

SHARE THE AIR

MID-AIR COLLISION AVOIDANCE (MACA) AND FLIGHT OPERATIONS AT ALTUS AIR FORCE BASE



Mission:
**FORGING COMBAT MOBILITY FORCES...
DEPLOYING AIRMAN WARRIORS!**



ALTUS AIR FORCE BASE MID-AIR COLLISION AVOIDANCE PROGRAM

REVISED: 19 Jul 2019

***** WARNING *****

THE ENCLOSED MATERIAL IS FOR INFORMATIONAL PURPOSES ONLY! **IT IS NOT TO BE USED IN FLIGHT PLANNING OTHER THAN AS A SOURCE TO ENHANCE MID-AIR COLLISION AVOIDANCE.** ALL INFORMATION, DESCRIPTIONS, ROUTES, AND PROCEDURES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

***** WARNING *****

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INTRODUCTION

Mid-Air Collision Avoidance (MACA) is a very important topic within military and civilian aviation. This pamphlet was created as a source of information for aviators using the airspace near Altus Air Force Base (KLTS). The United States Air Force is committed to working with the civilian aviation community to keep our airspace safe. As part of our continuing public information program, the 97th Air Mobility Wing (97 AMW) would like to educate our civilian counterparts on the intensive military air operations at Altus AFB. Our goal is to heighten awareness and reduce the potential for mid-air collisions.

Since military missions are somewhat structured, there are certain places where you can expect to see us conducting our daily operations. Although the areas discussed are not all inclusive, the following information should give you a good idea of how and where we operate. Included within this pamphlet is information on locally-based and transient aircraft, training routes, traffic patterns, and arrival and departure routes.

The 97th AMW Safety Office is the office of primary responsibility (OPR) for the development, publishing, and maintenance of the Altus MACA program pamphlet. If you have any questions concerning any information within this pamphlet, please contact the 97th AMW Safety Office at **(580) 481-7289**.

We hope this guide proves useful in avoiding areas of congestion, determining the best routes of flight, and minimizing potential conflicts. We solicit your help in making the skies over Altus a safer place to fly. Thank you for your interest and support.

DANIEL I. MONTILLA, Maj, USAF
97 AMW Chief of Flight Safety

ALTUS AFB INFORMATION

Operating Hours:	Monday-Friday from 0900L to 0230L; closed weekends and holidays; exceptions by NOTAM
Location:	Coordinates N34°40.08' W99°16.06'
Nav aids:	Altus (LTS) VORTAC (CH 35/109.8 VHF) ILS: 17R (111.3)/35L (110.3) and 17L/35R (110.55)
Instrument Approaches:	ILS 17R/35L (Primary Instrument Runway) ILS 17L/35R (Primary Visual Runway) TACAN or VOR/DME 17R/35L, 17L/35R RNAV 17R/35L, 17L/35R Altus AFB Use Only: TACAN Charlie (IAF LTS 032/12) TACAN Delta (IAF LTS 110/12)
Airfield Lighting:	Rotating Beacon (1 Green, 2 White)
Runway Lighting:	Standard HIRL for 17L/35R and 17R/35L. MIRL for assault strip. Threshold Lights, Distance Remaining Markers all runways
Approach Lighting:	Cat I ALSF with sequenced flashing lights for 17L/35R and 17R/35L
Frequencies:	Air Traffic Control Tower.....119.65 Approach Control.....125.1 Ft. Worth Center.....N: 128.4; S: 133.5 ATIS.....109.8/273.5 WX AWOS at AXS (4nm NW).....118.825 Clinton-Sherman Tower (Clinton, OK).....119.6 Ft. Sill Approach Control (Lawton, OK).....120.55/118.6 Sheppard Approach Control (Wichita Falls, TX)....118.2 Military Training Routes common freq/FSS.....255.4
Phone Numbers:	97th AMW Airspace Manager.....(580) 481-6098 97th AMW Flight Safety Office.....(580) 481-7289 Airfield Operations Flight Commander....(580) 481-6407 Altus Approach Control...Primary.....(580) 481-6905 Secondary.....(580) 481-6159 Altus AFB Tower.....(580) 481-6833 Altus AFB AWOS/ATIS.....(580)-480-7807 Altus Municipal (AXS) AWOS.....(580)-477-1745 Airfield Management Operations.....(580) 481-6200 Airfield Manager.....(580) 481-5739 McAlester, Fort Worth FSS.....(800) 992-7433

LOCAL AIRCRAFT TYPES AND DESCRIPTIONS

BOEING C-17A “GLOBEMASTER III”

CLASS: HEAVY JET / SPEED: UP TO 350 KNOTS

This aircraft flies IR, VR, and SR routes for low level and airdrop training. It also produces a large amount of wake turbulence, which increases dramatically when configured for landing. Separation criterion for small aircraft landing behind a C-17A is **6 nautical miles**.



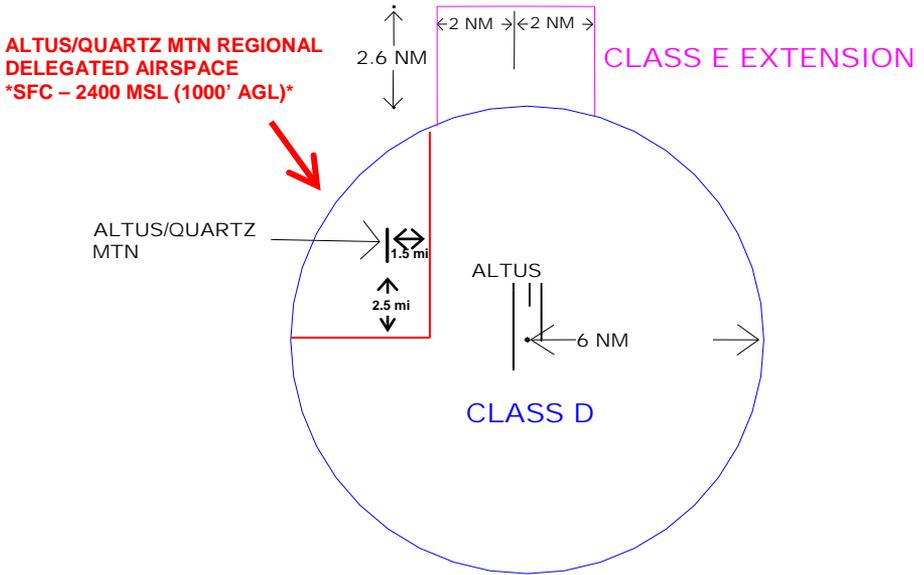
BOEING KC-135R “STRATOTANKER”

CLASS: HEAVY JET / SPEED: UP TO 350 KNOTS

This aircraft is much like a commercial B-707, but with larger, turbofan engines and heavier gross weight. It also produces a large amount of wake turbulence. Separation criterion for small aircraft landing behind a KC-135R is **6 nautical miles**.



ALTUS CLASS D AND E AIRSPACE



Note: Not drawn to scale.

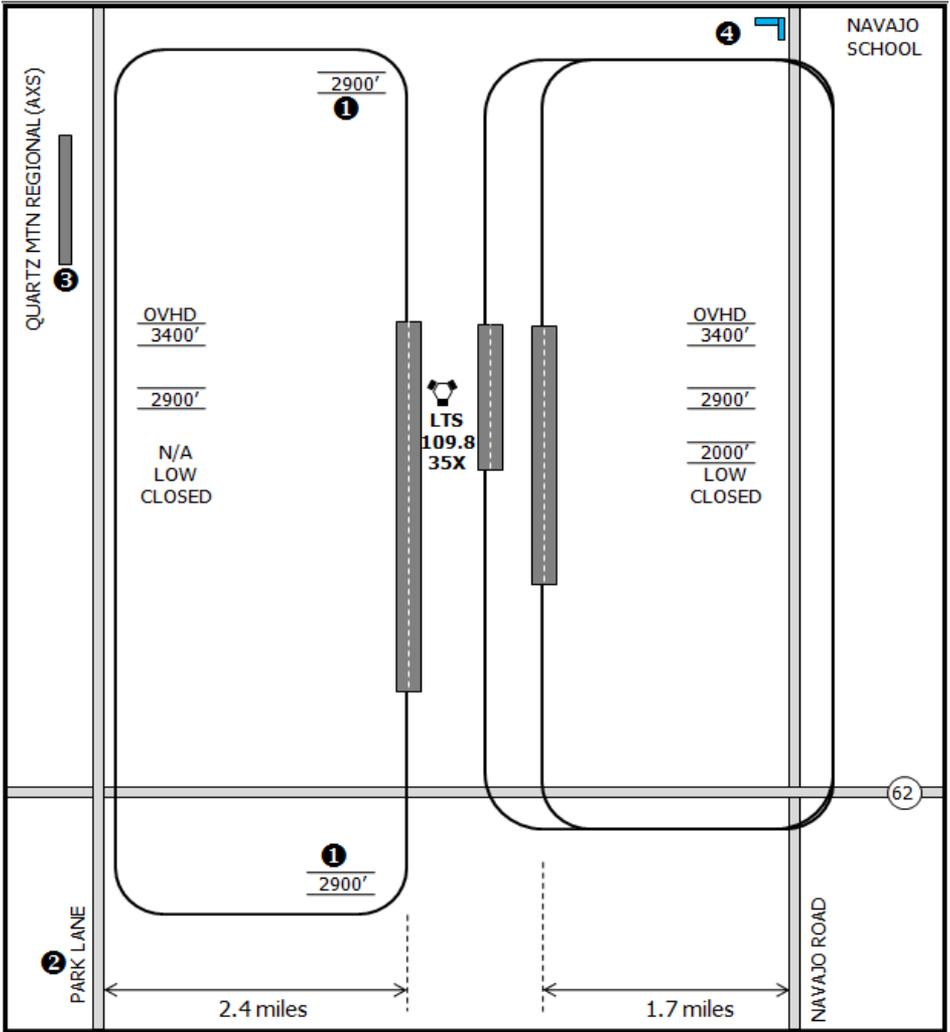
1. Altus Class D Airspace: Airspace from the surface up to and including 3900' MSL within a 6 NM radius of Altus AFB (published as 34 39 30 N & 99 16 00 W). Unless otherwise authorized by Air Traffic Control, an operable **two-way radio is required**. Two-way radio communication must be established with Altus AFB Tower prior to entry and thereafter, maintaining those communications while in the Class D airspace. Pilots of arriving aircraft should contact the tower on **119.65** and give their position, altitude, destination and any request(s). Radio contact should be initiated far enough from the Class D airspace boundary to preclude entering Class D airspace before two-way radio communications are established.

2. Altus Class E Airspace: Airspace including an area 2.6 NM north of the Class D airspace and extends from the surface to 2100' MSL. The Class E extension provides Part 71 coverage for IFR approaches and departures from Altus AFB.

3. Altus Quartz Mountain Regional Airport (AXS) Delegated Airspace: Airspace from 1.5 NM East of AXS extended runway centerline extending north, south and west to the Class D boundary, from the surface up to and including 2400' MSL. Aircraft proceeding beyond 2.5 NM

south of AXS shall contact Altus Tower (119.65) prior to turning east of extended runway centerline (visually defined as Hwy 283/Main St.) while in Altus Class D airspace. (See letter of agreement dated 19 Jul 04).

ALTUS VFR PATTERN OPERATIONS



East pattern: The pattern altitude is 2,900'

West Pattern: The pattern altitude is 2900'. Aircraft must be at 2900' prior to turning crosswind. If a 360 is required on downwind, the aircrew shall climb to 3,400' prior to their westbound turn. Descending back to 2900' shall not be accomplished until re-established on the downwind leg. The climb to 3400' shall be directed by Altus tower.

ALTUS VFR DEPARTURES AND ARRIVALS

- 1. Duke Tactical Departure.** No later than 3 miles, aircraft make climbing eastbound turn to 6,500' MSL (4500'-8500' MSL available on request) prior to continuing west toward Duke (LTS/261/14). Aircraft accelerate to 250 knots max and remain with 6 NM of the airfield.
- 2. Duke Acceleration Departure.** Aircraft fly runway heading, accelerating to 250 knots max and initiate a max effort climb to 6,500' MSL (3,600'-8,500' MSL available on request). Once leveled off, aircraft turns westward towards Duke.
- 3. Duke Beam Arrival.** Aircraft depart Duke usually at 7,500' MSL (4,500'-8,500' MSL available on request) until overhead the airfield and then perform 270 deg turn to landing runway.
- 4. Duke Downwind, Straight-In, Initial (Overhead), Teardrop (can also be Hi-Steep or Shallow).** These are a variety of tactical approaches that follow the same box like ground track beginning at Duke and then going either north to Mangum (near Scott airport) (LTS/301/14) or south to a point 5 miles west of the Olustee airport (LTS/228/15) before continuing east until established on an approx. 8 mile extended runway centerline. Altitudes are usually 3,600' or 7,500' MSL but can vary anywhere from 3,600'-8,500' MSL depending on the weather and type of arrival (Hi-Steep vs. Shallow).
- 5. Snyder Overhead, Straight-In.** During Runway 17 operations, aircraft fly from Snyder north to a point near Tom Steed Reservoir (LTS/045/15) then west to an 8 mile extended centerline. During Runway 35 ops, aircraft fly from Snyder south to the LTS/124/012 then west to an 8 mile extended centerline. Aircraft will overfly Snyder at 3,600' MSL and the altitudes vary from there.
- 6. Pattern Altitudes.** Overhead: 3,400' MSL; Normal VFR pattern: 2,900' MSL.

CLINTON SHERMAN OPERATIONS

- 1. Pattern Altitudes.** Overhead: 3,400' MSL; Normal VFR pattern: 2,900' MSL; NVG patterns: 4000' MSL; Extended VFR (10 mile downwind): 3,800' MSL
- 2. Pattern Saturation.** Max of 3 Aircraft for IFR Procedures & NVG Opse, 5 max for VFR training.
- 3. No Overfly.** C-17s and KC-135s are not allowed to overfly the towns of Elk City or Chanute.

TERMINAL RADAR SERVICE AREA (TRSA) AND APPROACH CONTROL AIRSPACE



1. **Altus TRSA:** The airspace encompassing a 15 NM arc off of the Altus VORTAC 325R clockwise to the 190R, to include the Altus Class D airspace, from the surface up to and including 7000' MSL; outside the Class D surface area from 3500' MSL to 7000' MSL. The purpose of the TRSA is to provide separation between all participating VFR aircraft and all IFR aircraft operating within the TRSA. **Pilots operating under VFR are highly encouraged to contact Altus Approach Control on 125.1 and use TRSA Services.** However, participation is voluntary on the part of the pilot. All Altus assigned aircraft operating under VFR participate and use TRSA Services.

2. **Approach Control Airspace:** Designated airspace includes the airspace within an approximate 25 NM radius of Altus AFB, from the surface up to and including 9000' MSL. There is a northeast extension around Hobart Municipal Airport and a south extension around Wilbarger County Airport. The south extension is from the surface up to and including 4,000' MSL.

MILITARY TRAINING ROUTES (MTRs)

1. The MTR program is a joint venture by the FAA and the Department of Defense (DOD). MTRs are mutually developed for use by the military for the purpose of conducting low-altitude, high-speed training. The routes above 1,500 feet AGL are developed to be flown, to the maximum extent possible, under IFR. The routes at 1,500 feet AGL and below are generally developed to be flown under VFR.
2. Generally, MTRs are established below 10,000 feet MSL for operations at speeds in excess of 250 knots. The IFR and VFR routes are as follows:
 - a) **IFR Military Training Routes (IR)**. Operations on these routes are conducted in accordance with IFR regardless of weather conditions.
 - b) **VFR Military Training Routes (VR)**. Operations on these routes are conducted in accordance with VFR except flight visibility shall be 5 miles or more; and flights shall not be conducted below a ceiling of less than 3,000 feet AGL.
 - c) **Slow Speed Military Training Routes (SR)**. Operations are similar to VR routes except weather is 1500 and 3 and the maximum speed is 250 knots.
3. MTRs with no segment above 1,500 feet AGL shall be identified by four number characters; e.g. IR1206, VR1207. MTRs that include one or more segments above 1,500 feet AGL shall be identified by three number characters; e.g. IR206, VR207. IFR Low Altitude Enroute Charts will depict all IR routes and all VR routes that accommodate operations above 1,500 feet AGL. **VFR Sectionals will depict military training activities such as IR, VR, MOA, Restricted Area, Warning Area, and Alert Area information.** Area Planning (AP/1B) Chart (DOD Flight Information Publication-FLIP) is published by the DOD primarily for military users and contains detailed information on both IR and VR routes. Visual depictions of the MTRs around Altus AFB can be found at <http://www.seeandavoid.org>
4. Nonparticipating aircraft are not prohibited from flying within an MTR; however, **extreme vigilance should be exercised when conducting flight through or near these routes.** Pilots should contact FSSs within 100 NM of a particular MTR to obtain current information or route usage in their vicinity. Information available includes times of scheduled activity, altitudes in use on each route segment, and actual route width. Route width varies for each MTR and can extend several miles on either side of the charted MTR centerline. When requesting MTR information, pilots should give the FSS their position, route of flight, and destination in order to reduce frequency congestion and permit the FSS specialist to identify the MTR which could be a factor.
5. **Altus AFB C-17s routinely use IR103, IR193/VR106 (same ground track), and VR190.** IR193/VR106 and SR217 begin and end at Sooner Drop Zone and are used daily, Mon-Fri, 0800-0230L, by C-17 3-ship formations conducting actual equipment airdrops on Sooner Drop Zone. Military aircraft are required to monitor UHF frequency **255.4** while on these routes. Frequency for Sooner Drop Zone is UHF **340.6**. These routes are flown between 300' AGL and 5,000' MSL and at speeds between 250 and 350 KCAS. Fighter aircraft may also schedule and fly these routes at speed up to 600 KCAS in 4-ship formations. The routes are generally active for only 30 minutes at a time. You may determine when the routes are active by contacting Fort Worth FSS prior to flight. If unable to de-conflict your route prior to flight you should attempt to cross these routes at a 90 degree angle and above 5,500' MSL.

NEAR MID-AIR COLLISION REPORTING

1. Purpose and Data Uses. The primary purpose of the Near Mid-Air Collision (NMAC) Reporting Program is to provide information for use in enhancing the safety and efficiency of the National Airspace System. Data obtained from NMAC reports are used by the FAA to improve the quality of FAA services to users and to develop programs, policies, and procedures aimed at the reduction of NMAC occurrences. All NMAC reports are thoroughly investigated by Flight Standards Facilities in coordination with Air Traffic Facilities. Data from these investigations are transmitted to FAA Headquarters in Washington, DC, where they are compiled and analyzed, and where safety programs and recommendations are developed.

2. Definition. An NMAC is defined as an incident associated with an aircraft in which a possibility of collision exists as a result of proximity of **less than 500 feet** to another aircraft, or a report is received from a pilot or a flight crew member stating a collision hazard existed between two or more aircraft.

3. Reporting Responsibility. It is the responsibility of the pilot and/or flight crew to determine whether an NMAC did actually occur and, if so, to initiate a NMAC report. Be specific, as ATC will not interpret a casual remark to mean that a NMAC is being reported. The pilot should state: **"I wish to report a near mid-air collision."**

4. Where to File Reports. Pilots and/or flight crew members involved in NMAC occurrences are urged to report each incident immediately:

- a) By radio or telephone to the nearest FAA ATC facility or FSS or,
- b) In writing to the nearest Flight Standards District Office (FSDO).

5. Items to be Reported.

- a) Date and time (UTC) of incident.
- b) Location of incident and altitude.
- c) Identification and type of reporting aircraft, aircrew destination, name and home base of pilot.
- d) Identification and type of other aircraft, aircrew destination, name and home base of pilot.
- e) Type of flight plans; station altimeter setting used.
- f) Detailed weather conditions at altitude or flight level.
- g) Approximate courses of both aircraft: indicate if one or both aircraft were climbing or descending.
- h) Reported separation in distance at first sighting, proximity at closest point horizontally and vertically, and length of time in sight prior to evasive action.
- i) Degree of evasive action taken, if any (from both aircraft, if possible).
- j) Injuries, if any.

PROFILE OF A MID-AIR COLLISION

During a 3-year study of mid-air collisions involving civilian aircraft, the National Transportation Safety Board determined that:

- The occupants of most mid-air collisions were on a pleasure flight with no flight plan filed.
- Nearly all mid-air collisions occurred in VMC during daylight, weekend hours.
- The majority of mid-air collisions were the result of a faster aircraft overtaking and hitting a slower aircraft.
- No pilot is immune; experience levels in the study ranged from initial solo to 15,000-hour veterans.
- The vast majority of mid-air collisions occurred at uncontrolled airports, below 3000' AGL.
- Most enroute mid-air collisions occurred below 8000' MSL, and within 25 miles of the departure or destination airport.
- In over one third of all mid-air collisions, flight instructors were onboard at least one of the aircraft.



ALTUS MILITARY TRAINING ROUTES CHART

ALTUS AIR FORCE BASE



Share The Air



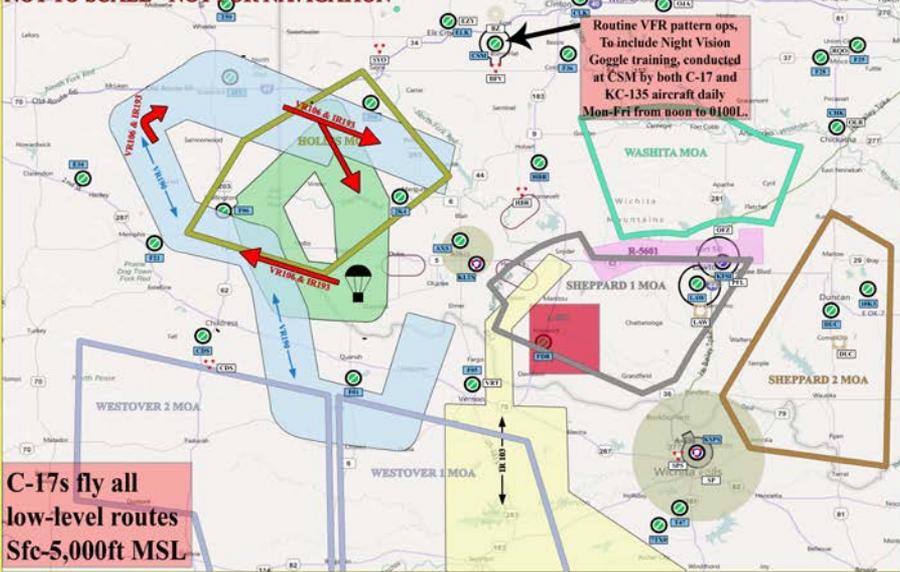
BOEING C-17 GLOBEMASTER III

- CLASS: Heavy jet (max gross weight 585,000 pounds)
- SPEED: 120 - 350 knots
- Utilizes various MRTs for low level and airdrop training
- Produces severe wake turbulence, especially when configured for landing
- Separation criterion preceding light aircraft is 6 NM

BOEING KC-135 STRATOTANKER

- CLASS: Heavy jet (max gross weight 322,500 pounds)
- SPEED: 130 - 350 knots
- Produces average wake turbulence
- Separation criterion preceding light aircraft is 6 NM

NOT-TO SCALE - NOT FOR NAVIGATION



THE THRILL!
Altus AFB trains over 1500 pilots a year in two different four-engine aircraft. This equates to more than 20,000 flying hours flown each year. In addition to flight training, Altus AFB is a primary site for training RAPCON and tower controllers. The airfield and traffic patterns are normally open from 0900 through 0230 hours Monday through Friday, and Saturdays as required. We rarely fly on Sundays or federal holidays. For your safety and ours, we provide this poster to point out our areas of operations.

PLEASE BE VIGILANT WHEN OPERATING IN AND AROUND ALTUS AFB AIRSPACE.

Please contact Altus RAPCON for traffic separation on the frequencies listed.

QUESTIONS:

Altus Safety Office: (580) 481-7280
Altus Airspace Office: (580) 481-6998

ALTUS AIR FORCE BASE
Depicted in tan on the poster. High density traffic pattern operations conducted Monday through Friday from 0900L to 0230L, from the surface to 4000' MSL. In addition to Altus AFB aircraft, numerous F-30, F-37 and F-1's from Sheppard AFB conduct practice approaches at Altus AFB. We encourage all aircraft transiting within 25 miles to contact Altus approach (VHF 125.1).

RESTRICTED AREA R5601
The Fort Sill live munitions area is depicted in red. The airspace from the surface to 4000' MSL is restricted continuously due to the live firing of artillery.

CIVILIAN AIRBORNE AREAS
The Altus Quartz Mountain Regional Airport northwest and southwest practice area are depicted in purple. These are not depicted on sectional, or enroute charts. General aviation VFR maneuver training is accomplished from 500' AGL to 6500' MSL. These areas are not formally defined but presented here for increased situational awareness.

MILITARY TRAINING ROUTES (MTRs)
Student pilots train for low-level ingress/egress combat operations on these routes. This map depicts the VR 106, VR 107, VR 108, and VR 109 routes commonly flown in the Altus local flying area. (Note that SR V's are not depicted on sectionals.) These routes are flown by C-17s between 300 AGL - 5000' MSL and at speeds between 250-350 KIAS. Fighter aircraft may schedule and fly these routes at speeds up to 600 KIAS in 4-ship formations. The routes are generally only active for 30 minutes at a time. You may determine when the routes are active by contacting Fort Worth Flight Service Station prior to flight. If unable to determine your route prior to flight you should attempt to cross these routes at a 90 degree angle and above 5000' MSL.

ALTUS AFB LOCAL FREQUENCIES

- 125.10 Altus Approach
- 119.65 Altus Tower
- 121.85 Altus Ground
- 120.65 Altus Clearance
- 109.8 Altus Atis
- 122.8 Altus Muni Unicom
- 128.4 Fort Worth Center

LEGEND

- Frequently Used Holding Patterns
- Sooner Drop Zone
- Air Field

MILITARY OPERATING AREAS (MOA)

The Hollis and Westover 1 & 2 MOAs are active Monday through Friday 1 hour prior to sunrise to 1 hour after sunset. The airspace is from 5000' MSL up to FL230 by letter of agreement between Fort Worth ATFC Center and Sheppard AFB RAPCON. F-36s from Sheppard AFB, conduct operations inside SOLO STUDENT FLIGHTS for acrobatics, and formation training.

SHEPARD 1 & 2 MOAs

The Sheppard 1 & 2 MOAs are active Monday through Friday 1 hour prior to sunrise to 1 hour after sunset. The airspace is from 6000' MSL up to but not including FL 180. F-16s conduct acrobatic, spin, and formation training. SOLO STUDENT PILOTS are permitted in these areas with less than 35 hours flying time.

WASHITA MOA

The Washita MOA is active Monday through Friday 1 hour prior to sunrise to 1 hour after sunset. The airspace is from 6000' MSL up to FL260 by letter of agreement between Fort Worth ATFC Center and Sheppard AFB RAPCON. A1-39s conduct high speed fundamental fighter maneuvers and initial air-to-air combat training in this airspace.

A-561 FREDERICK MUNICIPAL AIRPORT: Very HIGH DENSITY T-37 student training in progress from surface to 4,000' MSL. Pattern speeds are up to 200 knots. All military traffic communicates on Uniform radio frequencies. The runway supervisory unit provides traffic advisories on 120.8. Frederick Unicom is 122.8. Military operations occur Monday through Friday during daylight hours.