12 May 2025

R-2515 User's Handbook

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Available via R-2515 website or R-2515 SharePoint (CAC required).

RELEASABILITY: There are no releasability restrictions on this publication.

OPR: 412 OSS/OSOA

Certified By: 412 OSS/OSOA
(Dr. Lisa M. Mercer)

Supersedes: R-2515 User's Handbook, 11 Sept 24

Pages: 20

This handbook outlines policy and procedures to used operate within Restricted Area 2515 (R-2515). All airspace users must be familiar with this handbook and exercise good judgement for situations not covered. Ensure all records generated because of processes prescribed in this publication adhere to Air Force Instruction (AFI) 33-322, Records Management and Information Governance Program, and disposed in accordance with (IAW) the Air Force Records Disposition Schedule which is in the Air Force Records Information Management System. Direct recommended changes and questions to the Office of Primary Responsibility (OPR). The waiver authority for this manual is the 412 OG/CC. Waiver requests should be submitted to the OPR via a Concept of Operations (CONOP).

SUMMARY OF REVISIONS

1.2, 1.3, 1.5, 1.6, 1.11., 1.15, 2.1, 6.9, 6.10, Attachment 1 and 3.

Chapter 1: General

1.1. **OPR:** R-2515 Airspace Management Office (412 OSS/OSOA): E-mail: 412OSS.OSO.R-2515AirspaceMgr@us.af.mil | DSN: 527-2515; COMM: (661) 277-2515.

1.2. **Major Range and Test Facility Base (MRTFB).** Title 10 USC Section 4173, *Department of Defense Test Resource Management Center;* Department of Defense Directive (DoDD) 3200.11, *Major Range and Test Facility Base (MRTFB);* DoDD 5105.71, *Department of Defense Test Resource Management Center (TRMC)*; and DoDD 5141.02, D*irector of Operational Test and Evaluation (DOT&E)* designate R-2515 as a MRTFB. The 412 Test Wing (412 TW), the using agency of R-2515, conducts Research, Development, Test & Evaluation (RDT&E) in support of the Department of Defense (DoD). The MRTFB may be used by other DoD users, and users outside the DoD such as U.S. Government Agencies, state and local governments, allied foreign governments, and commercial entities.

- **R-2515 is not for recreational use/users.** Exceptions require advanced coordination with the R-2515 Airspace Management Office (412OSS.OSO.R-2515AirspaceMgr@us.af.mil).
- R-2515 excludes the Class D (when tower is operational). Refer to EAFBI 13-204 for guidance on Class D operating procedures applicable when tower is operational and Uncontrolled Airfield Operations applicable when tower is closed.
- DoD users requesting to transition R-2515 may do so, at the discretion of the OG/CC, by contacting the scheduling office (COMM: 661-277-4110/661-277-3940)._
- DoD users wanting to do more than simply transition R-2515 (e.g. conduct testing, training, etc.) must contact the Initial Point of Contact (IPOC) office (COMM: (661) 277-9266 | E-mail: 412TW.IPOC@us.af.mil).

1.3. **Participating/Non-Participating Aircraft.**

- "Participating aircraft" are under the command of, or sponsored by, the 412 TW/CC, non-DoD under Letter of Agreement (LOA) or Hold Harmless Agreement (HHA) and have received the annual R-2515 airspace briefing, have been scheduled IAW *EAFB Aircraft and Air/Ground Support Scheduling Guide*, and agree to operate non-exclusive use. Refer to paragraph 1.1..
- "Non-Participating aircraft" cannot or choose not to operate under the above conditions, e.g. passenger and/or cargo transport, etc.

1.4. **NASA.** NASA operations do not fall within the 412 TW's scope of authority. However, projects compliant with the R-2515 Handbook and EAFBI 13-204, that do not require any 412 TW assets, may be scheduled IAW the *EAFB Aircraft and Air/Ground Support Scheduling Guide*. In addition, proficiency and other support flights do not require coordination and may be scheduled IAW the *EAFB Aircraft and Air/Ground Support Scheduling Guide*.

- NASA projects that want to use 412 TW resources (other than just airspace) must be coordinated via the Initial Point of Contact (IPOC) office (COMM: (661) 277-9266 | E-mail: 412TW.IPOC@us.af.mil).

1.5. **Airspace Briefing.** R-2515 users are required to receive an annual R-2515 briefing. The briefing is available on the public website (https://www.edwards.af.mil/About/R-2508/).

1.6. **Scheduling.** Schedule in accordance with *EAFB Aircraft and Air/Ground Support Scheduling Guide* which is available on the R-2515 public website (https://www.edwards.af.mil/About/R-2508/). Once scheduled, aircrew will be assigned an operations number. All aircraft require an operations number or Prior Permission Required (PPR) number to enter R-2515. First responders (with an active LOA), who are responding to an active emergency inside R-2515, do not

require an operations number or PPR and may request entry directly from SPORT Military Radar Unit (SPORT) and/or the Federal Aviation Administration (FAA) controlling agency. First responders must avoid data collection, including photographs and videos, while operating in restricted airspace R-2515. Overflight of Edwards Air Force Base (EAFB) is prohibited unless the active emergency is within the base property boundary. Otherwise, remain north of HWY 58 and east of HWY 395.

1.7. **GPS Data**. The National Geospatial-Intelligence Agency (NGA) Edwards Support Team recommends that the GPS data in this handbook be used for informational purposes only. For current data, contact NGA ((661) 277-5050) or 412 TW/Range Safety ((661) 277-5297).

1.8. **Filming and Data Collection Requests.** Filming and data collection on Edwards AFB (EAFB) property shall be in accordance with DoDI 5410.16, *DoD Assistance to Non-Government, Entertainment-Oriented Media Productions*. Contact Public Affairs Office (DSN: 527-3824/COMM: (661) 277-3824).

1.9. **No Fly Areas.** Avoid 'no fly' areas laterally or vertically.

- Do not overfly the Air Force Research Lab (AFRL) below 5,300' MSL.
- Do not overfly Boron Mine property below 4,500' MSL.
- Do not overfly Edwards Main base below 1,500' AGL except for takeoff, landing, or airdrop operations.
- Avoid overflying Edwards base housing and the medical facility to the max extent possible. If overflight of base housing and/or the medical facility is necessary (for safety or test requirements), overfly at 3,000' AGL or higher.

1.10. **Notice to Airmen** (**NOTAM) / Drone NOTAM (DROTAM).** Airfield Management is responsible for publishing NOTAMs related to the airfield, while Airspace Management issues NOTAMs concerning the airspace. If SPORT is closed, users must notify R-2515 Airspace office so that a NOTAM can be issued for UAS work areas (excluding the ET-ITF sUAS area *when Tower is open*). DROTAMs are not published for activities within R-2515. However, DROTAMs are applicable immediately beyond the boundary of R-2515. For example, unmanned helicopter activity is routine at Mojave Airport, SFC – 8,900' MSL. The COA requires the user to publish a DROTAM at least 72-hours in advance. To view DROTAMs published for areas outside R-2515 use Skyvector (https://skyvector.com/).

1.11. **SPORT Military Radar Unit**. SPORT provides aircrews with C2 services to assist in accomplishing their missions within R-2515 and the Barstow and Buckhorn MOA/ATCAAs. While SPORT is open aircraft taking off from within the lateral boundaries of R-2515 will contact SPORT on Muroc Common or discrete mission frequencies prior to takeoff for an airspace picture. Although C2 is not an ATC function, to support the AFTC mission in a dynamic Special Use Airspace (SUA) environment, SPORT MRU controllers shall provide the following C2 service functions using phraseology and techniques found in FAA Orders JO 7110.65 and 7610.14. Participating aircrews shall comply with all C2 instructions issued by SPORT. If unable to comply with SPORT C2 instructions, aircrews will immediately advise SPORT of their intentions. SPORT C2 services include: radar monitoring, radar traffic advisories, safety alerts, boundary calls, tactical maneuvering traffic calls, radar vectoring, issuing flight information, arrival sequencing, de-conflict aircraft and/or airspace, issue altitudes and/or headings, establish aircraft on approach, control of designated airspace for special use (e.g., Spin Areas, Cords Road etc.) within specified altitude strata, within specified airspace blocks or geographic areas, coordinate special operating requirements established by Safety Review Board (SRB) or other flight safety direction with SPORT for execution, control airborne access into the PIRA and Alpha Corridor. Aircraft must establish 2-way radio communication with SPORT before entering R-2515 (when SPORT is open). All directions to evacuate the assigned airspace in R-2515 or comply with any of the requirements or restrictions thereby imposed are mandatory. Responsibility for safety of flight remains with the pilot.

• Aircraft will advise SPORT prior to making radical horizontal or vertical maneuvers.

• Participating aircrews shall operate in visual meteorological conditions (VMC) and adhere to the concept of VFR to the maximum extent possible. When participating aircrews recognize the inability to maintain VMC, they shall immediately notify SPORT and await SPORT (or Edwards Tower if departing) instruction prior to entering IMC. SPORT shall aid aircrews by providing traffic advisories and a 5-mile lateral or a 1,000 foot vertical separation safeguard below 29K feet and a 5 mile lateral or 2,000 feet vertical safeguard at 29K feet and above from other observed participating aircraft. This separation safeguard shall be applied until the aircraft re-encounters VMC and notifies SPORT. Participating aircrews shall comply with instructions issued by SPORT and shall accept the separation safeguard criteria. If unable to comply with SPORT instructions, aircrews shall immediately advise SPORT of their intentions.

• SPORT will not approve more than one aircraft at a time to enter IMC conditions within the same work area (Cords Road East, Cords Road West, Black Mountain East, Black Mountain West, Nolos). SPORT will not approve any aircraft to enter IMC when the total number of aircraft in R-2515 exceeds eight.

• Participating aircrews may utilize published obstacle departure procedures when departing into IMC and published instrument approach procedures when arriving IMC, but must remain within the confines of R-2515 when encountering IMC under SPORT control. The Minimum Safe Altitude within 25 NM of EDW VORTAC is 7,700 MSL. The highest minimum vectoring altitude within R-2515 is 7,000 MSL. SPORT cannot issue IFR clearance. Aircrews uncomfortable with own terrain/obstruction clearance should not penetrate IMC. IFR clearance requires a transfer of airspace altitudes and handoff to the air traffic control controlling agency.

• Pre-Brief. Participating aircraft must submit a Pre-Briefing to SPORT prior to takeoff. Aero Club is exempt from this requirement. This permits SPORT to actively plan de-confliction. The primary delivery method for Center On-Line (COOL) users is from the Sign Out process in COOL. Other methods include text email, or by submitting the pre-formatted sheet available on the public R-2515 Airspace Website. SPORT email address is 412OSS.SPORT.Ops@us.af.mil and fax number is 661-277-8863

• Mission Services. SPORT has the capability to provide service on discrete frequencies for missions requiring specialized handling. Contact SPORT to coordinate the needs of your mission.

• The FAA could request portions of R-2515 during periods of inclement weather. SPORT will determine if or when airspace may be released.

1.12. **FAA Controlling Agency.** When R-2515 is not scheduled for DoD use, it is released to the FAA controlling agency for joint-use. The FAA does not provide services within R-2515.

1.13. **Manned vs Unmanned Aircraft Teaming (MUAT)**. Manned aircraft will avoid un-manned aircraft by 1000' vertical or 3NM horizontal. Manned aircraft chasing/working with un-manned aircraft are exempt.

1.14. **Altimeter Setting.** Aircraft should use the altimeter setting given by SPORT, or the ATIS. Test aircraft may use 29.92 at altitudes as required by test parameters within R-2515. If test aircraft require an altimeter setting other than the Edwards local altimeter, annotate it on the SPORT pre-brief sheet.

1.15. **Lights Out Operations.** Aircraft position lights shall remain on while transiting to/from R-2515 and may be turned off when established within the restricted area (excludes R-2508). Crews shall maintain 2-way communication with the controlling agency at all times and advise the controlling agency when starting/stopping operations.

1.16. **Chaff / Flares.** Comply with CJCSM 3212.02, *Performing Electronic Attack in the United States and Canada for Tests, Training, and Exercises*, AFI 11-214, *Air Operations Rules and Procedures*, AFM

13-212V1 Edwards AFB Supplement," *Range Planning and Operations*, AF IMT 813, *Request for Environmental Impact Analysis*, and annual waivers (kept by 412 CS/SCOTS 527-4763).

1.16.1. Chaff is authorized above 5,000' AGL.

1.16.2. Chaff is not authorized on MTRs.

1.16.3. Flares are authorized above 5,000' AGL. Do not release over EAFB below 15,000' AGL.

1.16.4. Advise SPORT prior to any chaff/flare release.

1.17. **ADS-B/MODE C.** ADS-B or a transponder equipment with Mode C is required to operate in R-2515. If the aircraft's ADS-B or MODE C becomes inoperable while airborne, aircrew should notify SPORT. SPORT may instruct aircrew to exit R-2515 or continue mission. All aircraft, regardless of formation status, are required to squawk unless directed otherwise by SPORT or specified by coordinated test parameters. This does not apply to UAS remaining within defined UAS areas, except when using the Four Corners UAS Work Area.

Chapter 2: SPORT Assigned Work Areas

2.1. The work areas depicted in *Figure 1* may be assigned to aircrew by SPORT. SPORT must coordinate with other agencies for aircrew to use the airspace outside the boundaries of R-2515. Therefore, the airspace outside R- 2515 is not available when SPORT is closed. SPORT will assign altitude restrictions, as needed, for each work area. (See Attachment 1 for lat/longs.)

2.2. For non-Edwards users navigating the Barstow MOA and East/West ATCAAs, follow these guidelines:

- Utilize the airspace primarily designated for Edwards AFB flight activities, including entry/exiting.
- Barstow operational hours are Monday to Friday, 0600-2200L, and other times specified by NOTAM.
- Use Edwards' altimeter.
- When operating in Barstow East/West ATCAA request the appropriate lower MOA airspace.
- Request FL240 and above in Barstow East ATCAA, real-time, with SPORT. Expect a 15-minute delay.
- **USE CAUTION**. The ATCAAs over the Barstow MOA have different boundaries from the MOA below to prevent spill-outs into LA ARTCC airspace (REF: FAAO 7600.10 and R-2508 Handbook).
- For rotary-wing aircraft entering or exiting R-2502E:
    - Maintain VMC and squawk VFR (1200) with altitude encoding activated.
    - Refrain from conducting mission activities during transition.
    - Avoid R-2515 during transition.

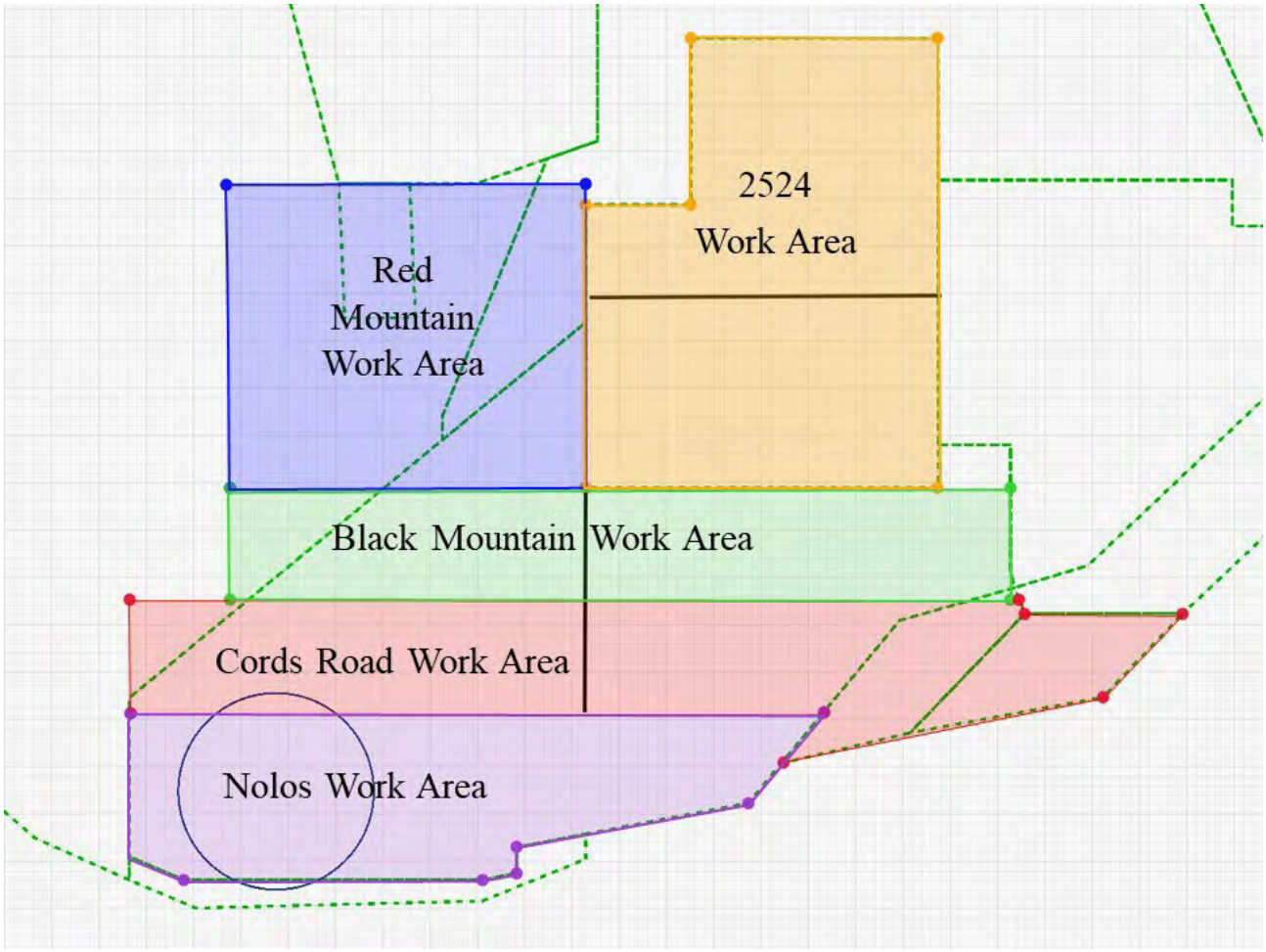

Figure 1. SPORT Assigned Work Areas Map

Chapter 3: Unmanned Aircraft Systems (UAS)

3.1. **Concept of Employment (CONEMP).** All USAF units operating sUAS must have a CONEMP when operating on or off military installations. AFMC RDT&E units and USAFA RDT&E may use an approved test plan in lieu of a CONEMP. The 412 OG/CC delegated *administrative* oversight of EAFB DoD and civilian sUAS ops to ET-ITF. (See Attachment 2 for lat/longs.)

3.2. **Class D**. sUAS ops within the Class D, when Tower is open, are outlined in EAFBI 13-204.

- **ET-ITF (Emerging Technologies Integrated Task Force) UAS Area.** Surface to 200' AGL when the Class D is active. When the Class D is not active, schedule IAW *Edwards AFB Aircraft and Air/Ground Support Scheduling Guide*, and a NOTAM must be published. See EAFBI 13-204 for more information.

3.3. **Lost Link**. In the event of a lost link, the UAS will be programmed to remain within R-2515 or fly a precoordinated contingency routing to exit R-2515 (as approved via a COA) and, if able, squawk 7400. The PIC will immediately notify SPORT (661-277-6184) and state intentions. In the event SPORT is not available, the PIC will contact the FAA controlling agency and state intentions.

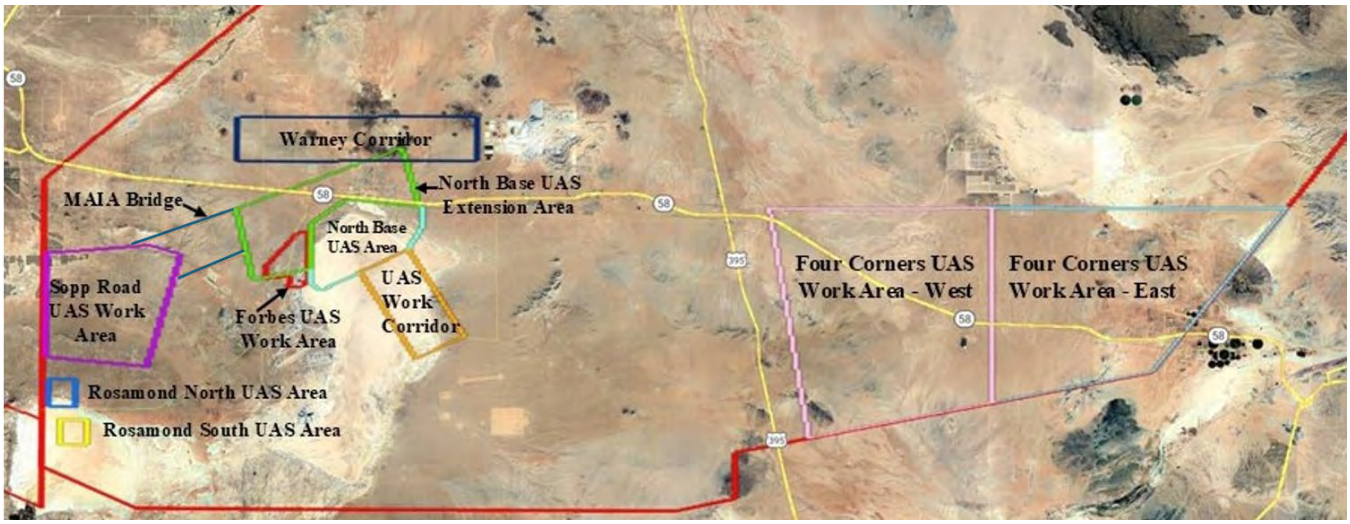

Figure 2. UAS Work Areas

3.4. **UAS Corridor.** 5000' AGL to 10,000' AGL. Only used to transit above the Class D to the Precision Impact Range Area (PIRA).

3.5. **Four Corners UAS Work Area.** 8,000' MSL and above. SPORT may release 1,000' above and below the UAS. NOTE: UASs are not restricted to operating in Four Corners and may coordinate alternate work areas with SPORT.

3.6. **Warney Corridor.** 500' AGL to FL200. Located along the southern boundary of Cords Road (extends 1 mile from centerline and is 11 miles long). Not authorized for use simultaneously with the Maia Bridge, NB Extension, and the North SPIN.

3.7. **North Base UAS Work Area (NB Area).** Vertical limits are surface to 10,000' MSL.

3.8. **North Base UAS Extension Area (NB Extension).** Vertical limits are surface to 4,800' MSL.

3.9. **Forbes UAS Work Area.** Vertical limits are surface to 500’ AGL/3,100’ MSL.

3.10. **Rosamond North UAS Area.** Vertical limits are surface to 500’ AGL.

3.11. **North Exhibit Area.** Located within the Rosamond North UAS Area. Vertical limits are surface to 400’ AGL. Falls within a radio blind spot. Communication with ATC is not required. Cannot be activated simultaneously with Rosamond North.

3.12. **Rosamond South UAS Area.** Vertical limits are surface to 3,000’ AGL. Not authorized when RWY 05 or PIRA Supersonic Corridor is active.

3.13. **SOPP Road UAS Work Area.** Vertical limits are surface to 500’ AGL/3,800’ MSL.

3.14. **Maia Bridge.** The airspace combines with other UAS areas to create an 18-mile corridor, 2 miles wide. When used, SOPP Road, NB UAS Area, and NB UAS Extension may also be scheduled. Must be scheduled during non-peak 412 TW flying, e.g. early mornings, evenings, holidays, down days, or weekends. Not authorized for simultaneous use with the Warney Corridor. Not authorized for simultaneous use with North/West Spin Areas above 11,000’ MSL. Can be scheduled 500’ AGL – FL200.

3.15. **R-2515 Entry and Exit Procedures for UAS.** Point Grizzly entry altitude is 8,500’ MSL. Point Vegas exit altitude is 7,500’ MSL. All other entry/exit point crossing altitudes are as coordinated. (Red Mountain: 35 21.4500, -117 35.4180 / Reaper: 35 10.4832, -116 49.1340 / Grizzly: 34 53.1498, -117 13.2720 / Vegas: 34 41.3168, -117 26.0520 / Rosamond: 34 49.6668, -118 05.8020).

Figure 3. UAS Entry / Exit Points

Chapter 4: Drop Zones (DZ) / Landing Zones (LZ)

4.1. **General.** When active, avoid these areas. For DZ data, visit the Test Parachute Program (TPP) SharePoint site: https://usaf.dps.mil/sites/22616/412OSS/SitePages/OSS-Test-Parachute-Program.aspx. Non-EAFB units must have an approved test plan and/or Inter/Intra Agency Support Agreement (ISA). TPP will conduct initial and recurring surveys in accordance with AFI 13-217. Jumpers must review the 412 TW Jumpers Agricultural Brief located on the TPP site. For environmental questions, 412 CEG/CEVA at (661) 527-9224. For archaeology information, (661) 277-1413.

4.2. **Scheduling.** For PB-8 and ENAD, schedule the DZ, R-2515, Buckhorn MOA, & Alpha corridor. For Erickson East & West, schedule the DZ, Buckhorn MOA, & Alpha corridor. If using PB-8, also schedule West Range, Downfall Tower, and Recovery.

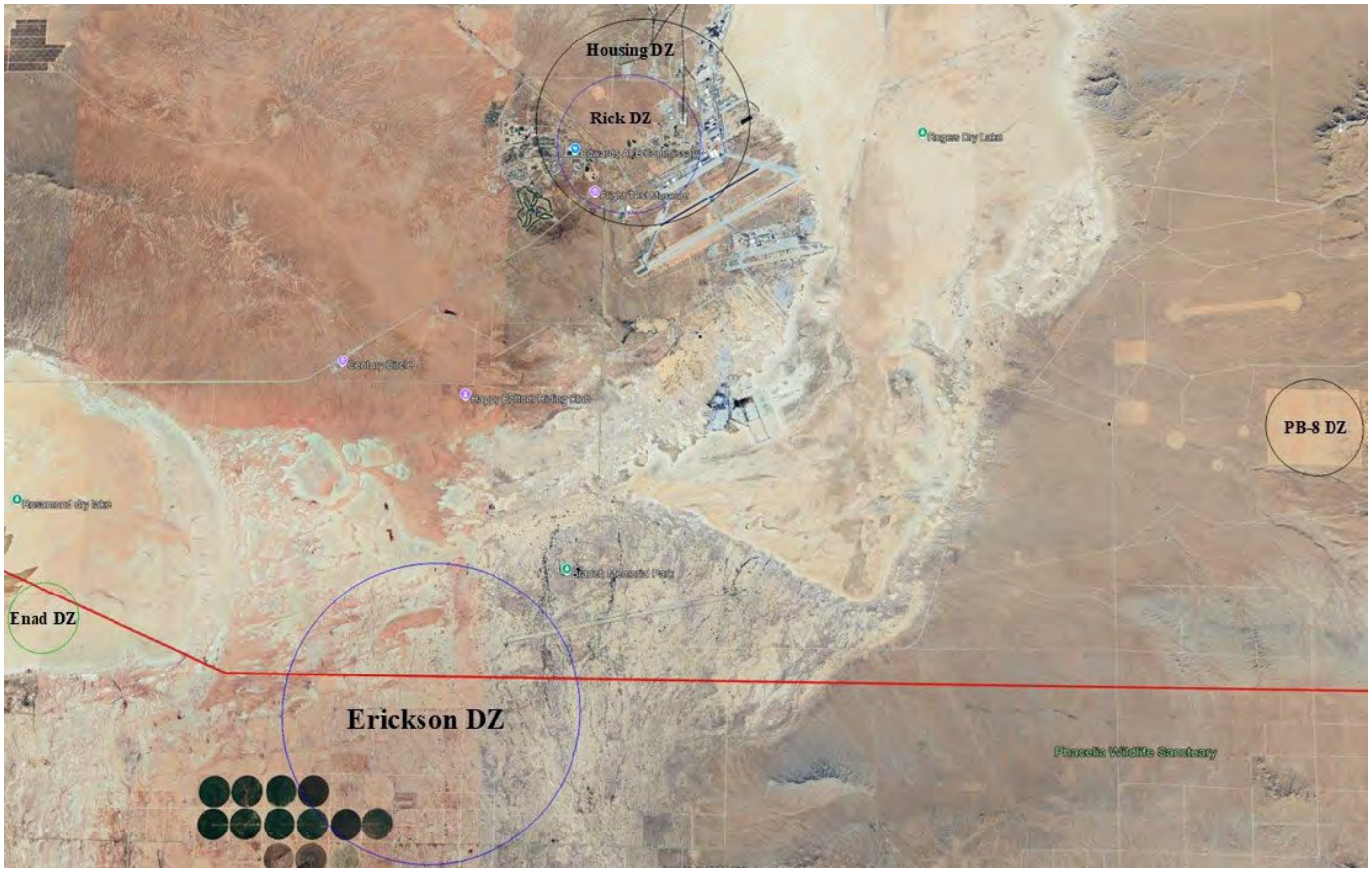

Figure 4. DZs

4.3. **Erickson DZ.** (34 47.7972, -117 58.1640 / 34 47.7972, -117 57.1320 / 34 47.2662, -117 57.1320 / 34 47.2662, -117 58.1820) Published on the Talonpoint (https://talonpoint.net), available to DoD aircraft, for cargo and personnel drops. Non-412 TW users shall have a MOU. Center point: N34-47- 31.9/W117-57-39.4. Avoidance: 2 NMR from center.

4.4. **Enad DZ**. (34 48.9498, -118 05.7540 / 34 48.9786, -118 02.4840 / 34 48.4452, -118 02.4780 / 34 48.4164, -118 05.7480) Seasonal DZ published on Talonpoint (https://talonpoint.net), available to DoD aircraft for personnel and cargo drops. Non-412 TW users shall have a MOU. May be completely under water in rainy months (Dec – Mar). Not usable when wet.

4.5. **PB-8 DZ.** (34 52.0788, -117 43.8720 / 34 52.0788, -117 42.3300 / 34 51.0690, -117 42.3240 / 34 51.0690, -117 43.8720) Published on the Talonpoint (https://talonpoint.net), available to DoD aircraft, for personnel and cargo drops. Non-412 TW users shall have a MOU. Center point: N 34-51.574/W 117-43.097, surface to unlimited. Refer to AFM 13-212V1 Edwards AFB Supplement, *Range Planning and Operations*, and the DZ survey for additional range information.

4.6. **Housing DZ.** (34 57.4764, -117 56.6340) Test Parachute Program only. This DZ is limited to non-static line drops with all release points inside the 1.5 avoidance area. Center point: EDW 249.7/10.55. Avoidance area: 1.5 NMR from center / 2.5 NMR for HAHO jumps. Altitude: surface to 500' above the active altitude (no higher than 13,000' MSL). DZ is .5 NM from the EOD no fly area. The West Spin Area and Housing DZ shall not be active simultaneously. TPP Jumpers shall avoid the EOD Range when using the Housing DZ.

4.7. **Rick DZ.** (34 55.4370, -117 54.6480) Test Parachute Program only. The Rick DZ is located at the Fitness Center Track with a 1 NMR avoidance zone.

4.8. **Rosamond LZ**. LZ is only activated at the direction/approval of 412 OG/CC. Submit requests to 412 OSS/OSA NLT 30-days prior to operation (s53d74@us.af.mil). Schedule the Buckhorn MOA.

4.9. **South Rogers LZ**. LZ is only activated at the direction/approval of 412 OG/CC. Submit requests to 412 OSS/OSA NLT 30-days prior to operation (s53d74@us.af.mil). Schedule the Buckhorn MOA.

Chapter 5: Supersonic Operations

5.1. **Sonic Boom Log.** IAW DAFMAN 13-201, *Airspace Management*, submit supersonic activity using the form in Center Operations On-Line (COOL) under Post Mission. IAW AFMAN 11-421, *Aviation Resource Management*, 1.11.3, SARM will manually update ARMs.

5.2. **Black Mountain Supersonic Corridor (BMSC)**. 8 NM wide. Supersonic flight is authorized: above FL300 within W117-57' to W 117-45; 10,000' MSL to unlimited between W 117-45 to Hwy 395; 500' AGL to unlimited between Hwy 395 to W 116-49. Minimum altitude is 500' AGL for supersonic flight below 10,000' MSL east of HWY 395.

- There is a small circular extension 9.5 NMR of N35-10.9/ W 117-09, NE of Harpers for supersonic turns or maneuvers. The southern limit of this area is N 35- 01.9'. This area is commonly referred to as the "keyhole." Advise SPORT when the keyhole is required to ensure deconfliction from Cords Road work area.

5.3. **Bell X-1 Supersonic Corridor (BX1SC).** Supersonic operations within the BX1SC must be IAW the Letter of Agreement maintained on the R-2515 Airspace Management Office SharePoint.

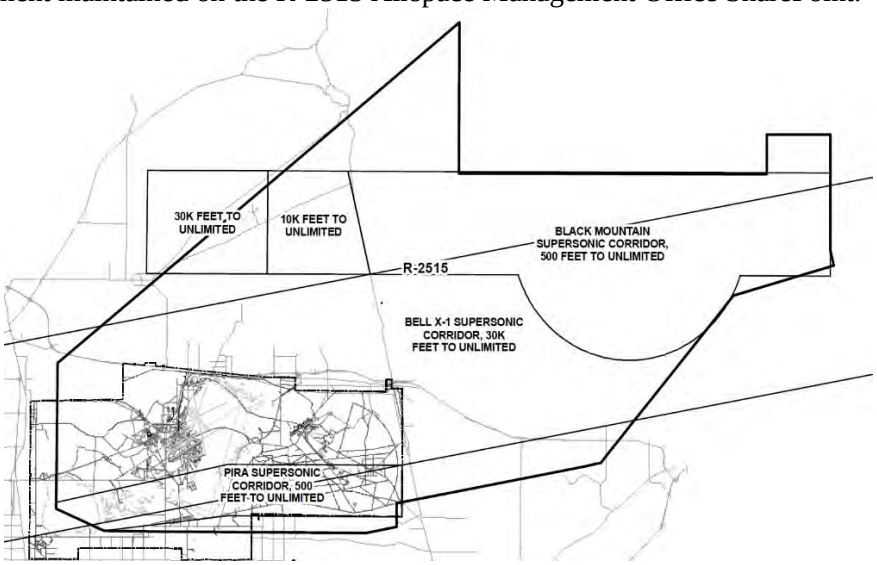

Figure 5. Bell X-1 and Black Mountain Supersonic Corridors.

5.4. **PIRA Supersonic Corridor.** 500' AGL to unlimited. Centerline: N 34-48.9/W 118-03.5 to N 34-51.4/W 117-31.5. Supersonic flight below 15,000' MSL is restricted W-E only. Be subsonic prior to exiting East Range and crossing HWY 395.

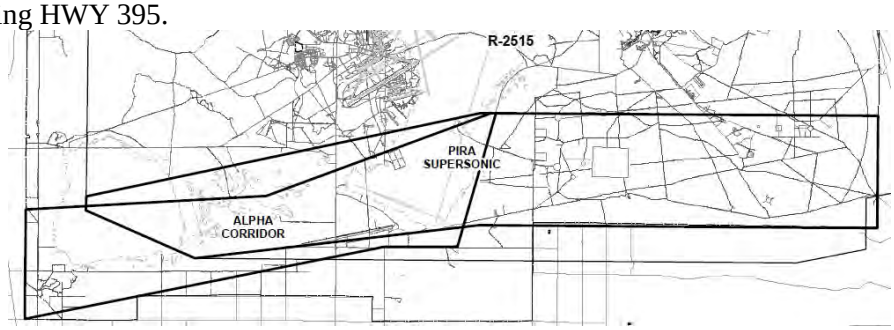

Figure 6. PIRA Supersonic Corridor.

Chapter 6: Other Work Areas

6.1. **Military Training Routes (MTR)** 412 TW is the originating/scheduling agency for several Instrument Training Routes (IR) and VFR Military Training Routes (VR). Aircrews flying published VR Routes will squawk 4000 unless directed otherwise. Complete descriptions are located in the FLIP Area Planning Publication, AP/1B Military Training Routes, and the MTR/TFR Briefing Guide located on the R-2515 Airspace Management SharePoint.

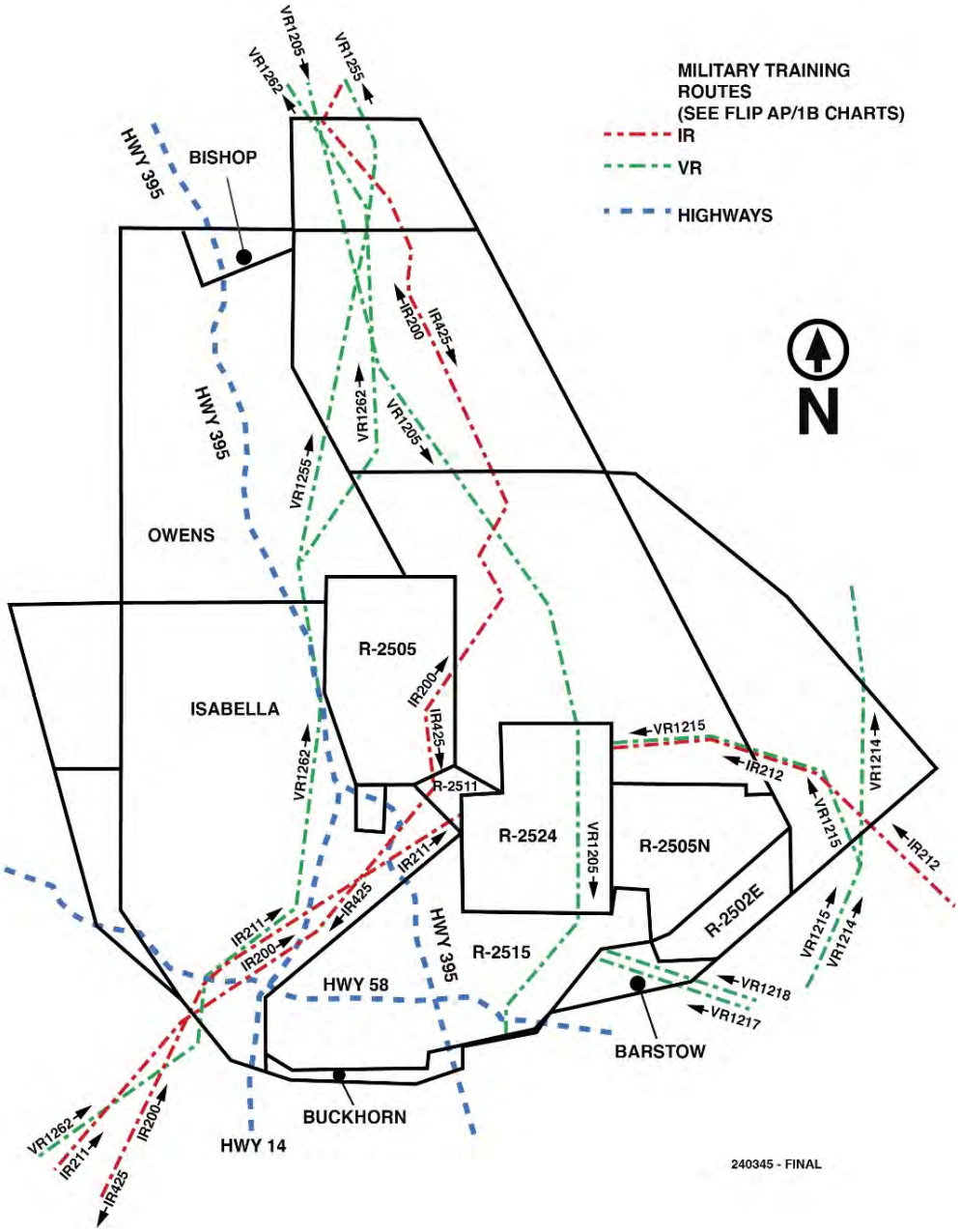

Figure 7. Military Training Routes (MTRs)

6.2. **Spin Areas. To use the spin areas, aircrew must schedule the specific spin area they intend to use and SPORT must be open.** Non-Edwards based aircrew, intending to use Spin areas, must contact SPORT at 661-277-6184 and forward pre-brief sheets, prior to departure from home station, to ensure SPORT will be open. Spin areas are 5 NM in diameter from 11,000' MSL to 45,000' MSL, except for the Lakebed Spin which starts at 6,000' MSL. Spin areas are activated for exclusive use and will be avoided when active. The West Spin and Housing DZ shall not be active simultaneously. The Mercury Spin Area shall not be used simultaneously with the East/South Spin areas. This area extends from 11,000' MSL to FL450.

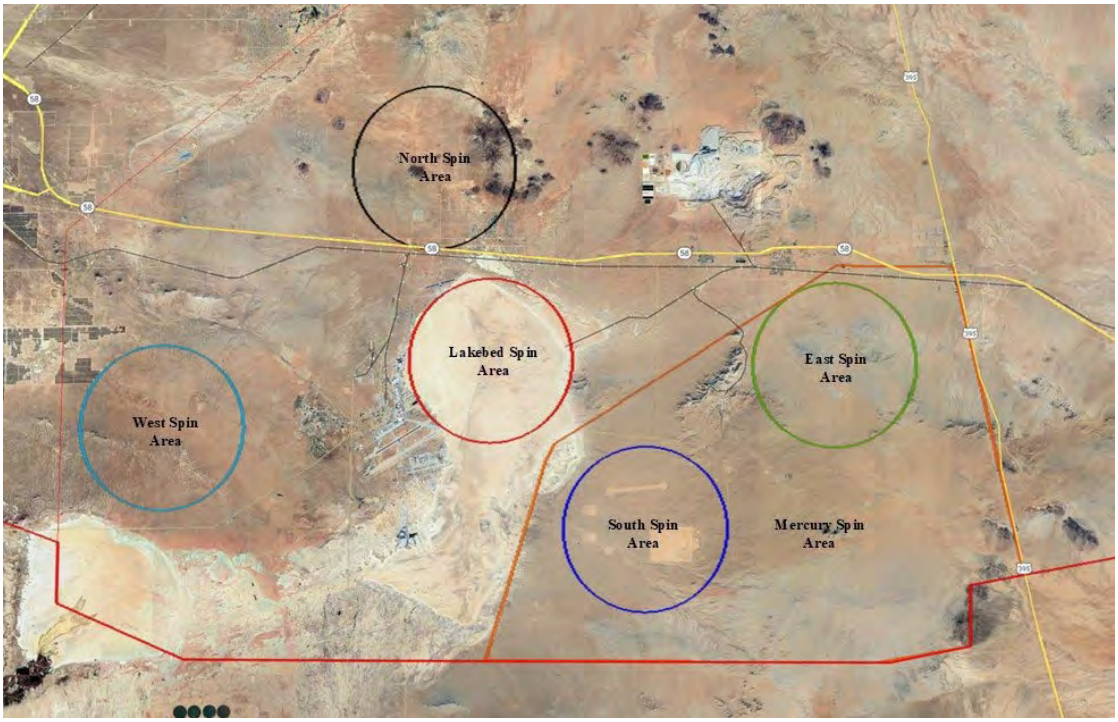

Figure 8. SPIN Areas

SPIN AREA	LAT/LONGs
North SPIN	35 02.998, -117 52.053
Lakebed SPIN	34 57.098, -117 49.853
West SPIN	34 54.998, -118 02.054
East SPIN	34 56.998, -117 37.053
South SPIN	34 51.998, -117 44.053
Mercury SPIN	35 00.033, -117 37.000 35 00.000, -117 32.625 34 50.653, -117 30.034 34 50.333, -117 32.049 34 48.500, -117 32.051 34 48.000, -117 35.502 34 48.052, -117 49.899 34 54.029, -117 47.784 34 54.565, -117 47.452

Figure 9. SPIN Areas.

6.3. **Air Force Research Laboratory (Det 7, AFRL).** Rocket engine firings are periodically conducted at the site. A potential hazard exists from blast fragments or toxic fumes/clouds. The hazard area begins at Leuhmans Ridge extending southeast along Mars Blvd to Haystack Butte. Coordinate with AFRL Site Operation Control Center, DSN 525-5632/ Comm 275-5632, before conducting flight below 5,300' MSL.

6.4. **Precision Impact Range Area (PIRA).** *See Figure 10.* Located on the eastern portion of EAFB, covers approximately 75 square miles, and is subdivided into the West Range, East Range, and the Precision Bombing (PB) 6 range. The PIRA is used for air-to-ground gunnery, photo and infrared resolution tests, spin tests, aerial decelerator tests, precision instrumentation tests, precision bombing tests, air-to-ground laser tests, weapon or munitions separation tests, object separation tests, cargo tests, payload tests, chute tests, and ground-to-ground laser tests. Contact the 412th Range Squadron Laser Safety Officer and the 412 TW Range Safety Office for laser operations. SPORT provides status advisories (hot or cold). PIRA operations are conducted IAW AFM 13-212V1. Aircrew should avoid this area when it is active.

6.5. **Alpha Corridor.** SPORT provides status advisories (hot or cold). Used for 'run-ins' to the PIRA.

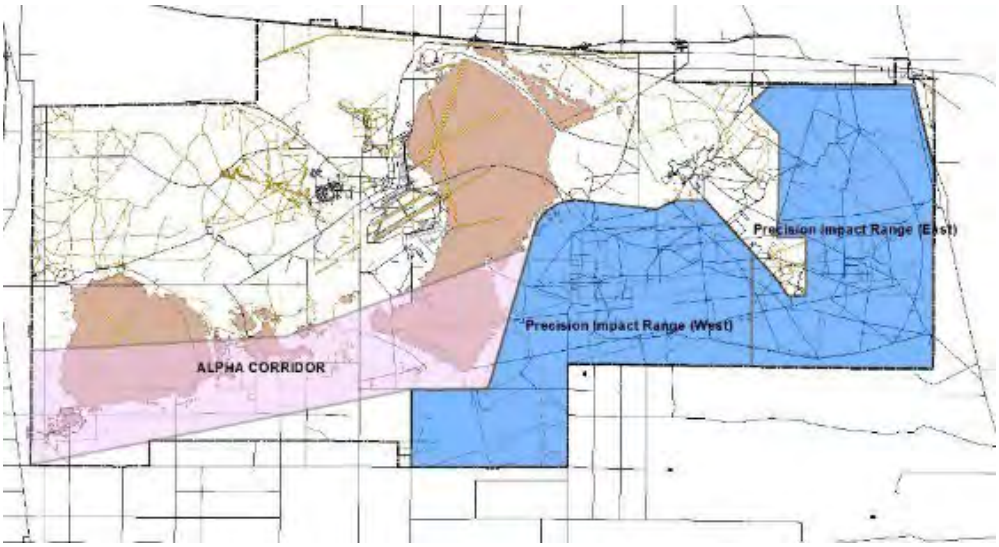

Figure 10. Alpha Corridor and PIRA.

6.7. **412 TW R-2515 Modified Air Refueling Track**. Refueling inside R-2515 requires day-of Flight Operations Authority (FOA) approval. Receiver units/Test Directors are primarily responsible for requesting track approval. See COOL or call 412 TW/OG (661-277-3306) for the name and number of the FOA on the day you want to refuel. The Modified Air Refueling track requires the activation of the Barstow MOA for maneuvering airspace. Remain West of R-2502 and South of R- 2524 unless overflight of R-2524 has been coordinated.

IP	CP	Altitude	Comm	Recommended Orbit
N34 57.70 W117 27.55	N35 00.77 W117 00.82	Coordinate with SPORT and AR>=FL130	Pri 275.2 Sec 339.225	CRS 080 L:35 x W:12

Figure 11. Modified Aerial Refueling Track.

6.8. **Terrain Following Routes (TFRs).** Intersecting TFRs will not be used simultaneously unless part of the same mission. TFR route width requires centerline navigation. All TFR except Haystack and Black Mountain are subsonic. All TFR route altitudes are 200' AGL to 1500' AGL except to avoid airports and noise sensitive areas. **For current route information, review the MTR Briefing Guide (located on the R-2515 Airspace Management SharePoint).**

- Haystack: N34 49.7 / W118 01 to N34 52.4 / W117 30.5.
- Desert Butte: N35 05 / W117 01 to N35 05 / W117 56 (underlies Cords Road).
- Harpers: N35 09.9 / W117 53 to N35 00.9 / W117 16.
- Saltdale: N35 18.9 / W117 47 to N35 02.9 /W117 01.
- Black Mountain: N35 10.9 / W117 25 to N35 10.9 /W117 02 (supersonic permitted).
- Rough One: N35 14.9 / W118 08 to N35 54.9 / W118 08.

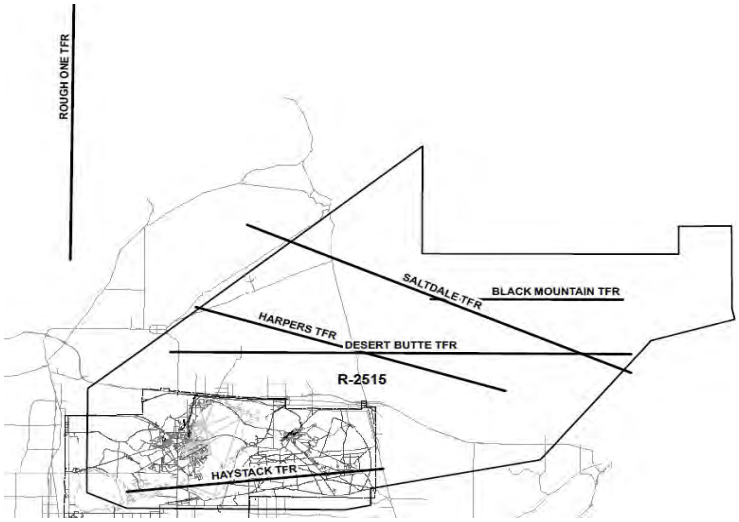

Figure 12. TFRs.

6.9. **Western Training Area (WTA).** The WTA is 1,000 square miles of desert used by the National Training Center (NTC) at Fort Irwin. NTC uses the WTA to train troops in brigade level maneuver warfare, prepare troops for urban and wilderness operations, and test armored units. (See attachment 3 for Lat/Longs)

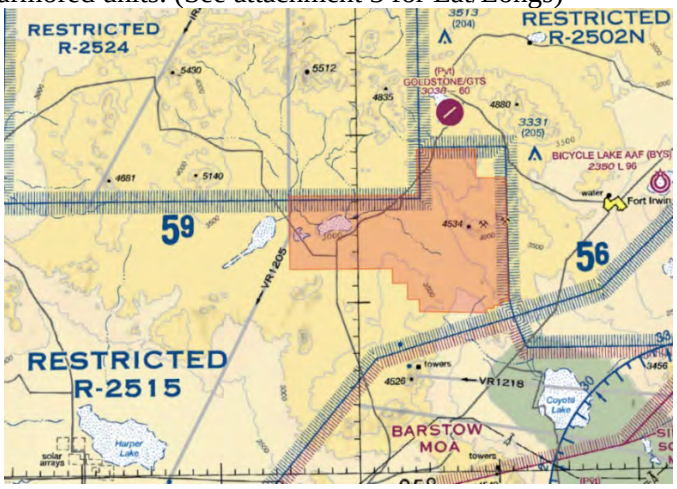

Figure 13. The WTA.

- Used daily, 24 hours (during exercise rotations).
- Common aircraft: AH-64, UH-60, LUH-72, MQ-1, RQ-7, MQ-9, sUAS

- Commonly used altitudes:
  - Helos: SFC – 500’ AGL
  - sUAS: SFC – 500’ AGL
  - SUA: 060B080
- Exercise planners will ensure all participants have reviewed the annual airspace briefing.
- Exercise planners will schedule IAW the 412 TW scheduling guide, at least 3-days in advance.
- To schedule the WTA, the user must send the email request to the scheduling office (412OSS.OSOS.ROC@us.af.mil) and the R-2515 Airspace Office (412OSS.OSO.R-2515AirspaceMgr@us.af.mil) so a NOTAM can be issued. Commonly seen NOTAMs:
  - (TYPE A/C) ACTIVITY IN BLACK MOUNTAIN AND CORDS ROAD FROM THREE SISTERS LAKEBED EASTBOUND TO R-2502N, SFC- (altitude) AGL.
  - sUAS ACTIVITY IN WTA (LAT/LONGs), SFC - 500' AGL.
  - UAS ACTIVITY IN WTA (LAT/LONG), (altitude).
- sUAS and UAS activity is authorized on a non-interference basis during 412 TW flying and must be scheduled via CSE.
  - Contact SPORT (661-277-6184) prior to departure to receive ‘real-time’ deconfliction instructions.
  - Notify SPORT when operations are complete.
- Exercise planners must verify that the appropriate NOTAM has been published prior to starting activities.
- All aircraft (to include the sUAS & UAS) must have an operational MODE 3C/A and have it in the ON position while operating inside R2515.
- All aircraft (to include the sUAS & UAS) must maintain 2-way communication with Desert Radio while operating within R-2515. Desert Radio will coordinate "real-time" with SPORT for access to R-2515.
- Participants will remain within the lateral confines of WTA at all times.

6.10. **Palmdale Corridor.** The PC is 8,000 MSL and below excluding the EDW Class D Airspace (see figure 8). The PC is for use by non-participants that require IFR service into/out of KEDW when SPORT is open. R-2515 participating aircraft must remain 1,000 above or three miles laterally from the boundary when activated, and can expect instructions from SPORT to assist with that requirement. Activations normally last for less than five minutes at a time. Non-participants that require use of the PC must comply with the following:

- Annotate “non-participant” as the first item in the remarks section of the flight plan.
- Arrival route: PMD..EDW (must be final two fixes).
- Departure route: EDW..PMD (must be first two fixes).
- Expect to be transferred directly to/from the FAA to Edwards Tower (318.1/120.7).
- Expect a visual approach for a left downwind (RWY 23) or a straight-in (RWY 05) from PMD.
- Once inside the Class D, the corridor is “COLD” and aircrew MUST remain within the confines of the Class D.

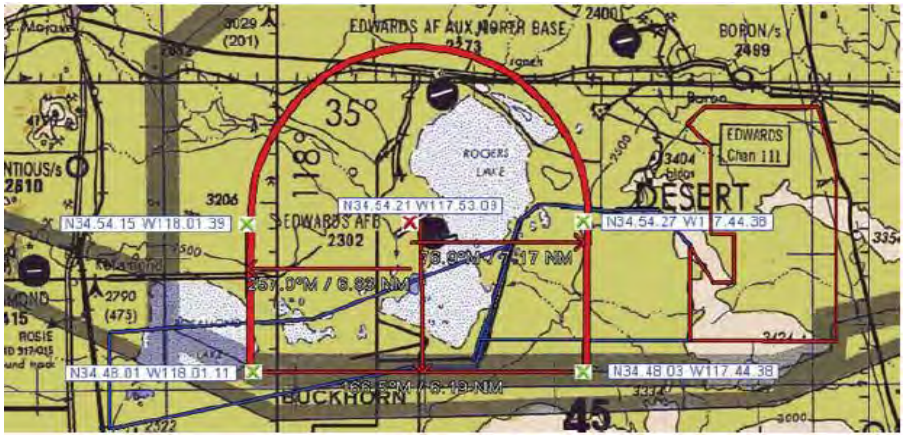

Figure 14. Palmdale Corridor

Attachment 1

SPORT Work Areas	LAT/LONGs
Red Mountain Work Area	35 37.410, -117 57.340 35 37.500, -117 35.549 35 37.492, -117 26.028 35 36.000, -117 26.050 35 27.984, -117 26.033 35 15.936, -117 26.051 35 15.936, -117 57.059
2524 Work Area **35 30.000** *splits this area into "North" and "South."*	35 47.766, -117 16.919 35 47.766, -116 55.385 35 15.962, -116 55.385 35 15.936, -117 26.051 35 36.000, -117 26.051 35 36.000, -117 16.919
Black Mountain Work Area (*See Black Mountain Supersonic Corridor for supersonic guidance.)* **-117 26.052** *splits area into "East" and "West"*	35 15.936, -117 57.059 35 15.936, -116 49.031 35 07.986, -116 49.031 35 08.039, -117 57.059
Cords Road Work Area (excludes Class D) -117 26.052 *splits area into "East" and "West"*	35 06.983, -116 47.783 35 06.984, -116 34.049 35 01.014, -116 40.997 34 56.406, -117 08.935 34 59.982, -117 05.297 34 59.898, -118 05.663 35 07.998, -118 05.801 35 08.000, -116 48.299
Nolos Work Area (excludes Class D)	34 59.898, -118 05.663 34 59.982, -117 05.297 34 53.502, -117 11.885 34 50.334, -117 32.051 34 48.498, -117 32.051 34 48.000, -117 35.051 34 48.000, -118 01.049 34 49.668, -118 05.801

Attachment 2

UAS Work Areas	LAT/LONGs
Forbes	34 59.010, -117 53.322 34 59.010, -117 52.845 34 57.608, -117 52.846 34 57.089, -117 52.926 34 56.801, -117 53.161 34 59.801, -117 53.861 34 57.260, -117 53.754 34 57.145, -117 54.883 34 57.680, -117 54.878
Four Corners East	34 52.277, -117 19.700 35 00.011, -117 19.700 35 00.000, -117 05.300 34 56.323, -117 09.024 34 56.322, -117 09.028 34 53.500, -117 11.883
Four Corners West	35 00.000, -117 30.467 35 00.011, -117 19.700 34 52.277, -117 19.700 34 50.890, -117 28.537
Maia Bridge	34 58.362, -118 01.646 34 59.905, -117 56.397 34 58.183, -117 55.879 34 57.081, -117 59.423 34 58.074, -117 59.064 34 58.433, -118 00.599
North Base Extension	35 00.333, -117 50.999 34 59.333, -117 52.750 34 57.535, -117 52.749 34 57.078, -117 55.547 34 59.905, -117 56.397 35 02.355, -117 48.338 35 00.019, -117 47.464
North Base UAS Work Area	35 00.333, -117 50.999 34 59.999, -117 47.249 34 59.333, -117 47.249 34 58.333, -117 47.999 34 57.416, -117 50.333 34 56.666, -117 52.249 34 57.000, -117 52.750 34 59.333, -117 52.750

Rosamond North	34 53.100, -118 05.500 34 53.100, -118 04.199 34 52.000, -118 04.199 34 52.000, -118 05.500
Rosamond South	34 51.499, -118 04.799 34 51.499, -118 03.499 34 50.500, -118 03.499 34 50.500, -118 04.799
Sopp Road	34 58.083, -118 05.666 34 58.433, -118 00.599 34 58.074, -117 59.064 34 53.616, -118 00.677 34 53.974, -118 05.666
UAS Work Corridor	34 57.416, -117 50.333 34 58.333, -117 47.999 34 54.916, -117 45.250 34 54.000, -117 47.583
Warney Corridor	35 03.533, -117 56.366 35 03.616, -117 44.733 35 01.850, -117 44.716 35 01.800, -117 56.366

Attachment 3

Western Training Area Lat/Longs
35 19.057, -116 55.624
35 19.048, -116 51.283
35 17.300, -116 51.293
35 17.295, -116 49.129
35 10.208, -116 49.121
35 10.189, -116 49.107
35 09.941, -116 49.107
35 09.940, -116 49.936
35 09.721, -116 49.637
35 09.720, -116 50.167
35 09.533, -116 50.168
35 09.532, -116 50.688
35 09.283, -116 50.700
35 09.400, -116 55.562
35 10.126, -116 55.572
35 10.125, -116 56.426
35 10.090, -116 56.426
35 11.090, -116 57.502
35 11.961, -116 57.503
35 11.987, -117 04.951
35 16.356, -117 04.986
35 16.317, -116 55.613