>Enters necessary corrections/updates in a timely manner.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demonstrates knowledge of procedures for operating all equipment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is aware of equipment peculiarities.</td>
<td></td>
</tr>
<tr>
<td>4s.</td>
<td>Functions effectively as a facility team member</td>
<td>Accepts equal responsibility for the safe and efficient operation of the position.</td>
</tr>
<tr>
<td></td>
<td>Satisfactory if—</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maintains a spirit of cooperation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maintains professional manner.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is receptive to instructor’s/supervisor’s/team members’ suggestions for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>improvement of job performance.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remains calm under stress.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conveys pertinent information to other team members in a timely manner.</td>
<td></td>
</tr>
<tr>
<td>4t.</td>
<td>Communication is clear and concise</td>
<td>Ensures all data passed or received is understood.</td>
</tr>
<tr>
<td></td>
<td>Satisfactory if—</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demonstrates professional, positive voice.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demonstrates moderate, rather than too fast or too slow, speech rate.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Listens carefully and verifies correct information is transmitted and received.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demonstrates clear pronunciation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does not transpose words, numbers, or symbols.</td>
<td></td>
</tr>
<tr>
<td>4u.</td>
<td>Uses prescribed phraseology</td>
<td>Uses words and phrases in regards to the requirements of the duty being performed.</td>
</tr>
<tr>
<td></td>
<td>Satisfactory if—</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Uses approved procedures, words, phrases, and formats.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Issues specific instructions.</td>
<td></td>
</tr>
<tr>
<td>4v.</td>
<td>Makes only necessary transmissions</td>
<td>Transmits required information only by radio or interphone.</td>
</tr>
<tr>
<td></td>
<td>Satisfactory if—</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Uses radio/interphone only when necessary.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transmits only required information/instructions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does not use abusive or profane language.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does not transmit separate message when it would be more effective to combine information.</td>
<td></td>
</tr>
<tr>
<td>4w.</td>
<td>Uses appropriate communications method</td>
<td>Transmits information using the appropriate communications method.</td>
</tr>
<tr>
<td></td>
<td>Satisfactory if—</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Formulates message before transmitter is keyed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Uses radio/interphone when required.</td>
<td></td>
</tr>
<tr>
<td>4x.</td>
<td>Relief briefings are complete and accurate</td>
<td>Ensures duty familiarization and transfer of position responsibility are complete and accurate. Follows approved checklist when exchanging information, and both individuals acknowledge the positive transfer of responsibility.</td>
</tr>
<tr>
<td></td>
<td>Satisfactory if—</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communicates pertinent status information.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communicates weather information to relieving specialist as necessary.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communicates overall traffic situation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ensures unresolved questions about the operation of the position are resolved before transfer of responsibility.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>When assuming a position, completes the appropriate position log to indicate responsibility for a specific position or combined position.</td>
<td></td>
</tr>
<tr>
<td>4y.</td>
<td>Facility training program (FTP) progress</td>
<td>Satisfactory if -achieves FTP goals in a timely manner.</td>
</tr>
<tr>
<td>4z.</td>
<td>Airfield and airspace knowledge</td>
<td>Satisfactory if –demonstrates a working knowledge of local airfield and assigned airspace information.</td>
</tr>
</tbody>
</table>
### Table F-1. Instructions for completing DA Form 3479-1

| Block 5: Evaluator Comments | Evaluator will include comments on areas marked "Needs Improvement" or "Unsatisfactory", as well as positive comments on improved or exceptional areas of the trainee/controller:  
| Block 5a: Evaluator's printed name, rank, and position | Print evaluator's first name MI last name, rank/grade, and abbreviated duty position; (FACF instead of Facility Chief).  
| Block 5b: Evaluator's signature | Evaluator will sign the form either digitally or otherwise when their comments have been completed.  
| Block 6: Trainee/controller Comments | The evaluated trainee/controller will review the form and the evaluator's comments. At a minimum, the trainee/controller will enter whether they "Agree" or "Disagree" with the evaluator's comments or the overall rating. Trainee/controller should utilize the remaining comment area to include any specific disagreements with the evaluator as well as circumstances or irregularities they feel affected the evaluation. The trainee/controller's will terminate their comments with the acronym "EOS" to indicate "End of Statement". Facility personnel may not continue to restrict or otherwise limit the trainee/controllers comments. If additional space is needed, a continuation block is provided on the reverse of the first page. **Continuation page not required if not used.**  
| Block 6a: Trainee/controller's printed name | Print trainee/controller First Name MI Last Name. Rank, grade, or position is not necessary for the purpose of the evaluation.  
| Block 6b: Trainee/controller's signature | The trainee/controller will sign the form either digitally or otherwise when their comments have been completed. The trainee/controller will NOT sign the form if the Evaluator has not completed all blocks, entered their comments, and signed the evaluation.  
| Block 7: Training Day/Hours | Enter Training Day count for controllers in fixed site training programs.  
| Block 8: Type training | Enter Q for “qualification”, P for “proficiency”, or R for “remedial” to define the type of training being evaluated.  
| Block 9: Date | The evaluator will enter the date the evaluation was conducted. Dates will be entered in the format DD MMM YY: (07 JAN 12).  
| Block 10: Overall rating/Reviewer | The overall rating is an indication of trainee/controller performance. The evaluator considers the amount of time a trainee has been on the position and where they would expect a trainee to have progressed at this point as reflected by the FTP schedule and cumulative down time. The evaluator then selects either SAT or UNSAT according to the following guidance:  
|  
| If any areas are marked UNSAT in Block 4, Items a-z the overall rating will be UNSAT.  
| A trainee who has some areas marked SAT and others NEEDS IMPROVEMENT, but none marked UNSAT, could receive a SAT overall rating. This would indicate the trainee/controller is progressing satisfactorily but still needs additional training and experience to reach the PQ level of competency.  

---

08 October 2019
Table F-1. Instructions for completing DA Form 3479-1

<table>
<thead>
<tr>
<th>Reviewer</th>
<th>Instructions for completing DA Form 3479-1</th>
<th>As applied to rated controllers the overall rating indicates whether the controller meets the level of proficiency and ability necessary for a rated/full performance level controller at that facility. Therefore, any areas marked NEEDS IMPROVEMENT for a rated controller will result in an overall UNSAT score.</th>
</tr>
</thead>
</table>
| Reviewer | The reviewer will—                          | • Verify the administrative information on the form.  
|          |                                            | • Review comments of the evaluator and trainee/controller.  
|          |                                            | • Ensure the evaluation was annotated correctly, commented appropriately, and signed by the evaluator.  
|          |                                            | • Ensure the form has been commented, and signed by the trainee/controller.  
|          |                                            | • Initial to the right of the overall rating. |

Legend: LC Local Control, GC Ground Control, FD Flight Data, LCN Local Control North, LCS Local Control South, SPINS Special Instructions, ATC Air Traffic Control, LOA Letter of Agreement, PIREP Pilot Report, NOTAM Notice to Airmen, FTP Facility Training Program, PQ Position Qualification

USE

F-2. DA Form 3479-1 will be completed and the results of the evaluation explained in detail to the trainee. A single evaluation form may be used to evaluate the performance of a trainee/controller at more than one control position.

Note. Proficiency evaluations will not be used while a controller is progressing toward a rating. Evaluations of trainee performance on positions previously position qualified on will be indicated as “Q” Qualification training until the rating is completed.

F-3. DA Form 3479-1 provides a written evaluation of a controller’s ability to perform at a position. It is also used to evaluate a trainee’s progress toward becoming PQ. If his proficiency or training progress is not satisfactory, the trainee/controller must be told why and what he must do to improve. This may include study assignments, oral or written tests, or extra time on a position. The facility chief should use the results of trainee/controller evaluations to determine training trends, time extensions, and FTP modifications. DA Form 3479-1 is also used to support reclassification requests.

FREQUENCY

F-4. Supervisors or trainers determine when to conduct trainee/controller evaluations based upon demonstrated performance. Evaluations should be conducted based upon observed trends during training and to emphasis and reinforce training points. As a minimum, these evaluations will be completed as qualification, proficiency, or remedial type evaluations under the following circumstances—

• Qualification:
  • To document the successful removal of a controller from remedial training.
  • To document RL advancement in a tactical facility.
  • To document progression in an installation (fixed-site) facility at a minimum every 14 calendar days while working toward a rating.
  • To document the results of live traffic and simulator training events undertaken by trainees in a tactical rating program.
  • To document position qualifications and facility ratings.
• Proficiency:
  • To document the reinstatement of a controller who has failed to maintain currency.
  • To document the results of annual or biennial skills evaluations.
Appendix F

- To document the results of live-fly and simulator training events undertaken by controllers maintaining proficiency in tactical ratings.
- To document the initial results of unsatisfactory evaluations.
- Remedial:
  - To document the progression of controllers undergoing remedial training.

**Note.** The evaluation will include an assessment of proficiency for position(s) the controller has been qualified on as well as an assessment of performance for the position on which the controller is currently training. Separate evaluations for proficiency and qualification are not required while undergoing training. Additionally, the documentation of recommendations for position qualification are not necessary unless deemed appropriate by ATC managers.

F-5. If an evaluation is given outside of the 14 calendar day installation facility requirement, or insufficient traffic exists during a live-fly event in a tactical setting, a Section III entry is required explaining the reason for the overdue evaluation.

**LOSS OF CURRENCY**

F-6. Evaluations given to assess proficiency after a loss of currency will be administered on all control positions with direct one-on-one supervision (see A-35 for definition of direct supervision). The evaluation will be conducted under normal traffic conditions and last long enough to provide a reliable performance sample of all duties associated with each position and the facility rating hold. It must be completed satisfactorily before the controller assumes position responsibility without supervision. The evaluation given for a loss of currency may include classroom academics, simulation exercises, written and oral examinations in conjunction with practical evaluations conducted on all positions associated with the facility rating. The ATC/facility chief will determine training requirements necessary for the controller to achieve proficiency. All training conducted for loss of currency will be recorded in Sections II and III of DA Form 3479. Evaluations given for a loss of currency will be administered by the facility chief, ATC training supervisor/specialist, or SL. The ATC chief may administer the evaluation, if he is facility-rated and current in the facility.

F-7. Remedial training will be noted in Sections II and III of DA Form 3479, if additional training is needed to regain proficiency because of an unsatisfactory evaluation. The amount of training devoted to regaining proficiency is determined by the facility chief and will be outlined in Section III of DA Form 3479. Individuals unable to regain proficiency will be processed according to AR 95-2.

**RETENTION**

F-8. When the reviewing authority signs an evaluation, it will be placed on top of written tests and other evaluations and attached to the right inside portion of DA Form 3479. The results of all evaluations will be entered in Section II of the controller’s training record. Evaluations will be retained until facility rating and then returned to the controller. Evaluations for facility ratings, loss of currency, no-notice evaluations, or annual or biennial evaluations will be retained for one year or until the next annual or biennial skills evaluation. Figure F-1, page F-9, provides an example of the completed DA Form 3479-1.
**Evaluations and Training Records**

**Figure F-1. Sample DA Form 3479-1**

<table>
<thead>
<tr>
<th>TASK EVALUATED</th>
<th>LIVE</th>
<th>SIM</th>
<th>TASK EVALUATED</th>
<th>LIVE</th>
<th>SIM</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Separation is ensured.</td>
<td>S</td>
<td></td>
<td>n. Rapidly recovers from equipment failures and emergencies.</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>b. Safety Alerts are provided.</td>
<td>S</td>
<td></td>
<td>o. Scans entire control environment.</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>c. Performs handoffs/point-outs.</td>
<td>U</td>
<td></td>
<td>p. Effective working speed is maintained.</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>d. Required coordination is performed.</td>
<td>S</td>
<td></td>
<td>q. Equipment status information is maintained.</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>e. Good control judgment is applied.</td>
<td>S</td>
<td></td>
<td>r. Equipment capabilities are utilized understood.</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>f. Priority of duties is understood.</td>
<td>S</td>
<td></td>
<td>s. Functions effectively as a facility team member.</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>g. Positive control is provided.</td>
<td>U</td>
<td></td>
<td>t. Communication is clear and concise.</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>h. Effective traffic flow is maintained.</td>
<td>S</td>
<td></td>
<td>u. Uses prescribed procedures.</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>i. Aircraft identity is maintained.</td>
<td>U</td>
<td></td>
<td>v. Makes necessary transmissions.</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>j. Strip posting is complete/correct.</td>
<td>S</td>
<td></td>
<td>w. Uses proper communication method.</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>k. Clearance delivery is complete/correct/timey.</td>
<td>S</td>
<td></td>
<td>x. Releasings are clear, concise, and accurate.</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>l. LOI/other directives are adhered to.</td>
<td>S</td>
<td></td>
<td>y. Facility planning program progress.</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>m. Additional services are provided.</td>
<td>S</td>
<td></td>
<td>z. Uses and airspace knowledge.</td>
<td>S</td>
<td></td>
</tr>
</tbody>
</table>

5. **EVALUATOR COMMENTS**

PFC Snuffy was observed for 3-00 on the primary position. The following areas of interest were found.

G. I and P. PFC Snuffy was observed at KG3 in the downwind and confused him with DD 22. PFC Snuffy then became flustered and working speed diminished. At this point in the training program these mistakes should not be happening.

U. and V. PFC Snuffy made several traffic calls that had excessive verbiage. The use of this excessive verbiage prevents necessary transmissions such as clearances and may confuse pilots.

PFC Snuffy will review FAA JO 7110.65 2-1-21 for proper traffic advisory information, EOS.

a. **EVALUATOR'S PRINTED NAME, RANK, AND POSITION**

b. **EVALUATOR’S SIGNATURE**

Digitally signed by:

 Doe, Jane M.

6. **TRAINEE/CONTROLLER COMMENTS**

I concur: EOS.

a. **TRAINEE/CONTROLLER’S PRINTED NAME**

b. **TRAINEE/CONTROLLER’S SIGNATURE**

Digitally signed by:

Snuffy, Joe D.
TRAINING AND PROFICIENCY RECORD - AIR TRAFFIC CONTROL

F-9. DA Form 3479 is a permanent and comprehensive record of training, certification, qualification, proficiency, ratings, and ATC duty assignments.

F-10. Each organization will maintain a complete and current DA Form 3479 for all assigned or attached ATC specialists or ATS specialists. DA Form 3479 will be stored and maintained according to the requirements for ARIMS file 95-2d.

F-11. Pages in DA Form 3479 will be numbered with the section number followed by an incremented page number starting at "0", for example, "2-__" or "2-0" would indicate the first page of Section II and "2-5" would indicate the sixth page of Section II.

F-12. Abbreviations or contractions used will be according to FAAO 7340.2, and this publication.

Department of the Army Form 3479, Section I

F-13. DA Form 3479, section I is used to record units and locations of ATC assignments, duties performed, periods of assignment, ratings, or certifications received, and awards. Figure F-2, page F-11, is an example of a completed DA Form 3479, Section I.

F-14. Additional duty position designations may be used based on civilian job descriptions or unit mission provided they do not duplicate those shown above. Standard duty position abbreviations may be used.

F-15. The following instructions aid in completion of this form:

- **Name:** Enter last name, first name, and middle initial of the individual. Use both available lines if needed.

- **ASGN INIT:** enter the assigned operating initials of the individual. This entry may be automated, written in ink, or entered in pencil.

- **Rank:** Enter the standard three-letter rank abbreviation for military personnel, "DAC" for Department of the Army civilians, "LN" for local national non-DOD civilians, and "CIV" for other civilians or contractors. This entry may be automated, written in ink, or entered in pencil.

- **CTO Number:** If applicable, enter the assigned CTO certificate number for the individual.

- **ATCS:** Enter the assigned ATCS number of the individual.

- **Facility Section, Unit of Assignment, Installation or Location:**
  - On the first line, enter the facility or section of assignment.
  - On the second line, enter the unit to which the facility or section is a part.
  - On the third line, enter the installation or location of the facility or section.
  - If the individual changes duty assignments, but the facility, location, or assignment does not change, there is no need to repeat this entry on the next line.

- **Duties Performed:** Enter the current duty assignment of the individual.

- **Date Assigned (To/From):** Using the DD MMM YY format.

- **Applicable Equipment, Certifications or Awards, and Remarks:** Self-explanatory.
### Figure F-2. Sample DA Form 3479, Section I

#### Department of the Army Form 3479, Section II

F-16. Section II of DA Form 3479 is used to record training received, tests and examinations, evaluations, and associated results. Figure F-3, page F-13, illustrates a completed DA Form 3479, Section II.

F-17. The following instructions aid in the completion of this form:
Appendix F

- **Subject/Positions/Equipment:**
  - For tests and examinations enter the material or equipment tested.
  - For controller evaluations enter the facility positions which were evaluated.
  - Use a comma (,) to separate individual positions ("FD, GC").
  - Use a slash (/) to show consolidated or combined positions (for example "FD, GC/LC").

- **Type TRNG:** For controllers, enter “P” for Proficiency, “Q” for Qualification or “R” for Remedial.

- **Date:** Using the DD MMM YY format, enter the date the training, test, or evaluation was completed.

- **Results:** Enter “S” for Satisfactory/Pass/Go or “U” for Unsatisfactory/Fail/No Go.

- **Remarks:** The remarks block is used to record pertinent comments that add further detail to the entry. The following information aids in completing remarks entries:
  - Enter DA Form 3479-1 for evaluations.
  - Written tests given.
  - Include total position hours for DA Form 3479-1. Annotate tactical position hours and all simulation hours.
  - Record RL assessments and progression.
  - Include other relevant training remarks as necessary.
Figure F-3. Sample DA Form 3479, Section II

Department of the Army Form 3479, Section III

F-18. Section III of DA Form 3479 (figure F-4, page F-14) is used to record additional information pertaining to remarks in other sections, interview data, or comments that may affect the individual’s career (for example,
Appendix F

Table: Sample DA Form 3479, Section III

<table>
<thead>
<tr>
<th>NAME</th>
<th>RANK</th>
<th>SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chosen, Jim O., SSG, Facility Chief</td>
<td>Digitally signed by:</td>
<td>Chosen, Jim O.</td>
</tr>
</tbody>
</table>

**SECTION III - MISCELLANEOUS GENERAL COMMENTS**

1. 01 Mar 17: PV2 Doe is assigned to the ANMSG-135 Control Tower Team and assigned the operating initials "GE". PV2 Doe has been briefed on the tower team mission, RL progression, the ATTP, and the CTL. PV2 Doe's flight physical and certificate of grades have been verified. PV2 Doe has received a counseling on training time limitations and is designated by the Commander RL-3. Phase Training begins on this date.

<table>
<thead>
<tr>
<th>NAME</th>
<th>RANK</th>
<th>SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chosen, Jim O., SSG, Facility Chief</td>
<td>Digitally signed by:</td>
<td>Chosen, Jim O.</td>
</tr>
</tbody>
</table>

2. 26 May 17: PV2 Doe has completed all requirements of Phase I training and is awarded RL-2. Phase II training begins on this date and will include live traffic training at Desidano Tower.

<table>
<thead>
<tr>
<th>NAME</th>
<th>RANK</th>
<th>SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chosen, Jim O., SSG, Facility Chief</td>
<td>Digitally signed by:</td>
<td>Chosen, Jim O.</td>
</tr>
</tbody>
</table>

3. 14 Sep 17: PFC Doe failed sections pertaining to AR 40-8 and AR 95-2 of the Pre-ATCS exam. The Control Tower Team PFC Doe has been counseled and placed on remedial to correct deficiencies. A four hour classroom training session will be provided prior to retest. The retest will be completed no later than 28 September 2017.

<table>
<thead>
<tr>
<th>NAME</th>
<th>RANK</th>
<th>SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chosen, Jim O., SSG, Facility Chief</td>
<td>Digitally signed by:</td>
<td>Chosen, Jim O.</td>
</tr>
</tbody>
</table>

4. 30 Sep 17: PFC Doe has completed all requirements of Phase I training for the Control Tower Team. PFC Doe is awarded RL-1 and ATCS rated on the ANMSG-135 at the 60th. PFC Doe will begin Facility Management and Administration training and be placed in the facility rating program at Desidano Tower effective 05 October 2017.

<table>
<thead>
<tr>
<th>NAME</th>
<th>RANK</th>
<th>SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chosen, Jim O., SSG, Facility Chief</td>
<td>Digitally signed by:</td>
<td>Chosen, Jim O.</td>
</tr>
</tbody>
</table>

5. 05 Oct 17: PFC Doe is attached to Desidano Tower for additional tower training with the goal of achieving a CTO rating. PFC Doe was given a briefing on the tower mission, the Facility Training Program (FTP), and counselled on training time limitations. PFC Doe has been previously conducted live traffic training in the tower and completed his FTM Chapter 1 test on 29 Jul 17. Primary Knowledge phase begins on this date.

<table>
<thead>
<tr>
<th>NAME</th>
<th>RANK</th>
<th>SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smith, Jack P., DAC, Training Supervisor</td>
<td>Digitally signed by:</td>
<td>Smith, Jack P.</td>
</tr>
</tbody>
</table>

**Figure F-4. Sample DA Form 3479, Section III**

F-19. Section III is completed as follows:

- Each entry will start with a date in standard DD MMM YY format.
- The body of the text area is for comments or elaboration about other entries, events, or incidents within the record.
- Each entry requires the name, rank, title, and signature of the individual making the entry.
- Mandatory entries in this section include:
  - Reason and time limits for personnel placed on remedial training.
  - Failure of the pre-FAA/ATCS examination.
  - Failure of the final FAA/ATCS examination.
  - Gaining unit inspection of records.
  - Date granted, and time limit (if applicable), for TTE.
  - Position Qualification, Rating, RL Progression dates with total position hours for tactical facilities.
  - Results of No-Notice Evaluations.
  - Results of Annual Skills Evaluations.

Department of the Army Form 3479, Section IV

F-20. The individual radar record (figure F-5, page F-16) is a monthly count of radar approaches by type or operation conducted by the controller. This section will be closed out the last day of each calendar year by entering the yearly total—the total to date (the total of all the previous year’s approaches). A controller previously rated in a radar facility, but is currently working in a tower or AIC, will enter only the date and bring forward the totals each year. Monthly entries of 0 are not necessary. If a controller has never been radar-rated, the form may be left blank. This section applies only to radar facilities; however, it must be kept for all controllers once they start radar training. Supervised or simulated approaches are counted separately from live approaches.
F-21. The facility chief will tally total runs for the year and total runs brought forward and enter results in the "Total Runs" line. Upon completion of all entries, a new form will be initiated and the totaled runs brought forward. The new form will be signed, dated, and the previous form returned to the controller.

**Figure F-5. Sample DA Form 3479, Section IV**

F-21. The facility chief will tally total runs for the year and total runs brought forward and enter results in the “Total Runs” line. Upon completion of all entries, a new form will be initiated and the totaled runs brought forward. The new form will be signed, dated, and the previous form returned to the controller.
Note. Supervised approaches are approaches that require direct supervision for a controller. Simulated approaches are conducted on an ATC simulator. Live approaches are those not requiring direct supervision and are not simulated.

PREPARATION AND MAINTENANCE

F-22. Each organization will maintain a complete and current training and proficiency folder for all assigned or attached ATCS or ATS specialists.

F-23. The record will be kept in a straight cut, 9 1/2 inch by 11 3/4 inch, heavy-duty file folder.

F-24. Each folder will contain a file label in the upper left corner and a folder label with return mailing instructions centered on the front cover.

F-25. File label will be formatted according to DA Pam 25-403 and the records retention standard-Army criteria for file 95-2d. Folder label will contain the text illustrated in figure F-6.

![Figure F-6. File folder label](image)

F-26. The folder will be filed alphabetically by the controller’s last name. A dummy folder (figure F-7) will be used and labeled according to AR 25-400-2 and DA Pam 25-403 to reduce file labeling requirements.

![Figure F-7. Dummy folder](image)

F-27. Each record folder will contain the following on the left side, top to bottom:
Appendix F

- DA Form 3479.
- FAA Form 8000-5 (Certificate of Designation) or other examiner designations per AR 95-2 retain permanently as a historical record even if expired or cancelled.
- Electronic media copy of folder contents.

F-28. Right side (figure F-8) top to bottom contents are—
- FAA Form 7220-1 (for suspended personnel).
- DA Form 3479-1s.
- CTLs.
- Written Examinations.
- DD Form 2992:
  - Original annual medical recommendation for flying or special operational duty will be placed on the bottom.
  - All subsequent temporary disqualifications (groundings) and return to duties (upslips) will be maintained on top of the original annual flight physical until the next annual flight physical is completed.

![Figure F-8. Right side contents of controller training records](image)

**Availability**

F-29. File folders are available to the individual controller upon request. They will also be made available to—
- ATSCOM.
- Commanders.
- FAA authorities.
- Supervisors.
- Aircraft accident and flight violation investigators.
- ATCS or CTO examiners who facility-rate the controller for duty.
CONTESTS AND APPEALS

F-30. Individuals may contest (appeal) the entries on the DA Form 3479. Appeals will be directed through channels to the Commander, ATSCOM, AFAT-ATS-CT, 30501 Nevin Street, Cairns Army Airfield, Fort Rucker, Alabama 36362-5265.

RETENTION

F-31. These records are permanent and will remain active while an individual is an ATC. The records will be returned to the individual upon completion of reclassification actions or termination of service.

MAINTENANCE CERTIFICATION RECORDS AND FORMS

F-32. This section explains the required files, forms, and records for administering the maintenance certification program. It explains the contents of the records folder, how to complete the forms, and lists the equipment requiring certification authority.

RECORDS FILE

F-33. For each technician assigned to the maintenance section who requires certification, establish and maintain an official certification and related training file. This file will be under the control of the facility maintenance chief/platoon/section. It will be kept in an area accessible only to authorized personnel who have been properly screened, cleared, and trained. Information in the file will be protected according to privacy act regulations.

F-34. Each official training file will contain documentation substantiating the technician’s qualifications to possess certification authority or have responsibility on specific system/subsystems/equipment. The file will be used as a complete historical record of the technician’s certification progress. It will contain such background data and supporting documents as reports, certification responsibility assignments/withdrawals, and granting/revocation of certification authority. This informational file will contain documentation to support the program responsibilities assigned to the office maintaining the file.

F-35. The pertinent records will be kept in a straight cut, 9½ inch by 11¾-inch, heavy-duty file folder. Each folder will be maintained according to AR 25-400-2. The folders will be filed alphabetically by the technician’s last name. The following information will be entered on the front cover of the file folder: Air Traffic Control Maintenance Qualification and Related Training Records Folder, United States Army. If found return to: Commander, ATSCOM, AFAT-ATS-CT, 30501 Nevin Street, Cairns Army Airfield, Fort Rucker, Alabama 36362-5265. The folder will contain—

- Certification and related training received.
- Performance examination sheets.
- Theory (concepts) and performance examination results.
- Grades and certifications obtained through training.
- Other correspondence related to training and certification.
- Responsibility assignment.

F-36. The left side (foldout portion) of the folder will contain DA Form 3479-9 and DA Form 3479-10, Responsibility Assignment. No other forms, records, or papers will be on this portion of the folder. The right inside (foldout portion) of the folder will contain performance examination results as well as other correspondence related to ATC maintenance training.

F-37. Upon request, technicians may review the contents of their records folder. The folders are available for review to—

- ATSCOM representative.
- Commanders.
- FAA authorities.
- Supervisors (training or maintenance).
Appendix F

- Aircraft accident investigators.
- Mobile maintenance contact teams.
- Systems managers and their authorized representatives.
- Examiners who administer theory (concepts) and performance examinations.

F-38. When a technician is reassigned to another maintenance facility/shop, the losing organization will note the effective reassignment date and location (if known) on the DA Form 3479-9, Section II. The ATC facility retains the active paper records until individual transfers. These paper records are transferred with the military personnel records jacket or civilian personnel folder, as appropriate. Automated management information at the primary location is retained until no longer needed for current operations. AR 5-400-2 explains record retention and disposal procedures.

F-39. When civilian and military personnel retire or separate from federal service, their records are retired. Civilian personnel records are sent to the National Personnel Records Center, 111 Winnebago Street, St. Louis, Missouri 63118; military personnel records are sent to the US Army Personnel Center and US Army Reserve Components Personnel and Administration Center, 9700 Page Boulevard, St. Louis, Missouri 63132.

FORMS

F-40. DA Form 3479-9 and DA Form 3479-10 are completed on each assigned or attached technician (military and civilian).

Department of the Army Form 3479-9

F-41. DA Form 3479-9 will be used to maintain a record of the status of each individual in the certification program for the associated facility/shop. It specifies the technician's certification authority by the system/subsystem/equipment for which there is an associated examination. The information on the form includes, but is not limited to, the following:

- All certification authority issued, including interim.
- All certification-related schooling, correspondence study, OJT, out-of-house training, and certification program examinations. The information shall also include examination results (passed, failed) and completion dates of the training and examinations.
- Signature/initials of responsible officials (maintenance chief/maintenance training personnel).
- The beginning and ending dates of acquired experience.
- The date that certification authority was revoked on specific systems/subsystems/equipment.

F-42. DA Form 3479-9 is used to evaluate a technician's progress toward becoming certified or to assess unsatisfactory progress in a training program. The technician will be told what he must do to improve and why. This information may include study assignments or additional OJT.

F-43. The maintenance chief must review the technician's folder contents annually and annotate "Annual Review" in blocks 7 through 10 of the DA Form 3479-9. As the technician becomes certified or completes related training, the record will be annotated within 15 days. Once the maintenance chief reviews and signs the records, all performance examination results will be placed in the order that the examinations were taken with the latest on top. These results will be retained in the record as long as equipment certification authority remains valid. These folders are permanent records and will remain active while the individual is an ATC maintenance technician. The records of any reclassified technician will be returned to the individual upon completion of reclassification actions.

F-44. Instructions for completing DA Form 3479-9 (figures F-9 to F-11, pages F-22 to F-24) are as follows:

- **Block 1, Name:** Enter the technician's name.
- **Block 2, Grade/Rank:** In pencil, enter the technician's grade/rank (for example, GS-11 or SSG).
- **Block 3, System/Subsystem/Equipment:** Enter the specific system/subsystem/equipment on which the technician is qualified or will qualify (for example AN/FRN-41(V), AN/TPN-31, IVSR, or ASR-11).
Evaluations and Training Records

- **Block 4, Theory:** In column *a*, enter the method by which system requirements were met (refer to footnote 1 or DA Form 3479-9). In column *b*, enter the date (DDMMYY) the technician successfully completed the theory (concepts) requirements (for example 101199). In column *c*, the responsible official writes his initials.

- **Block 5, Performance:** In column *a*, enter the method by which performance requirements were met (refer to footnote 1 on DA Form 3479-9). In column *b*, enter the date (DDMMYY) that the technician successfully completed performance requirements. In column *c*, the responsible official writes his initials.

- **Block 6, Certification:** In column *a*, enter the date (DDMMYY) the certification authority requirements were fully met and the theory (concepts) examination was successfully completed (refer to footnote 2 on DA Form 3479-9). In column *b*, enter the date (DDMMYY) the certification authority was revoked.

- **Block 7, Duty Station:** Enter the technician's duty station (for example, Robert Gray AAF, Fort Hood or Company B, 164th ATS Group).

- **Block 8, Date of Action:** Enter the date (DDMMYY) of that particular action.

- **Block 9, Type of Action:** Enter the type of action or remarks that pertain to the entry in block 9.

- **Block 10, Maintenance Chief's Signature:** Self-explanatory.

- **Block 11, System/Subsystem/Equipment:** Enter the system/subsystem/equipment for which the technician took the training or examination.

- **Block 12, Course Number:** Self-explanatory.

- **Block 13, Training of Examination:** In column *a*, enter C or P (refer to footnote 3 on DA Form 3479-9). If the training or examination does not pertain to either, leave blank. In column *b*, enter the edition number of the theory (concepts)/performance examination. In column *c*, record the results of the examination or course by entering either P or F (refer to footnote 4 on DA Form 3479-9). In column *d*, enter the start date (DDMMYY) of training, examination or course. In column *e*, enter the completion date (DDMMYY) of training, examination or course.

- **Block 14, Remarks:** Enter remarks pertaining to the technician's training; if desired, continue remarks on an attached sheet.

- **Block 15, Initials:** If the entries in blocks 11 through 14 pertain to examination results, the examiner writes his initials in block 15. If the entries pertain to training, the maintenance chief writes his initials in block 15.
Figure F-9. Sample DA Form 3479-9, page 1
<table>
<thead>
<tr>
<th>7. DUTY STATION</th>
<th>8. DATE OF ACTION</th>
<th>9. TYPE OF ACTION</th>
<th>10. MAINT CHIEF’S SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-58th AOB Fort Rucker, AL</td>
<td>11 Feb 2019</td>
<td>Assigned</td>
<td>Digitally signed by: Grease, Billy J.</td>
</tr>
<tr>
<td>1-58th AOB Fort Rucker, AL</td>
<td>07 Feb 2020</td>
<td>Annual Review</td>
<td>Digitally signed by: Grease, Billy J.</td>
</tr>
<tr>
<td>1-58th AOB Fort Rucker, AL</td>
<td>02 Aug 2020</td>
<td>Re-Assigned</td>
<td>Digitally signed by: Grease, Billy J.</td>
</tr>
<tr>
<td>F Co. 3-2 GSAB Camp Humphreys, ROK</td>
<td>26 Aug 2020</td>
<td>Assigned</td>
<td>Digitally signed by: Grease, Billy J.</td>
</tr>
</tbody>
</table>

Figure F-10. Sample DA Form 3479-9, page 2
### Figure F-11. Sample DA Form 3479-9, page 3

#### Department of the Army Form 3479-10

F-45. DA Form 3479-10 (figures F-12 and F-13, pages F-26 and F-27) is also used to officially assign certification responsibility/authority to the technician. Instructions for completing DA Form 3479-10 are as follows:

- **Block 1, Type:** Enter an X in the appropriate box. Enter the revision number if applicable. Initial assignment block is checked when the form is generated to document the technician’s assigned maintenance or certification responsibilities for the first time. The revision block is checked each...
time the form is generated to document technician’s equipment or certification responsibilities change. The revocation block is checked when the form is generated to document the technician’s lack of proficiency on the system.

- **Block 2, Date:** Enter the date (DDMMYY).
- **Block 3, Page Number:** Self-explanatory.
- **Block 4, Name:** Self-explanatory.
- **Block 5, Location:** Self-explanatory.
- **Block 6, Position Title and Rank/Grade:** Self-explanatory.
- **Block 7, Immediate Supervisor:** Self-explanatory.
- **Block 8, Location/Phone Number:** Enter the location and office telephone number of the immediate supervisor.
- **Block 9, System/Facility/Equipment:** In column a, enter the type of equipment for which the technician is assigned responsibility (for example, AN/FRN-41(V)1, MARK 1F or MARK 20A). In column b, enter the identification of the station or location (for example, PTK CNS or Starns Beacon, Cairns Tower).
- **Block 10, Responsibility (Refer to maintenance and certification codes on the back of DA Form 3479-10):** In column a, enter the appropriate maintenance responsibility code. In column b, enter the appropriate certification responsibility code.
- **Block 11, Effective Dates:** Enter the effective starting and ending dates (DDMMYY) of the responsibility. The ending date is when the responsibility is no longer required or has been revoked.
- **Block 12, Comments:** Enter comments pertaining to certification responsibilities; if there are no comments, so state by entering None.
- **Block 13, Special Instructions/Restrictions/ Limitations/Remarks:** Enter special instructions for restrictions/ limitations, and enter other remarks. (If certification code LC is entered in block 10, the limitations must be shown in block 13. If code SSC is entered in block 10, the equipment must be listed in block 13.)
- **Block 14, Technician:** Enter the technician’s name, title, and grade/rank. The technician will sign in this block.
- **Block 15, Immediate Supervisor:** Enter the immediate supervisor’s name. The immediate supervisor will sign in this block.
- **Block 16, Examiner:** Enter the name of the examiner. The examiner will sign in this block.
- **Block 17, Copy To:** Enter an X in the box marked FILE if this is the file copy, and indicate who was given a copy of this DA Form 3479-10. If an X is entered in the OTHER box, specify the personnel or element receiving a copy.
## RESPONSIBILITY ASSIGNMENT

For use of this form, see TC 3-04.15; the proponent agency is TRADOC.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TYPE</td>
<td>Initial Assignment</td>
</tr>
<tr>
<td>2. DATE</td>
<td>17 Jul 2019</td>
</tr>
<tr>
<td>3. PAGE NO.</td>
<td>1</td>
</tr>
<tr>
<td>4. NAME (last, first, MI)</td>
<td>Tommy T.</td>
</tr>
<tr>
<td>5. LOCATION</td>
<td>F Co. 2-227 GSAB, Fort Hood, TX</td>
</tr>
<tr>
<td>6. POSITION TITLE AND RANK/GRADE</td>
<td>ATS Maintainer SPC/E-4</td>
</tr>
<tr>
<td>7. IMMEDIATE SUPERVISOR</td>
<td>Doc. Jenny L.</td>
</tr>
<tr>
<td>8. LOCATION/PHONE NO.</td>
<td>Fort Hood, TX DSN: 867-5309</td>
</tr>
</tbody>
</table>

NOTE: As recorded on DA Form 3479-9-R, you have demonstrated proficiency on the equipment listed below. You are hereby assigned maintenance and certification responsibility for this equipment. The kinds and levels of responsibility delegated to you are shown by the code designations, which are explained on the reverse side of this form.

<table>
<thead>
<tr>
<th>SYSTEM/FACILITY/EQUIPMENT</th>
<th>RESPONSIBILITY</th>
<th>EFFECTIVE DATES</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTSQ-193B</td>
<td>Fort Hood</td>
<td>RWA, FC</td>
<td>25 Jun 2019</td>
</tr>
</tbody>
</table>

Figure F-12. Sample DA Form 3479-10, page 1
CONTESTS AND APPEALS

F-46. Trainees/technicians may agree or disagree with the review and make the comments they feel are necessary. They will place their comments on a separate sheet and attach the sheet to the review. The reviewing authority ensures the forms are filled out properly, makes the appropriate entries/comments, and signs and dates the form. Technicians may contest or appeal the entries on DA Form 3479-9. Complaints will be directed through channels to Commander, ATSCOM, AFAT-ATS-CT, 30501 Nevin Street, Cairns Army Airfield, Fort Rucker, Alabama 36362-5265.
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# Glossary

## SECTION I – ACRONYMS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAF</td>
<td>Army airfield</td>
</tr>
<tr>
<td>ACO</td>
<td>airspace control order</td>
</tr>
<tr>
<td>ACOM</td>
<td>Army command</td>
</tr>
<tr>
<td>ACP</td>
<td>airspace control plan</td>
</tr>
<tr>
<td>AD</td>
<td>air defense</td>
</tr>
<tr>
<td>ADIZ</td>
<td>air defense identification zone</td>
</tr>
<tr>
<td>AHP</td>
<td>Army heliport</td>
</tr>
<tr>
<td>AMOS</td>
<td>Automated Meteorological Observing System</td>
</tr>
<tr>
<td>AMTP</td>
<td>air traffic services maintenance training program</td>
</tr>
<tr>
<td>AO</td>
<td>area of operations</td>
</tr>
<tr>
<td>APG</td>
<td>aviation procedure guide</td>
</tr>
<tr>
<td>ARAC</td>
<td>Army radar approach control</td>
</tr>
<tr>
<td>ARIMS</td>
<td>Army Records Information Management System</td>
</tr>
<tr>
<td>ARNG</td>
<td>Army National Guard</td>
</tr>
<tr>
<td>ARTCC</td>
<td>air route traffic control center</td>
</tr>
<tr>
<td>ARTS</td>
<td>Automated Radar Terminal System</td>
</tr>
<tr>
<td>ASCC</td>
<td>Army Service Component Command</td>
</tr>
<tr>
<td>ASR</td>
<td>airport surveillance radar</td>
</tr>
<tr>
<td>ATC</td>
<td>air traffic control</td>
</tr>
<tr>
<td>ATCME</td>
<td>air traffic controller medical examination</td>
</tr>
<tr>
<td>ATCRBS</td>
<td>Air Traffic Control Radar Beacon System</td>
</tr>
<tr>
<td>ATCS</td>
<td>air traffic control specialist</td>
</tr>
<tr>
<td>ATCT</td>
<td>air traffic control tower</td>
</tr>
<tr>
<td>ATIS</td>
<td>automatic terminal information service</td>
</tr>
<tr>
<td>ATNAVICS</td>
<td>Air Traffic Navigation, Integration, and Coordination System</td>
</tr>
<tr>
<td>ATS</td>
<td>air traffic services</td>
</tr>
<tr>
<td>ATSCOM</td>
<td>Air Traffic Services Command</td>
</tr>
<tr>
<td>ATSMCP</td>
<td>Air Traffic Services Maintenance Certification Program</td>
</tr>
<tr>
<td>ATTP</td>
<td>air traffic training program</td>
</tr>
<tr>
<td>CAB</td>
<td>combat aviation brigade</td>
</tr>
<tr>
<td>CARDA</td>
<td>continental United States airborne reconnaissance for damage assessment</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulation</td>
</tr>
<tr>
<td>CIC</td>
<td>controller-in-charge</td>
</tr>
<tr>
<td>COA</td>
<td>certificate of authorization</td>
</tr>
<tr>
<td>CTL</td>
<td>commander’s task list</td>
</tr>
<tr>
<td>CTO</td>
<td>control tower operator</td>
</tr>
<tr>
<td>DA</td>
<td>Department of the Army</td>
</tr>
<tr>
<td>Acronym</td>
<td>Definition</td>
</tr>
<tr>
<td>---------</td>
<td>------------</td>
</tr>
<tr>
<td>DAC</td>
<td>Department of the Army civilian</td>
</tr>
<tr>
<td>DALR</td>
<td>digital audio legal recorder</td>
</tr>
<tr>
<td>DAR</td>
<td>Department of the Army representative</td>
</tr>
<tr>
<td>D-ATIS</td>
<td>digital automatic terminal information service</td>
</tr>
<tr>
<td>DBRITE</td>
<td>digital bright radar indicator tower equipment</td>
</tr>
<tr>
<td>DH</td>
<td>decision height</td>
</tr>
<tr>
<td>DME</td>
<td>distance measuring equipment</td>
</tr>
<tr>
<td>DND</td>
<td>Department of National Defense</td>
</tr>
<tr>
<td>DOD</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>DP</td>
<td>departure procedure</td>
</tr>
<tr>
<td>DRU</td>
<td>direct reporting unit</td>
</tr>
<tr>
<td>DSN</td>
<td>defense switch network</td>
</tr>
<tr>
<td>DTM</td>
<td>digital terrain map</td>
</tr>
<tr>
<td>DVD</td>
<td>digital video device</td>
</tr>
<tr>
<td>EATPL</td>
<td>emergency air traffic priority list</td>
</tr>
<tr>
<td>EML</td>
<td>emergency manning level</td>
</tr>
<tr>
<td>ESCAT</td>
<td>emergency security control of air traffic</td>
</tr>
<tr>
<td>ETS</td>
<td>end term of service</td>
</tr>
<tr>
<td>FAA</td>
<td>Federal Aviation Administration</td>
</tr>
<tr>
<td>FAAO</td>
<td>Federal Aviation Administration Order</td>
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<tr>
<td>FAF</td>
<td>final approach fix</td>
</tr>
<tr>
<td>FARP</td>
<td>forward arming and refueling point</td>
</tr>
<tr>
<td>FD</td>
<td>flight data</td>
</tr>
<tr>
<td>FF</td>
<td>flight following</td>
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<tr>
<td>FFD</td>
<td>full flying duties</td>
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<tr>
<td>FLIP</td>
<td>flight information publication</td>
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<tr>
<td>FM</td>
<td>field manual</td>
</tr>
<tr>
<td>FRN</td>
<td>Federal Communication Commission Registration Number</td>
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<tr>
<td>FTM</td>
<td>facility training manual</td>
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<td>FTP</td>
<td>facility training program</td>
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<td>FTX</td>
<td>field training exercise</td>
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<td>G-3</td>
<td>Assistant Chief of Staff, Operations and Plans</td>
</tr>
<tr>
<td>GC</td>
<td>ground control</td>
</tr>
<tr>
<td>GCA</td>
<td>ground-controlled approach</td>
</tr>
<tr>
<td>GPA</td>
<td>glide path angle</td>
</tr>
<tr>
<td>GPS</td>
<td>global positioning system</td>
</tr>
<tr>
<td>GS</td>
<td>general schedule</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IFR</td>
<td>instrument flight rules</td>
</tr>
<tr>
<td>ILS</td>
<td>Instrument Landing System</td>
</tr>
<tr>
<td>JAGIC</td>
<td>Joint Air Ground Integration Center</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>LAN</td>
<td>local area network</td>
</tr>
<tr>
<td>LC</td>
<td>local control</td>
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<tr>
<td>LCN</td>
<td>local control North</td>
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<tr>
<td>LCS</td>
<td>local control South</td>
</tr>
<tr>
<td>LOA</td>
<td>letter of agreement</td>
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<tr>
<td>LOP</td>
<td>letter of procedure</td>
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<tr>
<td>LZ</td>
<td>landing zone</td>
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<tr>
<td>MEDEVAC</td>
<td>medical evacuation</td>
</tr>
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<td>METAR</td>
<td>Aviation Routine Weather Report</td>
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<tr>
<td>MHz</td>
<td>megahertz</td>
</tr>
<tr>
<td>MOS</td>
<td>military occupational specialty</td>
</tr>
<tr>
<td>MOTS</td>
<td>Mobile Tower System</td>
</tr>
<tr>
<td>MSAW</td>
<td>minimum safe altitude warning</td>
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<tr>
<td>MVA</td>
<td>minimum vectoring altitude</td>
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<td>minimum vectoring altitude chart</td>
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<tr>
<td>MVAC</td>
<td>minimum vectoring altitude chart</td>
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<td>NAS</td>
<td>National Airspace System</td>
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<td>NATO</td>
<td>North Atlantic Treaty Organization</td>
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<td>NAVAID</td>
<td>navigational aid</td>
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<td>NGA</td>
<td>National Geospatial-Intelligence Agency</td>
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<tr>
<td>NOE</td>
<td>nap-of-the-earth</td>
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<tr>
<td>NORDO</td>
<td>no radio</td>
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<tr>
<td>NOTAM</td>
<td>notice to airmen</td>
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<td>NVD</td>
<td>night vision device</td>
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<tr>
<td>OJT</td>
<td>on-the-job training</td>
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<td>PAR</td>
<td>precision approach radar</td>
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<td>pilot report</td>
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<td>PMCS</td>
<td>preventive maintenance checks and services</td>
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<td>PQ</td>
<td>position qualified</td>
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<td>PSG</td>
<td>platoon sergeant</td>
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<td>RF</td>
<td>radio frequency</td>
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<td>RL</td>
<td>readiness level</td>
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<tr>
<td>RPI</td>
<td>runway point of intercept</td>
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<td>SD</td>
<td>special duty</td>
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<td>shift leader</td>
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<td>Standardization Agreement</td>
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<td>Standard Terminal Automation Replacement System</td>
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<td>STX</td>
<td>situational training exercise</td>
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<td>SVFR</td>
<td>special visual flight rules</td>
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<td>TACT</td>
<td>tactical aviation control team</td>
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<td>Definition</td>
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<td>tactical airspace integration system</td>
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<td>test, measurement, and diagnostic equipment</td>
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<td>training time extension</td>
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<td>TVO</td>
<td>tower visibility observation</td>
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<td>TWR</td>
<td>tower</td>
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<td>unified facilities criteriocode</td>
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<td>UHF</td>
<td>ultra high frequency</td>
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<td>USAACE</td>
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<td>United States Army Aeronautical Services Agency</td>
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<tr>
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<td>United States Army Aeronautical Services Detachment-Europe</td>
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<td>USAF</td>
<td>United States Air Force</td>
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<tr>
<td>USR</td>
<td>unit status report</td>
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<tr>
<td>UTC</td>
<td>coordinated universal time</td>
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<td>VASI</td>
<td>visual approach slope indicator</td>
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<td>visibility checkpoint chart</td>
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<tr>
<td>VFR</td>
<td>visual flight rule</td>
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<td>VHF</td>
<td>very high frequency</td>
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<td>very high frequency omnidirectional radio range</td>
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References

REQUIRED PUBLICATIONS

ADP 1-02, Terms and Military Symbols. 14 August 2018.
DoD Dictionary of Military and Associated Terms. July 2019

RELATED PUBLICATIONS

ARMY PUBLICATIONS

Unless otherwise indicated, Army publications are available online at https://armypubs.army.mil/.
AR 25-50, Preparing and Managing Correspondence, 17 May 2013.
AR 40-8, Temporary Flying Restrictions Due to Exogenous Factors Affecting Aircrew Efficiency, 22 March 2019.
AR 70-1, Army Acquisition Policy, 10 August 2018.
AR 95-30, Participation in a Military or Civil Aircraft Accident Safety Investigation, 8 July 2004.
AR 115-11, Geospatial Information and Services, 28 August 2014.
AR 190-51, Security of Unclassified Army Property (Sensitive and Nonsensitive), 30 September 1993.
AR 220-1, Army Unit Status Reporting and Force Registration-Consolidated Policies, 15 April 2010.
AR 570-4, Manpower Management, 8 February 2006.
AR 700-138, Army Logistics Readiness and Sustainability, 23 April 2018.
AR 710-2, Supply Policy Below the National Level, 28 March 2008.
AR 735-5, Property Accountability Policies, 9 November 2016.
AR 750-1, Army Materiel Maintenance Policy, 3 August 2017.
ATP 4-33, Maintenance Operations, 9 July 2019.
DA Pam 385-90, Army Aviation Accident Prevention Program, 28 August 2007.
DA Pam 611-21, Military Occupational Classification and Structure, 19 July 2018.


The following publication is available at [https://www.wbdg.org/ffc/dod/federal-military-specifications-standards](https://www.wbdg.org/ffc/dod/federal-military-specifications-standards).


TC 4-02.1, *First Aid*, 21 January 2016.


**AIR FORCE PUBLICATIONS**

The following publication is available at [https://www.e-publishing.af.mil](https://www.e-publishing.af.mil).


**FEDERAL AVIATION ADMINISTRATION PUBLICATIONS**


FAAO 6000.6, Interagency Ground Inspection Guidance, 5 August 2005.
FAAO 6310.9, Maintenance of Airport Surveillance Radar (ASR-7, ASR-7E5, ASR-7F, and ASR-8), 3 December 1990.
FAAO 6740.2, Maintenance of Nondirectional Beacons (NDB), 6 March 1989.
FAAO 8020.11, Aircraft Accident and Incident Notification, Investigation, and Reporting, 10 May 2018.
FAAO 8240.41, Flight Inspection/Air Traffic On-Site Coordination Requirements, 1 October 2005.
FAAO 8260.3, United States Standard for Terminal Instrument Procedures (TERPS), 16 February 2018.
FAAO JO 6360.25, Maintenance of Wide-Area Multilateration System (WAM), 6 August 2012.
FAAO JO 6350.21, Maintenance of Common Digitizer -2 Equipment, 14 September 1994.
FAAO JO 6650.4, Maintenance of Voice-Frequency Signaling System (VFSS) Equipment, 1 August 2013.
FAAO JO 6670.16, Maintenance of Digital Audio Legal Recorder Types 1, 2, and N (DALR1/DALR2/DALR-N), 1 December 2016.
References

FAAO JO 6400.1, Maintenance of Air Traffic Control Communication Services. 6 March 2014.
FAAO JO 7110.65, Air Traffic Control, 20 June 2019.
FAAO JO 7210.3, Facility Operation and Administration, 20 June 2019.
FAAO JO 7340.2, Contractions, 3 June 2019.
FAAO JO 7350.9, Location Identifiers, 11 June 2019.
FAAO JO 7610.4, Special Operations, 5 July 2019.
FAAO JO 7900.5, Surface Weather Observing, 20 December 2016.
FAAO JO 8020.16, Air Traffic Organization Aircraft Accident and Aircraft Incident Notification, Investigation, and Reporting, 14 December 2018.
The following publication is available at https://www.adx.faa.gov/.

OTHER PUBLICATIONS
The following publications are available at https://icao.int.
ICAO 7910, Location Identifiers, December 2017.
The following publications are available at https://gov.ecfr.io/cgi-bin/ECFR.
Title 5 Code of Federal Regulations Section 339.202, Medical Standards.
Title 14 Code of Federal Regulations Part 73, Special Use Airspace.
The following publications are available at https://wbdg.org.
UFC 4-133-01, Air Traffic Control and Air Operations Facilities, 19 April 2016.

PRESCRIBED FORMS
The following forms are available at https://armypubs.army.mil/.
DA Form 3479, Training and Proficiency Record - Air Traffic Controller (LRA).
DA Form 3479-1, Trainee/Controller Evaluation.
DA Form 3479-6, ATC Facility and Personnel Status Report.
DA Form 3479-9, ATC Maintenance Personnel Certification and Related Training Record.
DA Form 3479-10, Responsibility Assignment.
DA Form 3479-11, Commander’s Task List (ATS) AN/MSQ-135 Mobile Tower System (MOTS) Operator.
DA Form 3479-12, Commander’s Task List (ATS) AN/TPN-31 Air Traffic Navigation, Integration and Coordination System (ATNAVICS) Operator.
DA Form 3479-13, Commander’s Task List (ATS) AN/TSQ-221 Tactical Airspace Integration System (TAIS) Operator.
DA Form 3479-14, Commander’s Task List (ATS) ATS Maintainer.
DA Form 3479-15, Commander’s Task List (ATS) AN/TSQ-198 Tactical Terminal Control System (TTCS) Operator.
DA Form 3501, GCA Operations Log.
DA Form 3501-1, Precision Approach Radar (GCA) Data.
DA Form 3501-2, Flyability Check Evaluation.
DA Form 3502, Daily Report of Air Traffic Control Facility.
DA Form 3503, Air Traffic Control Position Log.
DA Form 7870, Minimum Altitude/Minimum Vectoring Altitude Obstruction Documentation.

REFERENCED FORMS

Unless otherwise indicated, DA Forms are available on the APD web site: https://armypubs.army.mil/.
DA Form 2028, Recommended Changes to Publications and Blank Forms.
DA Form 2696, Operational Hazard Report.
The following form is available at https://www.esd.whs.mil/directives/forms/.
DD Form 2992, Medical Recommendation for Flying or Special Operational Duty.
The following forms are available at http://www.faa.gov/.
FAA Form 6030-1, Facility Maintenance Log 1.
FAA Form 7460-2, Supplemental Notice.
FAA Form 8260-7, Special Instrument Approach Procedures.
The following forms are available at the following address: Federal Aviation Administration, 6500 S. Macarthur Boulevard, Oklahoma City, OK 73169.
FAA Form 7220-1, Air Traffic Control Specialists Certificate. (Controlled item, not available for distribution.)
FAA Form 7230-7.2, Flight Progress Strip: Terminal Continuous Without Center Perforation.
FAA Form 7230-8, Flight Progress Strip: Terminal-Cut.
FAA Form 7230-21, Flight Progress Strip: FSS.
FAA Form 8000-5, Certificate of Designation. (Controlled item, not available for distribution.)

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Army Aviation Association of America (AAAA) Homepage: http://www.quad-a.org/
AKO/Army Homepage: http://www.army.mil/
References

Directorate Home Page Association of the United States Army: 
http://www.ausa.org/Pages/default.aspx

Center for Army Lessons: https://usacac.army.mil/organizations/mccoe/call

Defend America-United States Defense Dept War on Terror 02-13200400-Edition 3: 
http://www.defense.gov/


TRADOC Homepage: http://www.tradoc.army.mil/

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JAMES C. MCCONVILLE
General, United States Army
Chief of Staff

Official:

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