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Space, Missile, Command, and Control

**AIRSPACE MANAGEMENT AND RUNWAY
SUPERVISORY UNIT (RSU) OPERATIONS**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFD 13-2, *Air Traffic Control, Airspace, Airfield, and Range Management*. It prescribes requirements for airspace management and runway supervisory unit (RSU) control of air traffic by AETC training wings, flying training wings, and flying squadrons. It complements related material in Federal Aviation Administration (FAA) regulations and handbooks and applicable Air Force directives. Suggestions or recommendations to improve airspace management or this instruction are encouraged. Submit these suggestions to HQ AETC/XOSA, 1 F Street Suite 2, Randolph AFB, TX 78150-4325.

See [Attachment 1](#) for a glossary of references, abbreviations, acronyms, and terms.

SUMMARY OF REVISIONS

Changes XOST to XOSA, 1st Flight Screening Squadron to 3d Flying Training Squadron, T-41 to T-3, and Operations Support Division to Flying Support Division; deletes RSU requirement for aircraft under tower control ([Table 2.1.](#)); changes reporting of RSU traffic count to quarterly ([Paragraph 2.3.7.](#)); requires each flight to have at least one RSU controller assigned ([Paragraph 2.11.](#)); deletes observer experience requirement for T-1 monitors ([Paragraph 2.12.1.1.](#)); clarifies monitor candidate observation of T-1 overheads ([Paragraph 2.18.1.1.](#)); deletes requirement to control overhead traffic for T-1 monitor candi-

dates (Paragraph 2.18.1.2.); deletes reference to AFR 56-17 (Paragraph 7.1); deletes chapter on navigation flights; and deletes reference to precautionary aircraft (Paragraph A5.4.3.10.).

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Chapter 1

GENERAL INFORMATION AND RESPONSIBILITIES

1.1. Air Traffic Control (ATC) Services:

1.1.1. Air Force and command policy is to participate in the National Airspace System (NAS) by using available ATC services to the maximum extent practicable.

NOTE: Aircrews accomplishing mission essential visual flight rules (VFR) arrivals are not required to participate in class B or terminal radar service area (TRSA) service and will normally cancel instrument flight rules (IFR) within approximately 30 miles of destination airfield. The pilot should contact approach control and state "negative radar service." Participation while VFR in Class B and C airspace is mandatory, and aircrews must comply ATC instructions.

1.1.2. Regardless of the degree of ATC service provided, the see and avoid concept remains the primary means of collision avoidance when operating VFR or IFR clear of clouds, and it is incumbent on the aircrew to judiciously exercise clearing responsibilities. IFR service provides separation only from other known IFR aircraft. Advisories on other observed traffic may be provided when work load permits, However, performance of higher priority duties may prevent conveyance of this information.

1.2. Responsibilities of AETC Flying Organizations:

1.2.1. Designate an activity, normally within the operations support squadron, to act as focal point for airspace management actions. This activity will manage the assignment and use of airspace to develop local flying procedures and coordinate operations with associated ATC facilities. Airspace officers participate in the base air traffic control board and periodically visit the associated air route traffic control center and terminal approach facility.

1.2.2. Coordinate changes to existing flightpaths and (or) altitudes with the base air Installation compatible use zone (AICUZ) monitor. As a general guide, coordinate on procedural changes within 10 miles of the base and below 3,000 feet above ground level (AGL) so aircraft noise contours can be updated as necessary.

1.2.3. Initiate the environmental impact analysis process (EIAP) on all new and proposed changes to existing flight paths and (or) altitudes by submitting AF Form 813, **Request for Environmental Impact Analysis**. The EIAP must be completed before implementing the new procedure and prior to submitting special use airspace or military training route (MTR) proposals.

1.2.4. Coordinate with the Chief, Air Traffic Control Operations (CATCO), and ATC facilities to ensure timely resolution of problem areas.

1.2.5. Arrange for the use of outlying instrument approach facilities, as required. If training is conducted on a frequent and (or) volume basis, negotiate a letter of agreement (LOA) to cover such operations.

1.2.6. Publish local flying directives that include operating procedures agreed upon by associated ATC facilities and other agencies as appropriate. Before implementation, coordinate those portions (changes, revisions, supplements, etc.) involving military ATC facilities through the CATCO and HQ AETC/XOSF. Also develop an in-flight guide for undergraduate flying training (UFT) aircraft

(except T-43s) which includes abbreviated and diagrammed information on local operating procedures. Ensure local flying publications contain sufficient guidance on the following (as applicable):

- 1.2.6.1. Airfield diagram including hot brake areas.
 - 1.2.6.2. Terminal and local area procedures.
 - 1.2.6.3. Traffic pattern operations.
 - 1.2.6.4. Auxiliary field procedures.
 - 1.2.6.5. Night flying procedures.
 - 1.2.6.6. Navigation procedures. (**Attachment 2** contains the minimum required items for UFT aircraft.)
 - 1.2.6.7. Procedures for radar, communication, or navigation aid (NAVAID) outages.
 - 1.2.6.8. Radio failure procedures.
 - 1.2.6.9. Minimum fuel for single runway operations and for departing the auxiliary and outlying instrument facilities.
 - 1.2.6.10. Handling of aircraft emergencies and minimum fuels.
 - 1.2.6.11. Weather reporting and recall procedures.
 - 1.2.6.12. Aircraft diversion.
 - 1.2.6.13. Reporting near midair collisions.
 - 1.2.6.14. Briefing guide for flyovers and static displays according to AFI 11-209, *Air Force Participation in Aerial Events* (formerly AFR 60-18/AETC Sup 1).
- 1.2.7. Provide a copy of local flying directives and in-flight guides to each assigned aircrew and other base activities, as appropriate. Also send copies and any changes or revisions to HQ AETC/XOS, 19 AF/DOV, and other AETC units with similar missions.
- 1.2.8. Complete an annual review of all LOAs, operations letters, memoranda of understanding, and base flying instructions to ensure currency and validity. Document the review in the ATC board meeting minutes.
- 1.2.9. Complete airborne route surveys of locally owned MTRs annually. The survey method is left to the wings, but will not be accomplished on a student sortie. Note all structures that could pose a threat to operations and transfer them to the wing airspace management master charts. Notify wing pilots of the location of structures not previously charted that pose a threat to operations.

1.3. Restricted Area and MOA Utilization Reports (RCS: 1412-DOT-AN). Submit an annual restricted area and (or) MOA utilization report according to AFI 13-201, US Air Force Airspace Management (formerly AFR 55-2). Retain this report and information on special use airspace and MTR denials and restrictions for 2 years according to AFMAN 37-139, *Disposition of Records - Standards* (formerly AFR 4-20, volume 2).

NOTE: Emergency status code "C-3 Delayed" is assigned to these reports.

1.4. USAF Airspace Management Course. Normally, each base will receive only one slot every 12 months. Request slots from HQ AETC/XOSA.

1.5. Waiver Requests. Send requests for waiver to this instruction through channels to HQ AETC/XOSA with supporting justification.

Chapter 2

RUNWAY SUPERVISORY UNIT (RSU) AND RUNWAY CONTROL STRUCTURE (RCS) OPERATIONS

2.1. Terms. RSU and RCS are used synonymously in this instruction.

2.2. Requirements. Guidance cannot cover all situations so supervisors are expected to use sound judgment in determining the requirement for an RSU. The intent is to provide RSU supervision for the majority of local UFT, flight screening program (FSP), and pilot instructor training (PIT) flying operations, particularly multiple landings during periods of student training, and solo student and team operations. See [Table 2.1.](#) for a list of RSU requirements.

2.3. Flying Training Wing Responsibilities:

2.3.1. Locate RSUs opposite the touchdown zone and, when possible, on the side of the runway opposite the direction of the break. Clearance to the edge of the active runway must conform to the clearance criteria in AFI 32-1026, *Planning and Design of Airfields* (formerly AFR 86-5) (**NOTE:** AFI 32-1026 is projected to be AFJM 32-8008, volume 3, *Airfield and Heliport Planning and Design Criteria*.)

Table 2.1. RSU Requirements.

I T E M	Type of Operations	Class A Required	Class B Required	No RSU Required
1	Student flying at home or auxiliary field in an RSU controlled pattern	X		
2	Student solo/team takeoffs/landings (note 1)		X	
3	Homefield dual student sorties under tower control (note 2)		X	
4	Sheppard PIT and UFT Clinton-Sherman student operations		X	
5	Randolph operations (note 3)			X
6	Student sorties at other than home/aux fields			X
7	Nonstudent sorties			X
8	One full stop landing by aircraft used to transport RSU crew to auxiliary field			X

NOTES:

1. Student solo and team touch-and-go landings require a Class A RSU.
2. All student sorties at the homefield will be conducted with an RSU in place (**EXCEPTION:** Dual cross-country or out-and-back returns).

3. Seguin operations require a Class A RSU.

2.3.2. Limit RSU occupancy as follows:

2.3.2.1. The large permanent RCS is authorized a maximum of 10 individuals inside at one time.

2.3.2.2. The small mobile RSU is authorized a maximum of 6 individuals inside at one time.

2.3.3. Keep a visitor's log to record RSU visitations.

2.3.4. Ensure the controller is seated at the end of the unit closest to the runway approach end and the observer is seated at the opposite end.

2.3.5. For Class A RSU operations:

2.3.5.1. Provide RSU control to AETC aircraft only. This does not prevent an RSU controller from offering advice to other aircraft to prevent an accident. Relay advisories through the tower if time and conditions permit.

2.3.5.2. Establish procedures defining transfer of runway and ATC responsibility from one facility to another. Overlap of control is prohibited. Granting the tower access to an RSU-controlled runway for a transient takeoff or landing does not require transfer of runway control.

2.3.5.3. Establish procedures to ensure RSU controlled traffic is separated from arriving and departing transient aircraft. AETC like-type aircraft are not considered transient. In addition, the RSU controller will not:

- Clear an aircraft for a low approach directly over or less than 500 feet AGL with respect to a transient aircraft departing, landing, or taxiing on the runway.
- Authorize a landing aircraft to cross the threshold until a preceding transient aircraft clears the runway.

2.3.5.4. Establish procedures to relinquish RSU control of a runway to the tower when weather conditions prevent VFR traffic patterns.

2.3.6. Establish procedures to use if RSU or control tower communications fail.

2.3.7. Maintain a separate traffic count for each Class A RSU-controlled runway. Count one movement for each takeoff or landing. A touch-and-go or low approach would be two counts. Aircraft, while in formation, are counted as one aircraft. Each RSU training officer (RSUTO) will ensure an accurate quarterly traffic count for each RSU operation is furnished to the wing airspace office no later than 5 workdays after the end of each quarter. Traffic counts should be retained in the airspace office files for 2 years.

2.3.8. Use AETC Form 355, **Runway Control Structure(RCS)/Runway Supervisory Unit (RSU) Log**, to record flight following information and to document meaningful comments. Retain completed AETC Forms 355 for 1 year.

2.3.9. Use AETC Form 360, **Runway Control Structure(RCS)/Runway Supervisory Unit (RSU) Discrepancy Log**, to document all RSU discrepancies. RSU crews will notify the appropriate agency and obtain a job control number and estimated job completion time.

2.3.9.1. For onsite repairs, the person doing the repairs will complete the appropriate portions of AETC Form 360 showing actions taken. He or she will also notify the RSU facility officer.

2.3.9.2. Except for repeat intermittent operations, persons correcting and "ops-checking" discrepancies at remote locations (telephone switchboard, etc.) need only notify the RSU facility officer of the corrective action taken.

2.3.9.3. If no cause can be determined, conclude the corrective action block with "Cause not found." Repeat intermittent operation write-ups with no determined cause will require a thorough inspection of all affected system components.

2.3.9.4. Maintenance personnel will document removal and replacement of RSU communications equipment on AETC Form 360, including serial numbers if applicable.

2.3.9.5. RSU crews will not complete corrective action portions of AETC Form 360.

2.4. Supervised Solo or Team Out and Backs. A supervisor (assistant flight commander or above) and a fully qualified instructor pilot (IP) go to the intended landing airfield. The supervisor goes to the control tower with proper publications to monitor student landings and departures and advise the air traffic controller in emergency situations. Personnel performing this duty must not interfere with control tower operations. A control tower monitor is not required at AETC bases if an RSU for the type aircraft involved is operating.

2.5. Supervisory Visits. Visits to RSUs by wing and squadron supervisors must be of sufficient frequency and length to demonstrate full command support and close supervision of the RSU program. Supervisors making visits should monitor RSU crew performance, compliance with traffic pattern procedures, and radio discipline. In addition, they should ensure the RSU is being properly maintained and operated. Use AETC Form 1163, **RCS/RSU Supervisor's Critique**, to record observations. After AETC Forms 1163 have been circulated to appropriate supervisors, they will be retained (for active RSU personnel). At bases where traffic patterns are controlled by the tower, tower visits may be intermixed with RSU visits to fulfill the intent of this paragraph.

2.6. Equipment and Maintenance. The operations group commander will designate an RSU facility officer who will:

2.6.1. Ensure the following equipment is in operational condition at each RSU site, as applicable:

2.6.1.1. Radios. Radios must provide transmit and receive capability on local operating frequencies. Guard transmit and receive capability is also required. Although an RSU may open or remain open with only one operational radio and guard channel, this should be considered a temporary configuration to allow operation while the inoperative radio is expeditiously repaired. Each RSU is equipped with an RSU upgrade position which will override transmissions from the trainee's position. RSU frequency recording is required. Priority is established in AFI 13-203, *Air Traffic Control* (formerly AFR 60-5/AETC Sup 1).

NOTE: FSP is exempt from guard frequency and recording requirements.

2.6.1.2. Telephones. Each unit should have at least minimum of one Class C telephone line and two telephones. (**EXCEPTIONS:** Clinton-Sherman, Terry Co, Hondo, and US Air Force Academy (USAFA) units should each have one telephone.)

2.6.1.3. Hotlines: (*Hondo is exempt.*) Ensure a sufficient number of hotlines are available to ensure direct contact with the following:

- Tower (auxiliary fields are exempt).
- Ground control approach (GCA) or terminal radar facility at RSUs serving runways where precision approach radar or airport surveillance radar (ASR) approaches are flown (except emergency-only ASRs).
- Supervisor of flying (SOF).
- Crash or rescue at auxiliary fields.
- Other RSUs serving parallel runways as necessary.
- Other agencies as required.

NOTE: A hotline is preferred method from auxiliary field RSUs. However, "executive override" on an auxiliary field RSU Class C telephone may be used when hotline installation is not available.

2.6.1.4. Flare pistols. (*Hondo and USAFA are exempt.*) At least two flare pistols and a minimum of six flare cartridges should be available at the start of flying.

2.6.1.5. A light gun.

2.6.1.6. Binoculars.

2.6.1.7. Wind-measuring equipment. Temporary operation without this equipment is acceptable when alternate procedures are established to obtain accurate wind information or when winds clearly do not affect the flying operation.

2.6.1.8. Evacuation alarms. (*Hondo and USAFA are exempt.*) If required by AFI 13-203 (formerly AFR 60-5), a radar or NAVAIDs emergency warning and evacuation alarm system actuating capability should be available.

2.6.1.9. An air-conditioner and heater capable of maintaining temperatures within the RSU between 70° F and 80° F.

2.6.1.10. An auxiliary power unit (APU) capable of supporting essential RSU equipment (including air conditioner) during commercial power outages (if deemed necessary by the operations group commander). (*Hondo and USAFA are exempt.*) All RSUs will be equipped to accept APU hookup. At RSUs where APUs are in place, the auto-start feature should be enabled. APUs are not required to be repositioned at RSUs provided the operations group commander and base civil engineer jointly concur that predicted reliability of commercial power is sufficient to satisfy RSU operational requirements.

2.6.2. Conduct a monthly inspection of the condition and operation of the RSU and component equipment using a checklist incorporating the items in [Attachment 3](#).

2.6.3. Use AETC Form 361, **Runway Control Structure (RCS)/Runway Supervisory Unit (RSU) Discrepancy Tracking Log**, to track open discrepancies and ensure timely corrective action. Inform communications maintenance of any discrepancies that could cause undetected collateral damage to communications equipment, such as power failure or water leak. Retain AETC Forms 361 until all items are closed.

2.6.4. Inform the operations group commander of uncleared RSU discrepancies at the beginning of each flying week.

2.6.5. Maintain a file of completed AETC Forms 360 for each RSU. Retain the file for a minimum of 1 year from the date corrective action is completed. Forms should be retained longer than 1 year if required to adequately track trend items.

2.6.6. Maintain a permanent record for each RSU, using the AFTO Form 95, **Significant Historical Data**. This record contains all major modifications or repairs to the structure and component equipment. No modifications will be made to standard RSU design and equipment without the approval of HQ AETC/XOSA. HQ AETC/SCLM reviews requests for modification of communications equipment.

2.6.7. Designate an officer to ensure current copies of the following pertinent documents are available for use in active RSUs: flying directives and operating manuals, aircraft flight manuals, quick-reaction checklists, and a local area map with prominent landmarks and emergency fields marked.

2.7. Auxiliary Power Unit (APU) Qualification and Certification. RSU training and standardization officers (RSUTSO) establish a program with local power production personnel, to ensure qualification and certification of RSU controllers, monitors, and observers in APU operation. (*Randolph and bases not using APUs are exempt.*) Include APU procedures on performance evaluations and ensure RSU personnel periodically review APU procedures.

2.8. Handling and Storage Procedures for Flares and Flare Pistols:

2.8.1. RSU personnel who handle flares and flare pistols must complete initial and recurring training according to AFMAN 91-201, *Explosive Safety Standard* (formerly AFR 127-100/AETC Sup 1). Personnel must also comply with the following procedures:

2.8.1.1. Load flare pistols only after installed in flare port and unload them before removal from flare port.

2.8.1.2. If a dry firing check is required, install the flare pistol in the flare port before firing.

2.8.1.3. Leave breeches open when flare pistols are not secured in flare port.

2.8.1.4. If a flare fails to fire, make two more attempts to fire. If the flare still fails to fire, use another pistol. Wait at least 30 seconds after a misfire. Then open the breech and unload the pistol. Examine the flare for primer indentation by the firing pin.

- If indentation exists, reload the pistol with a new flare and place the misfired flare into a container marked "Misfired Flares." Place the container outside the RSU.
- If no indentation exists, remove the pistol from service and have it checked by qualified personnel.
- Bases will establish local procedures for disposal of the misfired flares as well as inspection and maintenance of the pistols and their mounts.

2.8.2. Flares and flare pistols are classified as munitions and firearms. Personnel handling flares and flare pistols must apply the special security and storage procedures of AFI 31-209, *The Air Force Resource Protection Program* (formerly AFR 125-37/AETC Sup 1), and AFMAN 91-201 (formerly AFR 127-100/AETC Sup 1).

2.8.3. Each controller and monitor trainee may practice firing one flare during training.

2.9. Staffing. Staff RSUs according to the function they perform as shown in [Table 2.2](#).

Table 2.2. RSU Staffing.

I T E M	A	B	C
	Class	Homefield	Auxiliary
Class A			
1	Day	Controller, observer, spotter, and recorder (note)	Controller and observer
2	Night	Controller, observer, and recorder	NA
Class B			
3	Day/Night	Monitor (as a minimum)	Monitor

NOTE: Hondo and USAFA RSUs do not require a spotter.

2.10. Restrictions:

2.10.1. RSU crewmembers who are medically excused from flying duty or grounded may not perform RSU duty without written clearance from the flight surgeon. (Contractor personnel at Hondo require quality assurance evaluator (QAE) approval.)

2.10.2. RSU crewmembers are not permitted to perform RSU duty if it will extend their crew duty period beyond 12 hours. See AFI 11-401, *Flight Management* (formerly AFR 60-1 AETC Sup 1), for additional duty restrictions.

2.11. Controllers. Select the minimum number of controllers (including upgrade controllers) necessary to satisfy mission requirements. Controllers should be evenly distributed throughout the squadrons. Each flight should normally have at least one assigned controller. The maximum number of civilian controllers at Hondo is 18. Military personnel may be qualified as controllers at Hondo at the discretion of the Commander, 3d Flying Training Squadron.

2.11.1. Qualifications:

2.11.1.1. Select RSU controllers from the most highly qualified and current instructor pilots (IP) with at least 6 months of IP experience in current aircraft (for Hondo, see the current site service contract) and a minimum of 90 days experience as an RSU observer or monitor. (*Randolph is exempt.*) To be selected for controller training, a candidate must have approval of the squadron commander (*QAE at Hondo*). After completion of training or initial evaluation, but before performing unsupervised controller duties, the operations group commander or designated representative must sign the AETC Form 309, **RCS/RSU Crewmember Evaluation and Qualification Certificate**.

2.11.1.2. Designate, in writing, upgrade RSU controllers who are the most highly qualified to perform upgrade duties.

2.11.2. **Duties.** The RSU controller is responsible for the safe and efficient control of all aircraft under the RSU's jurisdiction, including air discipline, pattern conformity, and compliance with established procedures. The controller must take positive action to prevent potentially unsafe situations which could result from tight downwinds, slow finals, etc. Most important is the controller's responsibility for solo students. As a minimum, this responsibility includes the requirement for the controller or monitor to be aware of which solos in the pattern are in the Commander's Awareness Program (CAP). The controller is also responsible for the performance of individuals assigned to the RSU to assist in controlling or monitoring traffic. RSU controllers must also:

2.11.2.1. Brief the observer, spotter, and recorder on their duties before each tour.

2.11.2.2. Apply preventive traffic control procedures. Standard RSU radio phraseology is in [Attachment 4](#).

2.11.2.3. Advise the supervisor of flying (SOF) if weather observed from the RSU is not compatible with the flying status.

2.11.2.4. Take immediate action, in coordination with the SOF, when unforecast weather is observed by RSU personnel or reported by an aircrew.

2.11.2.5. To facilitate safe and efficient pattern operations, announce landing direction, wake turbulence advisories, and landing configuration as appropriate. Announce wind conditions to aircrews upon initial entry into the pattern.

2.11.2.6. Transmit advisories on the location and flightpath of any large influx of birds in the vicinity of the airfield, activities of other aircraft that may affect the traffic pattern, and any other conditions which may affect safety of operations.

2.11.2.7. Ensure aircraft-arresting barriers are in proper position before clearing aircraft for takeoff or landing.

2.11.2.8. Ensure each aircraft is visually checked for proper configuration before takeoff or landing.

2.11.2.9. Report deviations from established procedures.

2.11.2.10. Initiate a preliminary communications search when a single-ship local student solo or team sortie has been airborne for 1 hour (1+30 for T-1A). Increase this time to 1+20 for other T-38 sorties, 1+25 for other T-37 sorties, 3+10 for other T-1A sorties, and 1+30 for T-3 sorties. If the preliminary communications search is unsuccessful, notify the SOF.

2.11.2.11. Exercise sound judgment when emergency situations arise and coordinate actions with the SOF and tower, time permitting. When an emergency aircraft in the VFR pattern requires airborne assistance, designate a dual aircraft with a formation-qualified IP aboard to fly as chase.

2.11.2.12. Review emergency procedures with emergency aircraft as necessary.

2.11.2.13. Notify base operations if an aircraft disturbs the down barrier in the approach end overrun.

2.11.2.14. Activate the emergency alarm system as required by AFI 13-203 (formerly AFR 60-5) unless this function is performed by the tower.

2.11.2.15. Not permit other duties to distract attention from their primary controller responsibilities. This does not prevent calling significant comments to the recorder.

2.12. Monitors. (*Hondo is exempt.*) Select the minimum number of monitors (including upgrade monitors) necessary to satisfy mission requirements.

2.12.1. Qualifications:

2.12.1.1. Select monitors from the most highly qualified and current IPs with at least 4 months of IP experience in current aircraft and a minimum of 45 days of experience as an RSU observer. (T-1 monitor candidates do not require observer experience.)

2.12.1.2. Designate, in writing, upgrade monitors who are most highly qualified to perform upgrade duties.

2.12.2. **Duties.** Duties include the requirements in paragraphs [2.11.2.9](#) through [2.11.2.13](#). In addition, duties include transmitting proper instructions to prevent potentially hazardous situations and using AETC Form 355 to record takeoff and landing times and to account for each aircraft.

NOTE: Monitors qualified in one type of aircraft may monitor initial takeoffs and full-stop landings performed by another type aircraft or touch-and-go landings by another type of dual aircraft.

2.13. Observers. Select the minimum number of observers, including upgrade observers, necessary to satisfy mission requirements.

2.13.1. Qualifications:

2.13.1.1. **UFT.** IP current and qualified in the aircraft being controlled with a minimum of three months of experience as an instructor. **EXCEPTION:** Sheppard instructors must have a minimum of 1 month of experience as an instructor during their current tour.

2.13.1.2. **Randolph PIT.** Rated pilot current in the aircraft being observed.

2.13.1.3. **Flight Screening Program (FSP).** Civilian contract or qualified T-3 IP.

2.13.1.4. **Upgrade Observers.** Upgrade observers are the most highly qualified observers and are designated in writing to perform upgrade duties. **EXCEPTION:** Randolph PIT upgrade observers need not be designated in writing.

2.13.2. Duties:

2.13.2.1. Assist the controller as necessary.

2.13.2.2. Observe landing rolls, that part of the traffic pattern from touchdown zone through the first turn out of traffic, pitchouts, straight through initials, and closed patterns. Give special attention to the departure end of runway and turns to crosswind where proper pattern spacing is obtained. If necessary to prioritize these duties, focus attention on airborne aircraft rather than aircraft on the ground.

2.13.2.3. Inform the controller of any observed traffic pattern conflict. If the observer detects a dangerous situation and time is insufficient to consult with the controller, transmit appropriate instructions to correct the situation.

2.13.2.4. Inform the controller of deviations from established procedures.

2.14. Recorders:

2.14.1. **Qualifications.** Must be an IP, a student undergoing training or awaiting UFT, or a recent UFT graduate.

2.14.2. Duties:

2.14.2.1. Assist the controller or monitor as necessary.

2.14.2.2. Use AETC Form 355 to record takeoff times, landing times, and appropriate comments and to account for aircraft.

2.14.2.3. Inform the controller when aircraft exceed the time limits of paragraph [2.11.2.10](#).

2.15. Spotters:

2.15.1. **Qualifications.** Must be an IP, a postsolo UFT student undergoing training in the aircraft being controlled, or a recent UFT graduate.

2.15.2. Duties:

2.15.2.1. Check aircraft for proper configuration before takeoff and landing. Immediately notify the controller of irregularities.

2.15.2.2. Monitor aircraft in final turn and inform the controller of deviations (overshoots, higher or lower than normal final turns, etc.).

2.16. Standardization and Evaluation:

2.16.1. The operations group commander is responsible for oversight of the RSU program.

2.16.2. An RSUTSO and an RSUTO will be appointed for each aircraft. The RSUTSO is responsible for maintaining the RSU program. RSUTSOs and RSUTOs must be qualified RSU upgrade controllers with at least 6 months of controller experience.

2.16.3. At Hondo, the contractor is responsible for the overall RSU program; however, the QAE retains final authority on matters pertaining to performance standards of RSU crewmembers. The RSUTSO and RSUTO must be qualified controllers and are appointed by the contractor. In addition, the Commander, 3d Flying Training Squadron, will appoint a military RSUTSO to help monitor the contractor's RSU program.

2.16.4. The RSUTO is responsible for maintaining upgrade training folders and records on controller, monitor, and observer currency. Additionally, the RSUTO is responsible for ensuring supervisors and aircrews are informed of information derived from AETC Forms 355.

2.16.5. RSUTSOs hold RSU standardization meetings as directed by the operations group commander. Among other subjects, a discussion of trend analyses and situation emergencies should be included. All RSU-qualified crewmembers will attend the meeting. (EXCEPTION: Randolph PIT trainees are not required to attend.) Before performing RSU duty, absent controllers, monitors, and observers must be briefed by the RSUTSO or RSUTO or read and initial the meeting minutes.

2.16.6. RSUTSOs or RSUTOs conduct performance evaluations of each trainee and controller. Establish the annual evaluation zone from the 12th through the 17th month from the initial or previous evaluation. The examinee must demonstrate the ability to perform controller duties and full knowledge of applicable directives, aircraft performance characteristics, operating limitations, and emergency procedures.

2.16.7. Each RSUTSO will conduct no-notice evaluations as necessary to ensure the quality of the controller force is maintained. The no-notice program has three parts: followup monitoring of individuals with previously identified deficiencies, evaluations associated with local unit evaluations, and a random sampling of the assigned RSU crew force, separate from local unit evaluations, to ensure quality and standardization. There is no quota system for the no-notice program. No-notice evaluations may count for the annual evaluation if all other annual evaluation requirements are completed within 30 calendar days of the no-notice evaluation. The new annual zone will be based on this evaluation.

2.16.8. Do not conduct controller, monitor, and observer training concurrently in the same RSU. **EXCEPTION:** In large, permanent RCSs where both the center monitor function and Class A control function are performed in the same unit, center monitor upgrade and VFR pattern controller or observer upgrade training may be conducted at the same time.

2.17. Controller Qualification Program:

2.17.1. RSUTSOs establish and supervise an RSU controller training program that includes the following:

2.17.1.1. Initial Upgrade Training. Conduct initial upgrade training according to [Attachment 5](#).

2.17.1.2. Requalification Training. Controller candidates who have been qualified as controllers within the preceding 5 years must complete an annual performance evaluation and syllabus requirements under the supervision of an upgrade controller. Proficiency advancement is authorized at the discretion of the operations group commander. The 560th Flying Training Squadron controller candidates who have been qualified as RSU controllers within the preceding year may be qualified after a minimum of three on-the-job training (OJT) tours if all syllabus items are completed. FSP controllers may be qualified after a minimum of three 1.5-hour OJT tours.

2.17.2. RSUTOs set up documentation for the program as follows:

2.17.2.1. Maintain a folder for each controller trainee that includes:

- A letter signed by the squadron commander authorizing the trainee to perform controller duties. (*Hondo is exempt.*)
- An AETC Form 393, **RCS/RSU Controller Record of Training**, to record items accomplished during OJT tours. Add items and procedures peculiar to the local area on the bottom or back of the form or on a supplemental sheet. Instead of the AETC Form 393, Hondo only needs to keep the syllabus of instruction and record of progress.
- An AETC Form 803A, **Student Activity Record**, to record comments on the trainee's progress after each OJT tour. Limit comments to unusual occurrences, significant strengths and weaknesses, and any applicable restrictions.

2.17.2.2. Use AETC Form 309 to document controller performance evaluations. Rate performance as qualified or unqualified. Document outstanding performance with "exceptionally qualified." At the discretion of the Commander, 3d Flying Training Squadron, the military RSUTSO may sign the AETC Form 309 as the final approving authority.

2.17.3. After initial checkout, RSUTOs will keep a file on each controller. This file will include the squadron commander's authorization letter and completed AETC Forms 309, 393, and 803A. Keep the file as long as the individual is an active controller. Send this file with the individual if the controller is transferred intracommand.

2.18. Monitor Qualification Program (*Hondo is exempt.*)

2.18.1. RSUTSOs establish and supervise an RSU monitor training program, which includes the following:

2.18.1.1. One hour observing control of overhead training operations for each local aircraft in which the candidate is not qualified. Monitor candidates observing T-1 overhead training do so from the RSU.

2.18.1.2. A minimum of 2 hours controlling aircraft in which the candidate is qualified during overhead operations under supervision of an upgrade controller. (T-1 monitor candidates will not perform this training.)

2.18.1.3. A minimum of two 2-hour OJT tours performing in a monitor capacity under supervision of an upgrade monitor or a controller. Training will include normal monitor functions with emphasis on responsibilities during emergencies. Prior to accomplishing duties as a monitor at night, a minimum of one 2-hour night OJT tour will be accomplished under the supervision of a night-qualified controller or upgrade monitor.

2.18.1.4. An oral evaluation and written examination on monitor responsibilities and appropriate RSU directives.

2.18.2. Vance will specify Clinton-Sherman monitor and controller training in local directives.

2.18.3. RSUTOs document training on AETC Form 309 and maintain it in the training folders of each monitor. Give the folders to the monitor upon removal from monitor duties or change of station.

2.19. Observer Qualification Program:

2.19.1. RSUTSOs establish and supervise an RSU observer qualification program which includes the following:

2.19.1.1. A review of applicable RSU publications.

2.19.1.2. A minimum of two 2-hour OJT tours (one tour minimum for personnel assigned to Randolph; two 1-hour OJT tours for FSP) under the supervision of an upgrade observer or a controller. The controller will not be engaged in controlling traffic or upgrading another controller.

2.19.1.3. An oral evaluation and written examination on observer responsibilities and appropriate RSU directives.

2.19.2. Randolph will specify observer training and documentation in local directives.

2.19.3. RSUTOs document training on AETC Form 309 and maintain it in training folders of each observer. Give the folders to the individual upon removal from observer duties or change of station.

2.20. Currency Requirements:

2.20.1. The Christmas break (approximately 2 weeks) is not considered when computing currency requirements.

2.20.2. All controllers will perform controller duty (scheduled tour) at least once each 21 calendar days (30 days for Randolph PIT) on a runway that permits a VFR pattern. A controller performing upgrade duties may log a tour to meet this requirement.

2.20.2.1. If 21 days (30 days for Randolph PIT) pass without performance of controller duties, the controller will undergo refresher training to include a review of applicable RSU publications and a 1-hour OJT tour under the supervision of a current upgrade controller.

2.20.2.2. If 45 days pass without performance of controller duties, the controller will undergo refresher training (Paragraph 2.20.2.1., above) as a minimum and successfully completes a requalification performance evaluation consisting of an oral and written examination and an operational RSU check. The annual evaluation zone is based on this new qualification date. Place a comment on the AETC Form 309 with the reason for requalification.

2.20.2.3. If more than 90 days pass without performance of controller duties, the controller will complete requalification training (Paragraph 2.17.1.2.). The annual evaluation is based on this new requalification date.

2.20.3. Monitors will perform RSU duty at least once each 60 calendar days. A monitor performing upgrade duties may log a tour to meet this requirement. Monitors may hold dual qualification as an observer; however, monitor duty does not count toward observer currency.

2.20.3.1. If 60 days pass without performance of monitor duties, the monitor must undergo refresher training to include a review of applicable RSU publications and a 1-hour OJT tour under the supervision of a current controller or upgrade monitor. If the tour is accomplished under the supervision of a controller, the controller will not be engaged in controlling traffic.

2.20.3.2. If more than 90 days pass without performance of monitor duties, the monitor will complete refresher training (Paragraph 2.20.3.1., above), an oral evaluation, and a written examination.

2.20.4. Observers perform RSU duty at least once each 30 calendar days. An observer performing upgrade duties may log a tour to meet this requirement.

2.20.4.1. If 30 days pass without performance of observer duties, the observer must undergo refresher training to include a review of applicable RSU publications and a 1-hour OJT tour under the supervision of a current controller or upgrade observer. If the tour is accomplished under the supervision of a controller, the controller will not be engaged in controlling traffic.

2.20.4.2. If more than 90 days pass without performance of observer duties, the observer will complete refresher training (Paragraph 2.20.4.1., above), an oral evaluation, and a written examination.

2.20.5. RSUTOs will maintain records to show dates and runways on which each controller, monitor, and observer performs duty. Note if a controller's duty period is in a control or monitor capacity. Retain these records for a minimum of 6 months according to AFMAN 37-139 (formerly AFR 4-20, volume 2).

Chapter 3

LOCAL AREA PROCEDURES

3.1. Terminal Instrument Procedures (TERPS). The CATCO provides TERPS service according to AFM 55-9, *US Standard for Terminal Instrument Procedures (TERPS)* (projected to be AFJMAN 11-226) and AFMAN 13-209, *Instrument Procedures* (formerly AFR 60-27), for any procedure designed for instrument approach or departure of aircraft; that is, nonprecision and precision approaches and standard instrument departures.

3.2. Aircraft Traffic Patterns:

3.2.1. AFI 13-213, *Airfield Management* (formerly AFR 55-48), establishes traffic patterns for other than T-1, T-3, T-37, and T-38 aircraft. **Attachment 6** establishes home and auxiliary field traffic patterns for these aircraft. In addition, the following rules apply to the T-1, T-3, T-37, and T-38 aircraft:

3.2.1.1. Aircraft departing under RSU control must remain in visual meteorological conditions (VMC) until the departure control facility establishes radio and radar contact with the aircraft. Military assumes responsibility for separation of aircraft (MARSAs) will apply until standard IFR separation is established. Each base will also designate points at which aircraft normally terminate IFR service on arrival.

3.2.1.2. Aircraft of like type in the terminal area (not under radar or tower control) must maintain a specified airspeed on designated ground tracks and adhere to established altitudes.

3.2.1.3. The number of aircraft in the VFR traffic pattern is limited to 12 T-37s or T-38s or 10 T-1s or T-3s.

3.2.1.4. UFT aircraft do not normally remain in formation in the traffic pattern except on initial. If necessary to carry straight through on initial, obtain spacing on the turn to crosswind.

3.2.1.5. A common initial with opposite direction breaks for single runway operations will not be established. (*Auxiliary fields are exempt.*)

3.2.1.6. When weather prevents use of established pattern breakout procedures, a restricted pattern may be flown if the following requirements are satisfied:

3.2.1.6.1. Existing ceiling is at least 500 feet above pattern altitude.

3.2.1.6.2. Pattern entries are only made from initial takeoff via a crosswind entry from a parallel runway or from a straight-in approach (if procedures are established that prevent a traffic conflict).

3.2.1.6.3. Aircraft in the pattern is limited to eight.

3.2.1.6.4. Solo and team student sorties are prohibited.

3.2.1.7. Night overhead and visual straight-in approaches will not be flown simultaneously to the same runway. (*Randolph is exempt.*)

3.3. Local Flying Areas and Aircraft Separation. Flying activities will:

- 3.3.1. Establish sufficient local flying areas to meet mission requirements. Locate high areas over low areas when possible. Minimum training area size for FSP, UFT, and PIT is listed in [Attachment 7](#). Training areas below Class A airspace must be contained in military operations areas (MOA) or restricted areas. (*FSP is exempt.*)
- 3.3.2. Define training areas by arcs and radials to the extent practicable. (Latitudes and longitudes may be used if the aircraft is properly equipped.) Use geographical boundaries for T-3s. Ground references may also be identified to assist aircrews in area-keeping responsibilities.
- 3.3.3. Ensure only one UFT or PIT aircraft or flight operates in a training area at one time.
- 3.3.4. Establish altimeter setting procedures for use in local training areas.
- 3.3.5. Ensure the FSP area assignment function is performed by an IP current in the aircraft.
- 3.3.6. Establish procedures to ensure continuity of area assignment in the event the normal area control agency is unable to perform this function.
- 3.3.7. Ensure arrival and departure routes in a nonradar environment are procedurally separated from area boundaries. For FSP, use geographically defined reporting points and routes that are at least 1/2 mile wide or provide 300 feet vertical separation.
- 3.3.8. Establish procedures to notify applicable ATC facilities when MOAs and restricted areas will (or will not) be required. If use is not anticipated for the remainder of the day, notify applicable facilities so airspace can be made available to other users.
- 3.3.9. Normally require transient fixed wing aircraft to arrive and depart according to IFR unless prior approval is received for a VFR flight plan. Publish this guidance in applicable flight information publication (FLIP) documents along with additional information deemed appropriate for the local areas.

Chapter 4

RSU-CONTROLLED RUNWAY OPERATIONS

4.1. Aircraft Control:

4.1.1. RSUs control aircraft according to procedures in this instruction.

4.1.2. Local aircraft under tower control and transient aircraft are controlled according to applicable Air Force and FAA ATC publications.

4.2. Procedures at FSP and UFT Bases:

4.2.1. Each base will establish procedures to provide positive separation between RSU-controlled traffic and transient aircraft under tower or approach control. Establish procedures to ensure FSP aircraft remain clear of other aircraft in the terminal area.

4.2.2. ATC facilities will coordinate radar approaches to RSU-controlled runways as follows: (**NOTE:** The request and acknowledge system at Sheppard satisfies the communications requirement of this paragraph.)

4.2.2.1. Approaches under tower and radar control are not integrated with RSU controlled traffic unless direct communications are established between the RSU, tower, and radar facility.

4.2.2.2. To ensure proper sequencing of arriving radar traffic with RSU-controlled traffic, radar and RSU controllers coordinate as follows:

- At a specified position, the radar controller establishes initial contact with the RSU and provides identification, position, and type approach of the aircraft under radar control. Then the RSU is told when the aircraft is 9 miles from touchdown (5 miles for T-37s). The RSU is also told when the aircraft is 4 miles from touchdown (2 miles for T-37s).
- The RSU acknowledges each position report and issues appropriate traffic advisories and field information. In no case is a radar approach continued closer than 3 miles from touchdown unless it is coordinated with the RSU controller.
- During T-38 night straight-in approaches, only one coordination call from tower (or) radar to RSU is required. This call is made no closer than 5 miles from touchdown and includes the frequency assigned to the aircraft nearest touchdown.

4.2.3. Straight-in aircraft will report 9 and 4 miles from touchdown (5 and 2 miles for T-37s). RSU controllers will clear aircraft requesting a straight-in not later than when the aircraft is 9 miles from touchdown (5 miles for T-37s). Establish local procedures if straight-in clearance is canceled.

4.2.4. RSU controllers must evaluate each minimum fuel situation in light of existing conditions and determine the extent to which aircraft are given special handling. When a pilot declares minimum fuel, other approaches and landings may continue. However, minimum fuel aircraft must be given landing priority if a traffic conflict exists or is anticipated. RSU controllers acknowledge the initial minimum fuel call.

4.2.5. Immediate action must be taken to provide emergency aircraft with landing priority. If such action includes cancellation of another aircraft's landing clearance, the RSU controller will inform the affected pilot as soon as possible. When an aircraft is disabled on or near a runway, discontinue normal traffic pattern operations. If an emergency arises after operations have been suspended and an alternate course of action is not prescribed, the RSU controller relays field conditions to the pilot. Subsequent control decisions are based on the pilot's decision. Chiefs of airfield management or their representatives are responsible for authorizing resumption of normal runway operations.

4.2.6. Formations are controlled as a unit; however, after formation aircraft have split up, the guidance for aircraft separation in paragraph 4.2.8. applies.

4.2.7. RSU takeoff clearance is as follows:

4.2.7.1. Not more than four aircraft are permitted on the runway in takeoff position at the same time (three at FSP). At night, not more than one aircraft or one element of two aircraft is permitted on the runway at one time.

4.2.7.2. Controllers may authorize aircraft to taxi into position and hold when takeoff clearance cannot be issued because of other traffic.

4.2.7.3. Controllers may authorize aircraft to taxi into takeoff position and hold when low approach traffic is on final. Do not clear aircraft for takeoff until proper separation is ensured with low approach aircraft.

4.2.8. Departure and arrival separation is as specified in AFI 13-203 (formerly AFR 60-5/AETC Sup 1).

4.2.9. Procedures for anticipating separation are as follows:

4.2.9.1. Takeoff or landing clearance need not be withheld until prescribed separation exists if there is reasonable assurance it will exist when the aircraft starts takeoff roll or crosses the landing threshold. Landing clearance may be issued to a radar controlled aircraft when it is 3 miles from touchdown even though a preceding aircraft has not crossed the landing threshold if there is reasonable assurance that prescribed separation will exist when the radar controlled aircraft crosses the threshold.

4.2.9.2. The RSU controller may not issue clearances that require a provisional phrase or use words such as "continue." Specific guidance, such as "abort" or "go-around," should be used. (See [Attachment 4](#) for standard phraseology.)

4.2.10. Instrument and straight-in approaches are not permitted to proceed inside 4 miles (2 miles for T-37s) from the time a four-ship formation pitches until number four has initiated the turn to final.

4.2.11. Closed traffic procedures are as follows:

4.2.11.1. Aircraft are not cleared for closed traffic unless clearance can be granted without undue delay.

4.2.11.2. Caution must be used when clearing closed traffic with two aircraft on departure leg. If there is any doubt as to which aircraft has requested a closed, the controller will not issue a clearance.

4.2.12. When the aircrew reports or the controller directs a low approach, the aircraft will not touch down. During local flying operations when the aircrew is directed to make a RESTRICTED low approach, the aircraft will descend no lower than 300 feet AGL or higher, as specified by the RSU controller. Aircraft making a low approach or restricted low approach with an aircraft in takeoff position must clear the runway (HQ USAFFSA waiver).

4.2.13. The RSU controller's silence to the pilot's "gear down" call is implied clearance to land, which may be modified by oral communications.

4.2.14. RSU controllers should refrain from soliciting early turnoffs or instructing aircrews to clear the runway faster than normal.

4.2.15. RSU controllers may request T-37 aircrews to turn off strobe lights during hours of darkness while in the home base traffic pattern (HQ USAFFSA waiver).

4.3. Diversion Airfields for Solo and Team Sorties. When a runway closure prevents recovering solo or team sorties at the home field, another suitable airfield is designated as a diversion and the following applies:

4.3.1. An LOA will be negotiated with the host diversion base authorizing an IP access to the control tower to assist in recovering solo and team aircraft.

4.3.2. The IP acts as a safety monitor by observing traffic patterns, landings, and configurations. Assigned personnel relay instructions to aircraft through the tower controller. (If necessary, ask the tower controller for the microphone.) Personnel assigned this duty must not interfere with control tower operations or procedures.

Chapter 5

AIR TRAFFIC CONTROL AND LANDING SYSTEMS (ATCALs) AND FACILITIES

5.1. Applicable Documents:

5.1.1. AF Form 3215, **Communication-Computer Systems Requirement Document**. This document establishes requirements for new fixed ground communications-electronics facilities, including ATCALs. It is prepared according to AFI 33-103, *Requirements Developing and Processing* (formerly AFR 700-3).

5.1.2. Communication-Computer Systems Program Plan (CSPP). A detailed plan used to obtain formal approval for ATCALs requirements. When approved, it is the authority for engineering, procurement, and installation support actions for an approved communication-computer systems requirement document (CSRd).

5.2. Programming Actions:

5.2.1. The base or HQ AETC may establish the requirement for an ATCALs facility as a result of operational decisions concerning mission support.

5.2.2. The local communications squadron commander participates in and acts as the focal point for operational planning to ensure integrity and continuity of communications support.

5.2.3. The CSRd is submitted to the base Communication-Computer Systems Requirements Board (CSRb) for evaluation. If validated and approved, action to implement the CSRd is initiated according to AFI 33-103 (formerly AFR 700-3).

5.2.4. To discontinue an ATCALs facility requires all of the following:

5.2.4.1. HQ AETC approval.

5.2.4.2. Prior coordination with HQ AFFSA according to AFI 33-103 (formerly AFR 700-3).

5.2.4.3. Prior coordination with the FAA according to FAA Handbook 7400.2, *Procedures for Handling Airspace Matters*, and AFI 13-201 (formerly AFR 55-2).

5.2.5. HQ AETC makes final decisions regarding addition, deletion, or relocation of ATCALs facilities. Headquarters, Air Force Flight Standards Agency (HQ AFFSA) or Headquarters, Air Force Materiel Command (HQ AFMC) controls modifications or improvements to installed facilities.

5.3. Operation and Maintenance:

5.3.1. HQ AFFSA is normally responsible for operation and maintenance of Air Force-operated ATCALs facilities.

5.3.2. FAA aircraft accomplish flight inspections of these facilities according to AFM 55-8, *FAA OAP 8200.1, US Standard Flight Inspection Manual Procedures* (projected to be AFMAN 11-225).

5.3.3. Standby generators, with automatic start and stop capability, are normally provided for ATCALs facilities operating in support of a flying mission. Detailed requirements are in AFI 32-1063, *Electric Power Systems* (formerly AFR 91-4).

5.3.4. Backup air-conditioning for ATCALs facilities can be approved by local installation commanders if deemed necessary.

5.3.5. The base information systems officer provides telephone voice and control circuitry to base ATCALs facilities according to AFI 33-111, *Telephone Systems Management* (formerly AFR 700-8, volume I).

5.4. Frequency Assignment. Frequency assignment procedures are in AFI 33-118, *Radio Frequency Spectrum Management* (formerly AFR 700-14). Requests are submitted through the installation frequency manager to AETC CSS/SCYRS.

5.5. Emergency ATCALs Facilities. AFI 10-414, *Requesting and Employing Combat Communication Resources in Peacetime* (formerly AFR 55-28), tells how to initiate and submit requests for emergency ATCALs facility support.

Chapter 6

AIRSPACE ACTIONS

6.1. Applicable Directives:

- 6.1.1. AFI 13-201 (formerly AFR 55-2) gives guidance on matters of airspace use and other aeronautical matters of concern to the Air Force.
- 6.1.2. FAA Handbook 7400.2 outlines procedures concerning assignment, revocation, and review of navigable airspace.
- 6.1.3. FAA Handbook 7610.4, *Special Military Operations*, details services provided to AETC aircraft.

6.2. AETC Flying Organization Responsibilities. These organizations will:

- 6.2.1. Initiate, coordinate, and submit matters requiring airspace action as follows:
 - 6.2.1.1. Prepare proposals involving special use airspace using the format in FAA Handbook 7400.2.
 - 6.2.1.2. Ensure all proposed airspace actions are assessed for environmental impact according to AFI 32-7061, *The Environmental Impact Analysis Process* (formerly AFR 19-2). Prepare AF Form 813 for each proposed action.
 - 6.2.1.3. Coordinate proposals with applicable center and wing personnel, FAA facilities, and other aviation interests, as appropriate. Ensure areas of disagreement between affected military activities are resolved before approaching the FAA. If an issue cannot be resolved locally, send it through channels for action.
 - 6.2.1.4. Submit all proposals to HQ AETC/XOSA for review and further action. A proposal package includes a cover letter, three copies of the proposal, three sectional charts (two original) graphically depicting the proposal, and a copy of AF Form 813 and any subsequent environmental analyses.
NOTE: HQ AETC/XOSF will provide technical assistance for proposals involving ATCALs or ATC matters.
- 6.2.2. Evaluate airspace actions that may affect the wing mission or area of operations. Submit valid aeronautical objections to HQ AETC/XOSA according to AFI 13-201 (formerly AFR 55-2).

6.3. Unit Responsibilities. Units having a requirement to develop or revise MTRs will comply with procedures in FAA Handbook 7610.4. Units having a requirement to develop slow speed (250 KIAS or less) VFR low-altitude training routes will comply with procedures outlined in FLIP. Submit proposals according to paragraph **6.2.1.4**. Keep a copy of the AF Form 813 and any subsequent environmental analyses in the wing files until a route is discontinued.

6.4. HQ AETC/XOSA Responsibilities:

- 6.4.1. Review proposals to ensure thoroughness and clarity of presentation, completeness of coordination, and adherence to Air Force and command policy.
- 6.4.2. Submit proposals to the Air Force representative at the appropriate FAA region for further action.
- 6.4.3. Prepare and submit a final command position for all airspace actions submitted by other agencies when such actions could affect AETC operations.

Chapter 7

VOICE CALL SIGNS (VCS)

7.1. VCS Directives. VCS are used in communications to identify Air Force aircraft and organizations. AFKAO-1G, *USAF Voice Call Sign List*, is the governing directives for use of VCS within the Air Force. The AFKAI-1, *USAF Voice Call Sign Instruction* (sections E, H and M), contains all static VCS used by AETC activities. If a call sign is not listed in one of these sections for the activity for which it is desired, it is not authorized for use.

7.2. Local VCS Use:

7.2.1. Flying activities identify local student solo and team sorties by a separate call sign.

7.2.2. Solo and team student sorties include the letter "Z" as a suffix to their assigned VCS when filing a DD Form 175, **Military Flight Plan**. Do not use the "Z" suffix in radio communications.

7.3. Forms Prescribed. AETC Forms 309, 355, 360, 361, 393, and 1163.

GLENN A. PROFITT II, Major General, USAF
Director, Plans and Operations

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFKAI-1, *USAF Voice Call Sign List*

AFKAO-1G, *USAF Voice Call Sign Instruction*

FAA Handbook 7400.2, *Procedures for Handling Airspace Matters*

FAA Handbook 7610.4, *Special Military Operations*

AFI 10-414, *Requesting and Employing Combat Communication Resources in Peacetime* (formerly AFR 55-28)

AFI 11-209/AETC Sup 1, *Air Force Participation in Aerial Events* (formerly AFR 60-18/AETC Sup 1)

AFI 11-401, *Flight Management* (formerly AFR 60-1/AETC Sup 1)

AFPD 13-2, *Air Traffic Control, Airspace, Airfield, and Range Management*

AFI 13-201, *US Air Force Airspace Management* (formerly AFR 55-2)

AFI 13-203, *Air Traffic Control* (formerly AFR 60-5/AETC Sup 1)

AFMAN 13-209, *Instrument Procedures* (formerly AFR 60-27)

AFI 13-213/AETC Sup 1, *Airfield Management* (formerly AFR 55-48)

AFI 31-209, *The Air Force Resource Protection Program* (formerly AFR 125-37/AETC Sup 1)

AFI 32-1062, *Planning and Design of Airfields* (formerly AFR 86-5) (**NOTE:** AFI 32-1026 is projected to be AFJMAN 32-8008, volume 3, *Airfield and Heliport Planning and Design Criteria.*)

AFI 32-1063, *Electric Power Systems* (formerly AFR 91-4)

AFI 32-7061, *The Environmental Impact Analysis Process* (formerly AFR 91-2)

AFI 33-103/AETC Sup 1, *Requirements Developing and Processing* (formerly AFR 700-3/AETC Sup 1)

AFI 33-111, *Telephone Systems Management* (formerly AFR 700-8, volume 1)

AFI 33-118/AETC Sup 1, *Radio Frequency Spectrum Management* (formerly AFR 700-14)

AFMAN 37-139, *Disposition of Records - Standards* (formerly AFR 4-20, volume 2)

AFM 55-8, FAA OAP 8200.1, *US Standard Flight Inspection Manual Procedures* (projected to be AFMAN 11-225)

AFM 55-9, *US Standard for Terminal Instrument Procedures (TERPS)* (projected to be AFJMAN 11-226)

AFMAN 91-201/AETC Sup 1, *Explosive Safety Standards* (formerly AFR 127-100/AETC Sup 1)

Abbreviations and Acronyms

AGL—above ground level

AICUZ—air installation compatible use zone

APU—auxiliary power unit

ASR—airport surveillance radar

ATC—air traffic control

ATCAA—air traffic control assigned airspace

ATCALS—air traffic control and landing systems

CAP—commander's awareness program

CATCO—Chief, Air Traffic Control Operations

CSPP—communications-computer systems program plan

CSRB—Communications-Computer Systems Requirement Board

CSRD—communications-computer systems requirement document

EIAP—environmental impact analysis process

FAA—Federal Aviation Administration

FLIP—flight information publication

FSP—Flight Screening Program

GCA—ground controlled approach

IFR—instrument flight rules

IP—instructor pilot

LOA—letter of agreement

MARSA—military assumes responsibility for separation of aircraft

MOA—military operations area

MTR—military training route

NAS—National Airspace System

NAVAID—navigational aid

NOTAM—notice to airmen

OJT—on-the-job training

PIT—pilot instructor training

QAE—quality assurance evaluator

RCS—runway control structure

RSU—runway supervisory unit

RSUTO—RSU training officer

RSUTSO—RSU training and standardization officer

SOF—supervisor of flying

SUNT—specialized undergraduate navigator training

SUPT—specialized undergraduate pilot training

TERPS—terminal instrument procedures

UFT—undergraduate flying training

UPT—undergraduate pilot training

VCS—voice call sign

VFR—visual flight rules

VMC—visual meteorological conditions

Terms

Air Traffic Control Assigned Airspace (ATCAA)—Airspace assigned by an air traffic control facility for the purpose of separating specified activities from other instrument flight rules (IFR) aircraft. ATCAA is designated by an LOA with the controlling agency.

Hotline—Any direct, immediate, and dedicated single-use method of communication that can be accomplished without dialing, or any other type of delay. Nontelephonic hotlines must have a backup power supply.

Military Accepts Responsibility for Separation of Aircraft (MARSA)—Denotes that during specified military flight operations, air traffic control (ATC) services are not required to ensure separation between participating aircraft. MARSA is only applicable between participating IFR military aircraft as defined in AFI 13-201 (formerly AFR 55-2) and may only be authorized by the MAJCOM. Send requests for MARSA approval through the operations group commander and 19 AF/DO to the Flying Support Division (HQ AETC/XOS).

NOTE: MARSA is authorized at all undergraduate flying training bases for simultaneous departures from parallel runways and for military operations area and restricted area operations at Luke and Tyndall AFBs.

Military Operations Area (MOA)—Airspace outside Class A airspace used to segregate military training activities from other IFR traffic. Nonparticipating traffic may be routed through an active MOA if IFR separation is provided from operations in the MOA. Nonparticipating VFR aircraft are not restricted from flying within an MOA.

Undergraduate Flying Training (UFT)—This training includes undergraduate pilot training (UPT), specialized undergraduate pilot training (SUPT), Euro-NATO Joint Jet Pilot Training (ENJJPT), and specialized undergraduate navigator training (SUNT).

Attachment 2**NAVIGATION PROCEDURES CHECKLIST AND GUIDELINES**

NOTE: Local T-1, T-37, and T-38 aircrew in-flight guides must include a navigation procedures checklist, which contains the following items as a minimum.

A2.1. List of required aircrew personal equipment.

A2.2. Preflight planning, which includes:

A2.2.1. Notices to airmen (NOTAM).

A2.2.2. FLIP Area Planning.

A2.2.3. FLIP IFR Supplement, which includes the location of barriers, airfield hazards, special arrival or departure procedures, and required servicing capability.

A2.2.4. FLIP en route charts, which include airways, emergency airfields, and restricted and prohibited areas.

A2.2.5. FLIP Terminal, which includes a review of planned and backup approach procedures.

A2.2.6. Standard instrument departure.

A2.3. Current and forecast weather, which includes:

A2.3.1. Ceiling and visibility.

A2.3.2. Icing.

A2.3.3. Turbulence.

A2.3.4. Thunderstorms--weather warnings.

A2.3.5. Winds.

A2.3.6. Alternate requirements.

A2.4. Local command and control procedures, which include:

A2.4.1. Required coordination with the SOF.

A2.4.2. Obtaining maintenance support.

A2.4.3. Reporting deviations, incidents, and accidents.

A2.5. Aircrew responsibilities during refueling stops as follows:

A2.5.1. Ensure gear pins are installed.

A2.5.2. Ensure aircraft is properly grounded.

A2.5.3. Conduct a thorough postflight, using the exterior inspection checklist of the preflight check.

A2.5.4. Complete the strange-field checklist.

A2.5.5. Notify appropriate authorities (SOF or airfield manager) of any unreported airfield discrepancies.

A2.5.6. Ensure transient alert or maintenance personnel are familiar with servicing procedures. At least one fully qualified pilot must be present during servicing conducted by fixed base operator fuel contractors to ensure refueling and servicing is completed and documented properly.

A2.5.7. Be aware of approaching or forecast hazardous weather and possible need to hangar or tie down aircraft.

A2.5.8. If aircraft requires moving, ensure maintenance personnel are familiar with towing procedures.

A2.5.9. Ensure reasonable aircraft security measures are available which may include a fenced area, locked gate, hangar, or security guard.

A2.5.10. Ensure transient alert or maintenance personnel are familiar with starting procedures.

Attachment 3**RSU INSPECTION CHECKLIST**

A3.1. Daily and Monthly Checks. The wing RSU facility officer or designated alternate should check the following items monthly at each RSU. Additionally, the RSU daily opening checklist should incorporate a check of the asterisked items below as a minimum.

A3.1.1. **Exterior.** Perform a visual check of the following operations and (or) conditions:

- A3.1.1.1. Power hookup, external wiring, proper ground.
- A3.1.1.2. Guys and mounts in place (mobile units).
- A3.1.1.3. Wind measuring equipment.*
- A3.1.1.4. Communications antennas.*
- A3.1.1.5. Obstruction lights.*
- A3.1.1.6. Flare warning signs.*
- A3.1.1.7. Relief facility (first floor in permanent RSUs).
- A3.1.1.8. Unit exterior (including floor support in mobile units).
- A3.1.1.9. Auxiliary power unit operation or power transfer (as applicable).

A3.1.2. **Air-Conditioner or Heater:**

- A3.1.2.1. Proper operation.*
- A3.1.2.2. Filters.
- A3.1.2.3. Duct condition.

A3.1.3. **Radio Equipment:**

- A3.1.3.1. Equipment bay (visual check):
 - Equipment secure in racks.
 - Adequate cooling.
 - Evidence of water leakage.
 - Condition of wiring.
- A3.1.3.2. Console:
 - All equipment operational.*
 - Switches properly labeled.*
 - Microphones and headsets--correct number and condition.*

A3.1.4. **Unit Interior:**

- A3.1.4.1. General condition and cleanliness.*
- A3.1.4.2. Windows (clean and no faults).*

A3.1.4.3. Window shade operation and condition.

A3.1.4.4. Evidence of water leakage.

A3.1.4.5. Proper flare storage.

A3.1.4.6. Telephone and hotline operation.*

A3.1.4.7. Wind equipment operational.*

A3.1.4.8. Equipment inventory and condition:

A3.1.4.8.1. Flares.*

- Publications and forms.*
- Light gun.*
- Binoculars (if maintained in RSU).*

A3.1.4.9. Fire extinguishers.*

A3.1.4.10. Chairs.

A3.2. Recording Discrepancies. Record discrepancies on the unit AETC Form 360 and report to the agency responsible for corrective action and (or) RSU facility officer as specified locally. The wing RSU facility officer records open discrepancies on the AETC Form 361.

Attachment 4**STANDARD RSU RADIO PHRASEOLOGY**

A4.1. **Table A4.1.** through **Table A4.4.** contain standard RSU radio phraseology.

A4.2. When issuing instructions, RSU controllers normally refer to the aircraft's position rather than its call sign. Identify the source of transmission when using guard channel; for example, "Final, go-around, Westwind on guard."

A4.3. Terms such as "number one" or "number two" are not normally used by RSU controllers or observers to identify pattern position. Pilots to whom instructions are issued may not know their relative position.

A4.4. Aircraft in formation may be identified by call sign when necessary to prevent confusion between pattern position and formation position.

A4.5. This phraseology is not intended to cover every situation or restrict use of additional terms. However, additional required calls should be kept to a minimum. It is important to use timely, clear, concise, standard phraseology that communicates the same meaning to all AETC aircrew members.

Table A4.1. Terms to Identify Aircraft Positions.

I T E M	A	B
	Position	Phraseology
1	On the taxiway or runup area before being cleared on or across the active.	Holding for the active. . . (May be prefaced with relative position; for example, No. 1, 2, or 3.)
2	On the taxiway or taxiing onto the runway after being cleared on.	Taking the active. . . (May be prefaced with relative position; for example, No. 1, 2, or 3.)
3	In departure position before brake release.	Departure position. . .
4	On runway after brake release for departure.	Departure roll. . . (Formation members must be directed by their position in formation; for example, "Vega 31-2 abort".)
5	Airborne after departure but not yet started to turn out of traffic.	Departure leg. . .
6	On crosswind after completing turn from takeoff leg.	Crosswind. . .
7	In pullup to closed downwind.	Pulling closed. . .
8	On downwind after closed pattern pullup.	Closed downwind. . .
9	On downwind after passing normal rollout point or completing the turn from entry leg or crosswind.	Downwind. . . (May specify inside or outside downwind as required.)
10	Initiating final turn.	Starting final turn. . .
11	After established in final turn.	Final turn. . .
12	After initiating rollout to final approach.	Rolling out on final. . . Take into account overshooting final turns also.)
13	After wings level on final approach.	Final. . .
14	Approaching overrun.	Short final. . .
15	Over the overrun on final approach.	Overrun. . .
16	After starting roundout/flare for landing.	Flare. . .
17	Aircraft on go-around from final turn.	On the go from final turn. . . (Normally used to inform pilot of other traffic or aircraft configuration.)
18	Aircraft on go-around from final approach	On the go from final approach. . . (Normally used to inform pilot of other traffic or aircraft configuration.)
19	Aircraft on go-around displaced from the runway inside the pattern.	Offset. . .
20	Aircraft turning initial but not yet wings level.	Turning initial. . .

I T E M	A	B
	Position	Phraseology
21	On initial but not yet rolling into the break.	Initial. . .
22	Initiating bank for break until wings level on downwind.	In the break. . .

Table A4.2. Terms Unique to Rectangular Patterns.

(This table supplements the terms listed in [Table A4.1.](#))

I T E M	A	B
	Position	Phraseology
1	Initiating turn to base.	Starting base turn. . .
2	After established in base turn.	Base turn. . .
3	After initiating rollout on base.	Rolling out on base. . .
4	After wings level on base.	Base. . .
5	Aircraft on go-around from base.	Aircraft on-the-go from base. . . (Normally used to inform pilot of other traffic.)

Table A4.3. Standard RSU Controller to Pilot Instructions.

I T E M	A	B
	Instruction	Meaning
1	Go-around	Discontinue approach or landing; initiate procedures to remain or become airborne.
2	Breakout	Leave traffic pattern as specified in local pattern directives.
3	Abort	Discontinue takeoff (only if appropriate).

Table A4.4. Other Controller and Pilot Phraseology.

I T E M	A	B
	Tower/RSU Instruction	Pilot Response
Before Takeoff		
1	"Hold short"	"CALL SIGN, holding short"
2	"Taxi into position and hold"	"CALL SIGN, on to hold"
3	"Cleared for takeoff"	"CALL SIGN"

I T E M	A	B
	Tower/RSU Instruction	Pilot Response
Traffic Pattern		
	Pilot Call	RSU Response
4	"CALL SIGN, request closed" ("right/left" as appropriate at aux field)	"Closed approved" or "Negative closed" ("right/left" as appropriate at aux field)
5	"CALL SIGN, gear down"	(Normally no response)
6	"CALL SIGN, descending outside downwind"	(Normally no response)
7	"CALL SIGN, (position) breaking out"	(Normally no response)
8	"CALL SIGN, initial" include fuel remaining if planning a full stop landing)	(Normally no response unless initial pattern entry)
9	"CALL SIGN, initial, "request right/left break" (aux field)	"Right/left break approved" (aux field)

Attachment 5**RSU CONTROLLER UPGRADE SYLLABUS**

A5.1. Training Requirements. Following are the minimum requirements to be included in the local syllabus of instruction to upgrade RSU controller candidates. Additional training or procedures peculiar to the local area should be added as necessary.

A5.1.1. Trainees complete a minimum of nine daylight OJT tours and one night tour (minimum of 2 hours each). (Randolph is exempt from night requirements.) Proficiency advancement is authorized at discretion of the operations group commander.

A5.1.2. The night tour is not to be accomplished prior to completion of four daylight tours.

A5.1.3. Day tours must be completed during periods when status of flying permits aircraft recovery from the overhead pattern. The trainee is limited to one upgrade tour per day but is scheduled with sufficient frequency to ensure continuity of training.

A5.1.4. The trainee receives OJT by actually controlling traffic while under direct supervision of an upgrade controller who retains responsibility for a safe traffic pattern and takes control of the pattern if the trainee does not adequately respond to the situation. The training program should also include provisions to ensure familiarity with responsibilities when performing the monitor function.

A5.1.5. Documentation showing the trainee's progress is maintained to ensure completion of all syllabus requirements before evaluation.

A5.1.6. Controllers transferred intracommand should receive sufficient training to ensure familiarity with local operations.

A5.1.7. Additional manning in the RSU during OJT tours cannot be used to substitute for normal manning requirements.

NOTE: T-3 controller candidates complete applicable items and OJT tours 1 through 8 only. Each tour lasts a minimum of 1 1/2 hours.

A5.2. Orientation. The trainee:

A5.2.1. Receives a briefing from the RSUTSO or RSUTO on the controller training program and the RSU role in a student training environment.

A5.2.2. Studies appropriate directives concerning RSU operations.

A5.2.3. Is encouraged to visit the tower and terminal radar facility to observe terminal activities and the interface with RSU operations.

A5.3. OJT Tours 1 and 2 (4 Hours Minimum). The trainee:

A5.3.1. Is briefed on and observes the following (trainee may practice these items on tour 2):

A5.3.1.1. Crew briefing.

A5.3.1.2. RSU and APU preflight checks.

A5.3.1.3. Crew changeover procedures.

A5.3.2. Practices controlling VFR traffic.

A5.4. OJT Tours 3 Through 9 (14 Hours Minimum). The trainee:

A5.4.1. Practices subjects previously introduced to include procedures for beginning and terminating RSU operations.

A5.4.2. Practices controlling VFR traffic.

A5.4.3. Is briefed on or practices and must have a thorough understanding of the following:

A5.4.3.1. Supervision, coordination, and discipline of the RSU crew.

A5.4.3.2. Assuming and relinquishing runway control.

A5.4.3.3. Coordination with other ATC agencies and the SOF.

A5.4.3.4. Local techniques and guidance to safely facilitate normal traffic flow while maintaining specified separation standards and sequencing.

A5.4.3.5. Traffic pattern priorities and breakouts.

A5.4.3.6. Transient and civilian aircraft procedures.

A5.4.3.7. Runway change procedures.

A5.4.3.8. Reporting RSU discrepancies.

A5.4.3.9. Control of ground aborts.

A5.4.3.10. Control of emergency aircraft, including aircraft chase procedures.

A5.4.3.11. Overdue aircraft.

A5.4.3.12. Lost student assistance.

A5.4.3.13. Single and dual runway operations.

A5.4.3.14. Situations which could result in a potential stall (tight downwinds, slow finals, etc.) and controller actions to prevent or correct the situation.

A5.4.3.15. Specific guidance on when to issue go-around instructions.

A5.4.3.16. Flying status changes.

A5.4.3.17. Weather recall and diversion procedures.

A5.4.3.18. Local contingency plans (Broken Arrow, SCATANA, etc.).

A5.4.3.19. RSU radio and power failure.

A5.4.3.20. RSU administrative duties.

A5.4.3.21. Radio terminology.

A5.4.3.22. Local potential traffic conflicts (final turn versus straight-in, etc.).

A5.4.3.23. Monitoring and responsibility for solo traffic.

A5.4.3.24. Recovery of radio out aircraft.

A5.4.3.25. Handling and storage of flare pistols and flares.

A5.4.3.26. Use of AETC Form 355.

A5.5. OJT Tour 10 (2 Hours Minimum at Night). This lesson may be accomplished any time during scheduled night flying after completing four OJT tours and before assuming unsupervised controller duties at night. Completion of this tour is desired but not a prerequisite for the controller's initial evaluation.

A5.5.1. The trainee is briefed on the following procedures as they differ from daytime procedures:

A5.5.1.1. Traffic patterns.

A5.5.1.2. Common pilot errors.

A5.5.1.3. Separation standards.

A5.5.1.4. Emergency procedures.

A5.5.1.5. RSU lighting.

A5.5.1.6. RSU duties and responsibilities.

A5.5.2. The trainee practices controlling and monitoring night traffic, as applicable.

A5.6. OJT Tour 11 (2 Hours Minimum at Auxiliary Field). This lesson needs to be accomplished only if aircraft flown by the trainee uses an auxiliary field. The tour may be accomplished any time after trainee completes four OJT tours and is a prerequisite to assuming unsupervised controller duties at the auxiliary. Completion of this tour is desired but not a prerequisite for the controller's initial evaluation.

A5.6.1. The trainee is briefed on procedures at the auxiliary as they differ from those at the home field.

A5.6.2. The trainee practices controlling traffic at auxiliary field.

Attachment 6

TRAFFIC PATTERNS

A6.1. General Information. **Figure A6.1.** and **Figure A6.2.** are basic in design and may have to be modified to accommodate local conditions. The intent is to separate aircraft procedurally to the maximum extent possible.

A6.2. T-37 and T-38 Aircraft:

A6.2.1. T-37 traffic pattern altitude is normally 1,000 feet AGL. T-38 traffic pattern altitude is normally 1,500 feet AGL.

A6.2.2. Establish an initial approach of 3 to 5 nautical miles, measured from the pitch point. Radar controlled aircraft may enter initial from either side provided the entry point is located outside of VFR traffic.

A6.2.3. Establish a VFR entry and reentry leg which is entered from a turn from one side only. Aircraft entering on the VFR entry leg must be wings level on the entry leg at least 1 nautical mile prior to entering the pattern or converging with other aircraft and must give way to aircraft established in pattern.

A6.2.4. A common entry leg may be used for both VFR and radar sequence entries provided right-of-way priorities are established where aircraft converge and provisions are made for aircraft forced to give way. Aircraft must be wings level at least 1 nautical mile prior to converging points and must converge at a 45° angle in level flight to facilitate clearing.

A6.2.5. Establish pattern right-of-way priorities and breakout procedures for aircraft which converge onto a common ground track.

A6.2.5.1. Aircraft on 90- or 45-to-initial giving way to aircraft on initial, climb a minimum of 500 feet and reenter in the VFR entry area, request radar initial, or fly straight through on an offset initial, obtaining spacing and letting down to traffic pattern altitude during the turn to outside downwind.

A6.2.5.2. Aircraft giving way on VFR entry leg climb a minimum of 500 feet and reenter in the VFR entry area.

A6.2.5.3. Aircraft breaking out from inside or outside downwind climb a minimum of 500 feet and reenter in the VFR entry area or request radar initial.

A6.2.5.4. Aircraft breaking out from low closed downwind maintain 500 feet below pattern altitude and reenter in the VFR entry area or request radar initial.

A6.2.5.5. Aircraft breaking out of the traffic pattern will advise the controlling agency by position.

A6.2.6. Pattern spacing is normally obtained by adjusting position of the crosswind leg.

A6.2.7. Radar service may be terminated prior to actual pattern entry if the approach control facility establishes aircraft separation and sequencing prior to termination point and a prescribed ground track and airspeed are flown from termination point to the pattern.

A6.2.8. Weather minimums must ensure that VFR conditions, including required cloud clearance and visibility, can be maintained during all portions of the pattern.

A6.2.9. Procedures may be developed to permit pitchouts and closed patterns opposite the normal direction of break at auxiliary fields. Go-around, breakout, and reentry procedures must be established to prevent conflicts.

A6.2.10. Establish runway change procedures that ensure an orderly transition to the new pattern.

A6.3. T-1 Aircraft:

A6.3.1. T-1 traffic pattern and outside downwind altitude is normally 1,500 feet AGL; closed pattern altitude is normally 1,000 feet AGL.

A6.3.2. Establish an initial approach of 3 to 5 nautical miles measured from the pitch point. Radar controlled aircraft may enter initial from either side provided the entry point is located outside of VFR traffic.

A6.3.3. Establish a VFR entry and reentry leg which is entered from a turn from one side only. Aircraft entering on the VFR entry leg must be wings level on the entry leg at least 1 nautical mile prior to entering the pattern or converging with other aircraft and must give way to aircraft established in pattern.

A6.3.4. A common entry leg may be used for both VFR and radar sequence entries provided right-of-way priorities are established where aircraft converge and provisions are made for aircraft forced to give way. Aircraft must be wings level at least 1 nautical mile prior to converging points and must converge at a 45° angle in level flight to facilitate clearing.

A6.3.5. Establish pattern right-of-way priorities and breakout procedures for aircraft which converge onto a common ground track.

Figure A6.1. Design of T-37, T-38, and T-3 Aircraft Traffic Pattern.

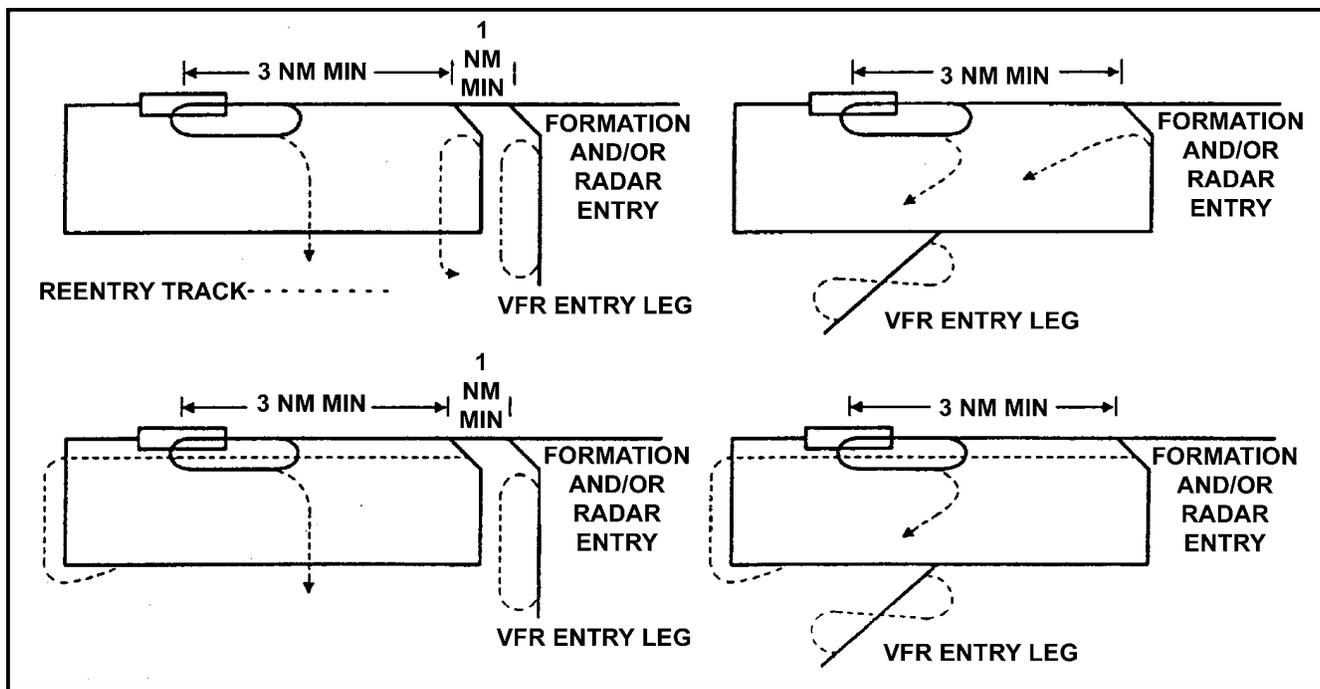
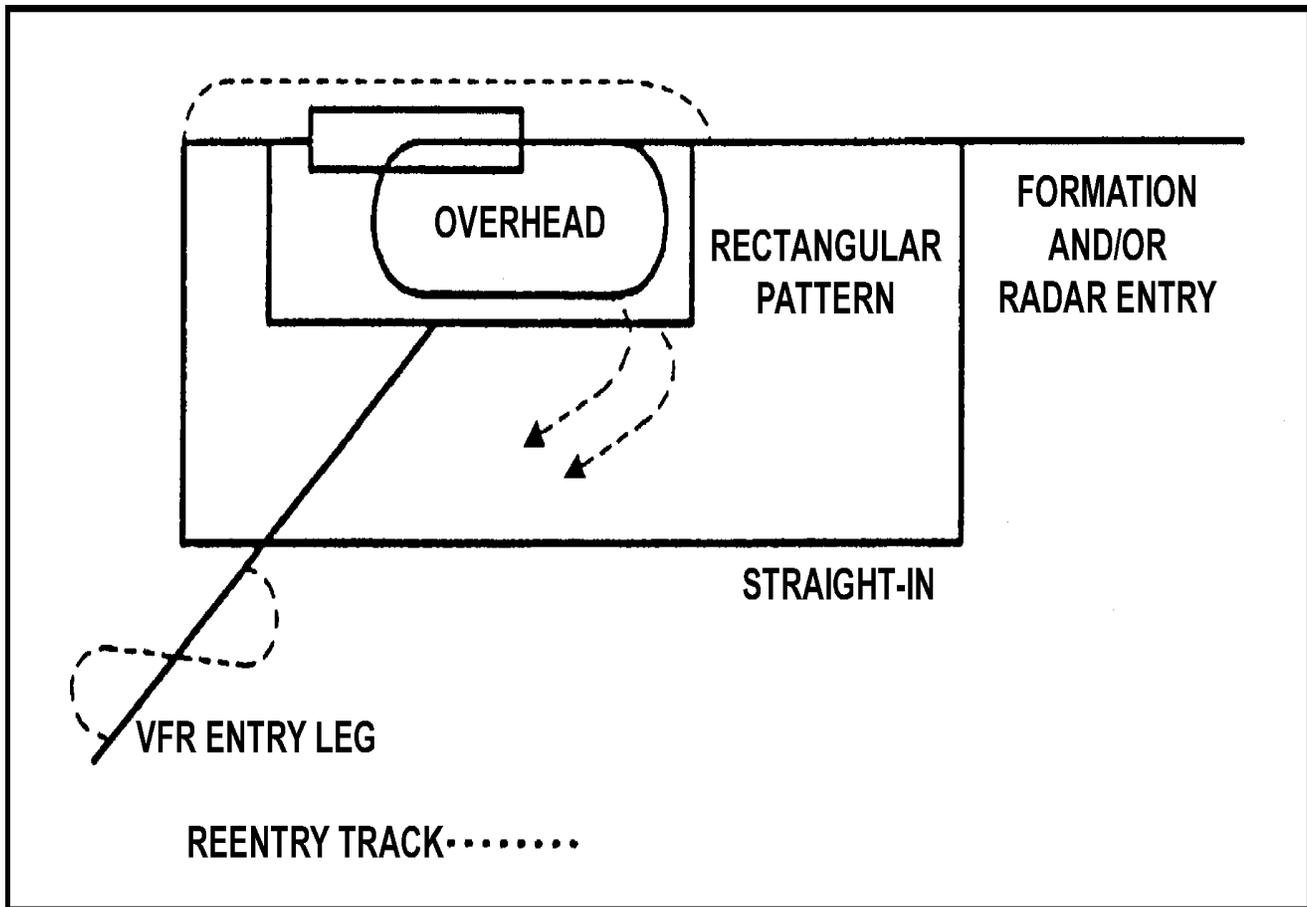


Figure A6.2. Design of T-1A Aircraft Traffic Pattern.



A6.3.5.1. For aircraft in the overhead giving way to aircraft on final approach, climb 500 feet and reenter in the VFR entry area.

A6.3.5.2. For aircraft in the closed pattern giving way to aircraft on final approach, maintain pattern altitude and reenter in the VFR entry area.

A6.3.5.3. For aircraft giving way on VFR entry leg, climb 500 feet and reenter in the VFR entry area.

A6.3.5.4. An aircraft on a straight-in approach that perceives a conflict with an aircraft turning final will discontinue the approach and offset the ground track away from the final turn.

A6.3.6. Pattern spacing is normally obtained by adjusting position of the crosswind leg.

A6.3.7. Radar service may be terminated prior to actual pattern entry if the approach control facility establishes aircraft separation and sequencing prior to termination point and a prescribed ground track and airspeed are flown from termination point to the pattern.

A6.3.8. Weather minimums must ensure that VFR conditions, including required cloud clearance and visibility, can be maintained during all portions of the pattern.

A6.3.9. Establish runway change procedures that ensure an orderly transition to the new pattern.

A6.4. T-3 Aircraft:

A6.4.1. Traffic pattern altitude is normally 800 feet AGL.

A6.4.2. An entry leg of 45° to downwind is normally used to enter the pattern.

A6.4.3. Turns onto the entry leg are at a constant altitude and such that unsafe clearing situations are prevented.

A6.4.4. Aircraft breaking out of the pattern climb 500 feet (300 feet at Hondo) and reenter the pattern. (**EXCEPTION:** Aircraft breaking out from entry leg may make level turns if the aircraft is rolled out wings level after each 90° of turn to facilitate clearing.)

A6.4.5. Minimum aircraft spacing in the traffic pattern is 1,500 feet. Obtain pattern spacing by adjusting position of the crosswind leg.

A6.4.6. Weather minimums must ensure that VFR conditions, including required cloud clearance and visibility, can be maintained during all portions of the pattern.

A6.4.7. Establish runway change procedures that ensure an orderly transition to the new pattern

Attachment 7

TRAINING AREA SIZE CRITERIA

NOTE: See [Table A7.1](#) for minimum planned area size requirements.

Table A7.1. Minimum Planned Area Size Requirements (Square Nautical Miles by Altitude).

(note 1)			
I T E M	A	B	C
	Aircraft	Area	Size Requirements
1	T-37	Contact area	Below 15,000 feet--100 square miles x 5,000 feet
2			Above 15,000 feet--100 square miles x 6,000 feet
3		Instrument area (note 2)	200 square miles x 1,500 feet
4		Formation area (note 3)	200 square miles x 3,000 feet
5	T-38	Contact area	200 square miles x 12,000 feet
6		Instrument area (note 2)	Below FL 240--400 square miles x 4,000 feet
7			Above FL 240--800 square miles x 4,000 feet
8		Formation area (note 3)	Below FL 240--400 square miles x 4,000 feet
9			Above FL 240--800 square miles x 4,000 feet
10	T-1	All areas	Below FL 240--400 square miles x 4,000 feet
11			Above FL 240--800 square miles x 4,000 feet
12	T-3		36 square miles x 2500 feet

NOTES:

1. If high areas are located over low areas, establish a vertical buffer of 1,000 feet (or as assigned by the controlling agency) between high and low areas. Smaller areas may be used during temporary periods of radar or NAVAID outages.
2. Unusual attitudes, steep turns, and confidence maneuvers may be performed in a contact area.
3. Trail, fighting wing, fluid maneuvering, and formation wing work may be performed in a contact area.

