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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, 25 Oct 2022

Pages: 14

This handbook outlines policy and procedures to used operate within Restricted Area 2515 (R-2515). All airspace user's 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

Amended: paragraph 4.3. and 5.7; Added: Figure 6 and paragraph 3.8.

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, *Director 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.**

- 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.

1.3. **Participating/Non-Participating Aircraft.** “Participating aircraft” are under the command of, or sponsored by the DoD, 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 *Edwards AFB Aircraft and Air/Ground Support Scheduling Guide*, and agree to operate “VFR, see & avoid,” non-exclusive use.

- Aircraft unable to remain VMC and/or need to penetrate IMC within R-2515, must remain VMC until they receive an IFR clearance. Expect delays.

1.4. **NASA.** NASA operations do not fall within the 412 Test Wing’s (412 TW) scope of authority. All NASA projects that want to use 412 TW resources (to include airspace) must be coordinated via the Initial Point of Contact (IPOC) office (Comm: (661) 277-9266 | E-mail: 412TW.IPOC@us.af.mil). Once the project has been coordinated via the IPOC office, the R-2515 Airspace Management office will coordinate for 412 OG/CC approval via a CONOP.

1.5. **Airspace Briefing.** R-2515 users are required to receive an annual R-2515 briefing.

1.6. **Scheduling.** Schedule in accordance with *EAFB Aircraft and Air/Ground Support Scheduling Guide*.

- All aircraft require a 4-digit operations number to enter R-2515.
- First responders, responding to an active emergency inside R-2515, do not require a 4-digit operations number and should request entry directly from SPORT Military Radar Unit (SPORT) and/or Joshua High Desert TRACON (JOSHUA). Do not collect data while in R-2515 (pictures, videos, etc.). To the maximum extent possible, do not overfly EAFB (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, please 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. **Local Area Activities.** Be vigilant for parachute jumpers and glider activity around Mojave,

Rosamond, California City, Tehachapi, El Mirage, and Crystal Air airports. Glider activity is heaviest June through August.

1.10. **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.
- To the maximum extent possible, do not overfly base housing or the medical facility. If you do overfly base housing or the medical facility, do not overfly them below 3,000' MSL.

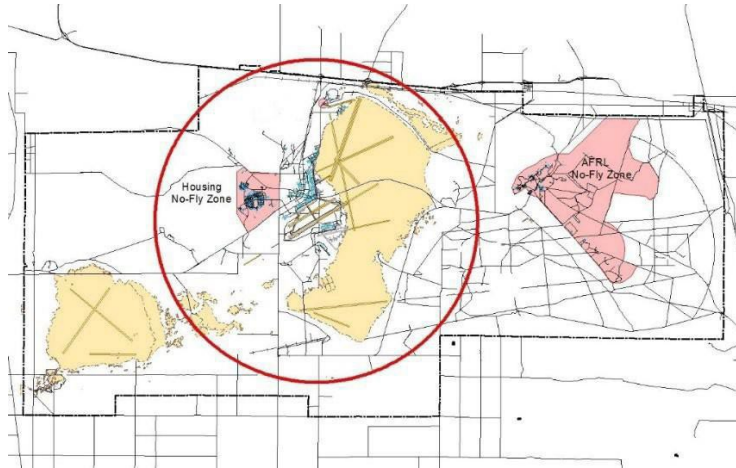


Figure 1. No Fly Areas.

1.11. **Notice to Airmen (NOTAM) / Drone NOTAM (DROTAM).** Airfield Management publishes NOTAMs pertaining to the airfield. Airspace Management publishes NOTAMs pertaining to airspace. DROTAMs are not published for 412 TW UAS activities. Authorized civil sUAS users are required to input their DROTAMs data into the FSS website (<https://www.1800wxbrief.com/Website/#/>). Aircrew can view DROTAMs via SkyVector (<https://skyvector.com/>).

1.12. **SPORT Military Radar Unit.** SPORT assists aircrews in accomplishing their missions within R-2515 and the BARSTOW and BUCKHORN MOAs. When SPORT is closed, control of the airspace reverts to JOSHUA.

- SPORT does not provide air traffic control or IFR services, rather they provide 'advisory' service for participating VFR aircraft. These services include radar monitoring, traffic advisories, safety alerts, boundary calls, tactical maneuvering traffic calls, radar vectoring, sequencing, and general de-confliction.
- Aircraft must establish 2-way radio communication with SPORT before entering R-2515.
- Aircraft taking off from EAFB will contact SPORT prior to takeoff for a brief.
- While SPORT provides advisory services, when potentially unsafe situations require SPORT to issue instructions, participating aircraft will comply to the maximum extent possible.
- Aircraft will advise SPORT prior to making radical horizontal or vertical maneuvers.
- Pre-Brief. Participating aircraft must contact SPORT or submit a Pre-Brief Sheet to SPORT prior to takeoff. This permits SPORT to actively plan de-confliction. This sheet is available on the R-2515 Airspace Website. Fax this sheet to SPORT at 661-277-8863 as early as possible.
- Mission Services. SPORT has the capability to assist 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.

1.13. **Joshua Control Facility (JOSHUA).** When R-2515 is not scheduled for DoD use, it is released to JOSHUA. JOSHUA provides limited services, such as traffic information and airspace boundary calls. Unlike SPORT, they do not provide de-confliction services within R-2515.

1.14. **Bubble Airspace (BA).** Piloted aircraft will avoid un-piloted aircraft by 1000' vertical or 3NM horizontal. Piloted aircraft chasing un-piloted aircraft are exempt.

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

1.16. **Lights Out Operations.** Aircraft position lights shall remain on while transiting to/from and may be turned off when established within the restricted area (excludes R-2508). Crews shall advise the controlling agency when starting/stopping operations.

1.17. **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).

- Chaff is authorized above 5,000' AGL.
- Chaff is not authorized on MTRs.
- Flares are authorized above 5,000' AGL. Do not release over EAFB below 15,000' AGL.
- Advise SPORT prior to any chaff/flare release.

1.18. **Inoperative/No Transponder.** An operable transponder and Mode C are required to operate in R-2515. All aircraft, regardless of formation status, are required to squawk normal unless directed otherwise by SPORT/JOSHUA. This does not apply to sUAS remaining within defined UAS areas, except when using the Four Corners UAS Work Area.

Chapter 2: Unmanned Aircraft Systems (UAS)

2.1. **General.** UAS shall maintain 2-way communication with SPORT. If lost link, notify ATC for further instructions. When active, aircrew must avoid these areas. Anytime SPORT is closed, the user must notify the R-2515 Airspace Office so that a NOTAM can be issued for any scheduled UAS work area.

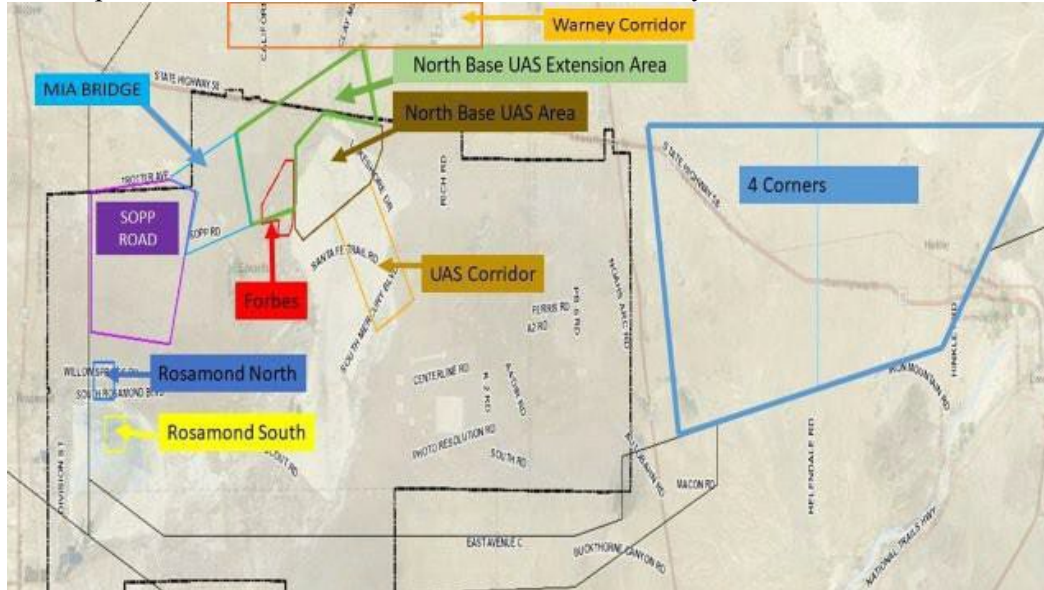


Figure 2. UAS Work Areas.

2.2. **UAS Corridor.** Only be used to transit above Class D between the work area and Precision Impact Range Area (PIRA). Transit between 5,000' and 10,000' MSL.

2.3. **North Base UAS Work Area.** This area extends from the surface to 10,000' MSL.

2.4. **North Base UAS Extension Area.** Vertical limits are surface to 4,800' MSL.

2.5. **Four Corners UAS Work Area.** Vertical limits are 8,000' MSL and above. This area is divided into East and West sections. SPORT may release 1,000' above and below the UAS.

2.6. **Rosamond North UAS Area.** Vertical limits are surface to 500' AGL.

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

2.8. **North Exhibit 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.

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

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

2.11. **ET-CTF (Emerging Technologies Combined Test 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.

2.12. **Warney Corridor.** (Beginning at 35°3'32"N, 117°56'22"W; to 35° 3' 37"N, 117° 44' 44"W; to 35° 1' 51"N, 117° 44' 43"W"; to 35° 1' 48"N, 117° 56' 22"W to the point of beginning) Authorized during daytime VMC conditions only. When used, NB UAS Extension Area and the North SPIN area are not usable. Not authorized for use simultaneously with the Maia Bridge. Can be activated 500' AGL – FL200. Located along the southern boundary of Cords Road (extends 1 mile from centerline and is 11 miles long). If SPORT is closed, notify the R-2515 Airspace Office for a NOTAM to be issued.

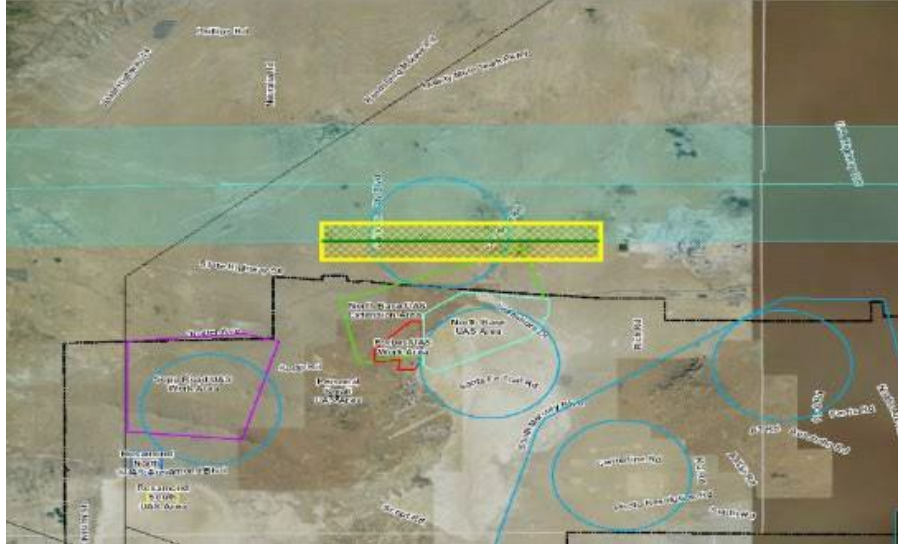


Figure 3. Warney Corridor

2.13. **Maia Bridge.** (34°58'21.72"N, 118°1'38.81"W; to 34°59'54.31"N, 117°56'23.84"W; to 34°58'11"N, 117°55'52.79"W; to 34°57'4.87"N, 117°59'25.43"W; to 34°58'4.49"N, 117°59'3.85"W; to 34°58'26"N, 118°0'36"W to the point of beginning) Authorized during daytime VFR conditions only. 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. The airspace combines with other UAS areas to create an 18-mile corridor, 2 miles wide. Can be activated from 500' AGL – FL200. When used, SOPP Road, NB UAS Area, and NB UAS Extension may also be scheduled. If SPORT is closed, notify R-2515 Airspace Office for a NOTAM to be issued.

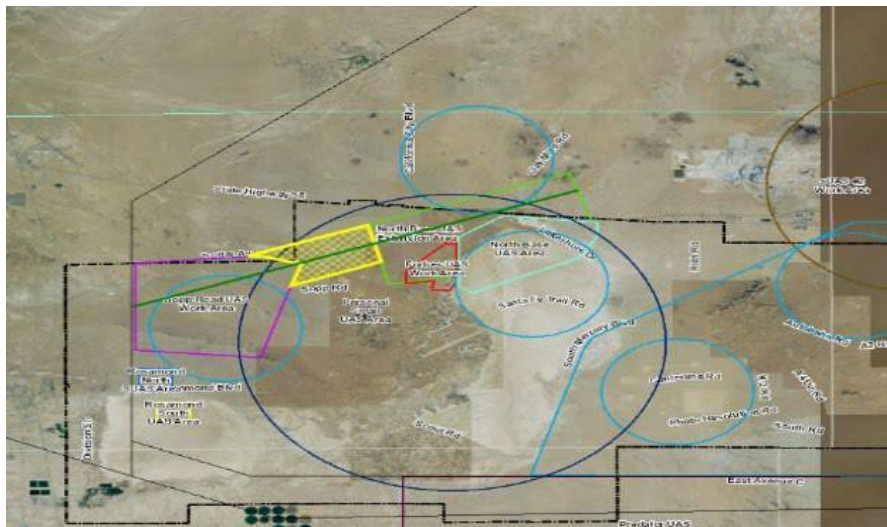


Figure 4. Maia Bridge

2.14. **R-2515 Entry and Exit Procedures for UAS.** Point Grizzly (N 34-53-09.00/W 117-13-16.20) entry altitude is 8,500' MSL, Point Vegas (N 34-51-19/W 117-26-03) exit altitude is 7,500' MSL, Point Reaper (N 35-10-29/W 116-49-08), Red Mountain (N 35-21-27/W 117-35-25), and Point Rosamond (N 34-49-40 /W 118-05-48).

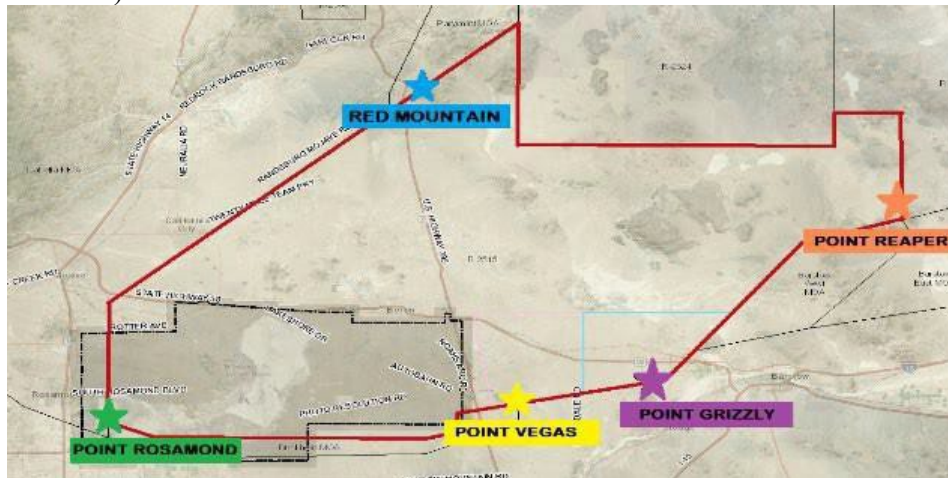


Figure 5. UAS Entry and Exit Points

Chapter 3: Drop Zones (DZ)

3.1. **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>. For local DZs, 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 13-207. 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.

3.2. **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.

3.3. **Erickson DZ.** Air Mobility Command (AMC) certified DZ, available to DoD aircraft, for cargo and personnel drops. Non-412 TW users shall have a MOU. Center point: EDW 212.1/15.9 (N34-47-31.9/W117-57-39.4). Avoidance: 2 NMR from center.

3.4. **Enad DZ.** Seasonal AMC published DZ, available to DoD aircraft for personnel and cargo drops. Center point: EDW 225.1/18.95 (N 34-48.709/W 118-04.104). May be completely under water in rainy months (Dec – Mar). Avoid when wet.

3.5. **PB-8 DZ.** Published in the AMC Zone Availability Report (ZAR) (<https://talonpoint.net>) for DoD, or 412 TW aircraft for personnel and cargo drops. Center point: EDW 163/7.39 (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 regarding PB-8.

3.6. **Housing DZ.** 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.

3.7. **Rick DZ.** Test Parachute Program only. The Rick DZ is located at the Fitness Center Track. The Wings DZ is located at Wings Field. Both have a 1 NMR avoidance zone.

3.8. **Main Stage DZ.** Test Parachute Program only. Non-Edwards assigned aircraft must have an approved support agreement or letter of procedure prior to conducting operations. Center-point: 34° 54.674' N / 117° 53.289' W.

Chapter 4: Supersonic Operations

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

4.2. **Black Mountain Supersonic Corridor.** 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. 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 the keyhole is N 35-01.9'. Minimum altitude is 500' AGL for supersonic flight below 10,000' MSL east of HWY 395.

4.3. **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. Elongated area 15NM wide, defined by a centerline utilizing a line drawn between the Eastern and Western Terminus , at and above FL300:

- Eastern Terminus: Colorado River / Lake Mojave $-35^{\circ}25'17''$ N / $114^{\circ}38'57''$ W
- Western Terminus: Mt. Pinos $-34^{\circ}45'09''$ N / $119^{\circ}07'10''$ W

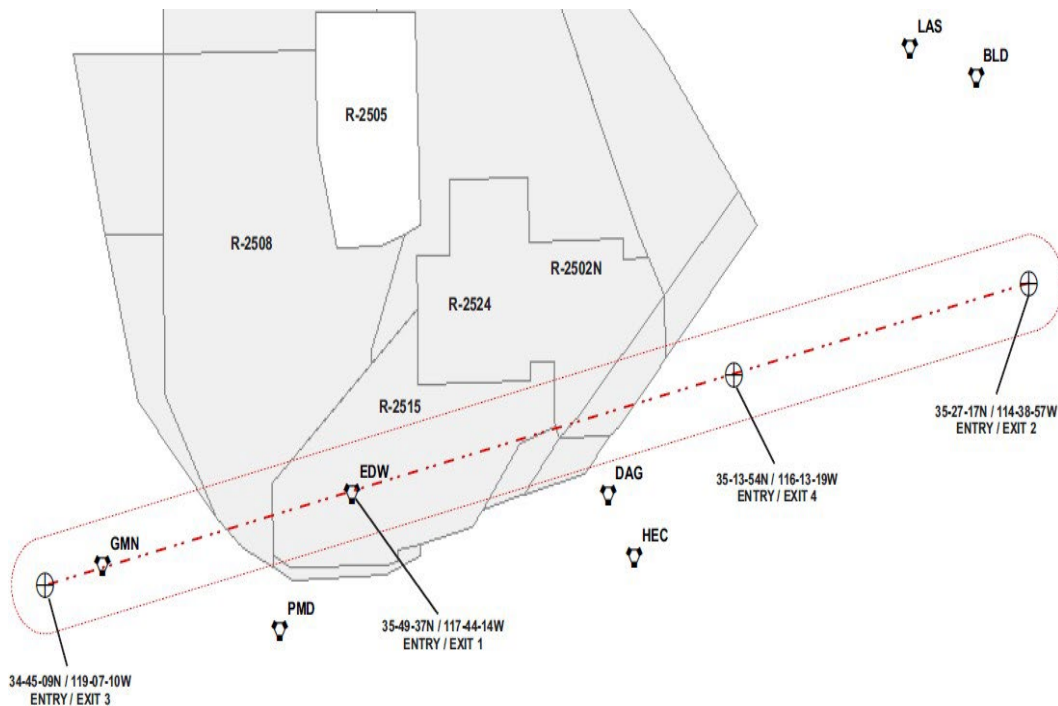


Figure 6. Bell X-1 Supersonic Corridor.

4.4. **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. Schedule VR-1206 for low altitude W-E flights. Be subsonic prior to exiting East Range and crossing HWY 395.

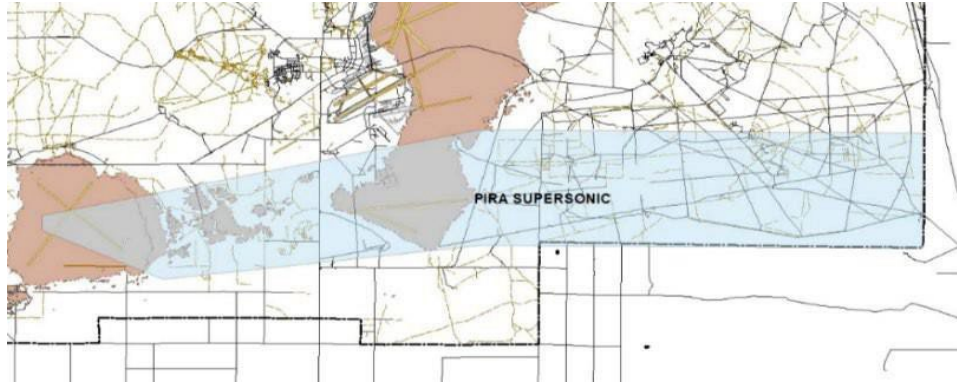


Figure 7. PIRA Supersonic Corridor.

Chapter 5: Other Work Areas

5.1. **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 and AP/1B Military Training Routes.

5.2. **Cords Road.** Cords Road is a true east/west oriented graded road running from just north of Mojave to Coyote Lake. Cords Road extends 3NM north and south of the road generally along N35°05' or 5-10 miles north of Highway 58. Cords Road may be used by California Highway Patrol aircraft, helicopters, pipeline, and power line patrol aircraft below 1000' AGL.

5.3. **Spin Areas.** 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 **Mercury Spin Area** shall not be used simultaneously with East/South Spin. The area extends from 11,000' MSL to FL450. The West Spin and Housing DZ shall not be active simultaneously.

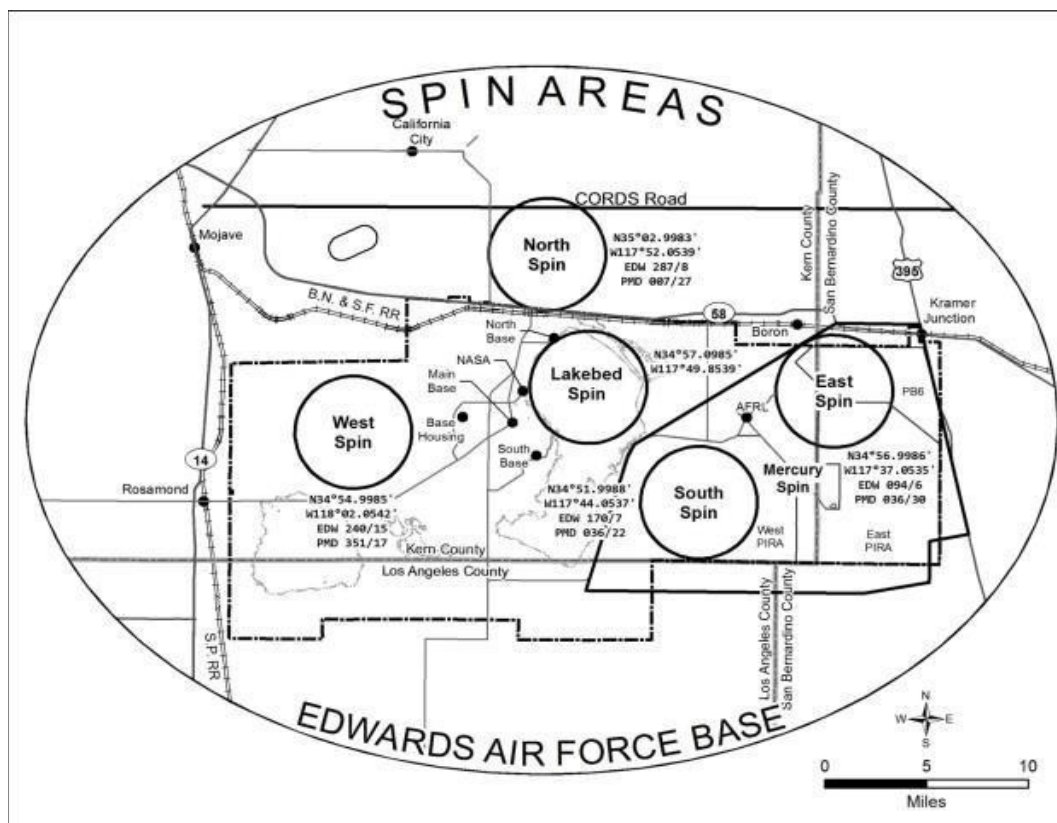


Figure 8. SPIN Areas.

5.4. **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.

5.5. **Alpha Corridor.** SPORT provides status advisories (hot or cold).

5.6. **Precision Impact Range Area (PIRA).** 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.

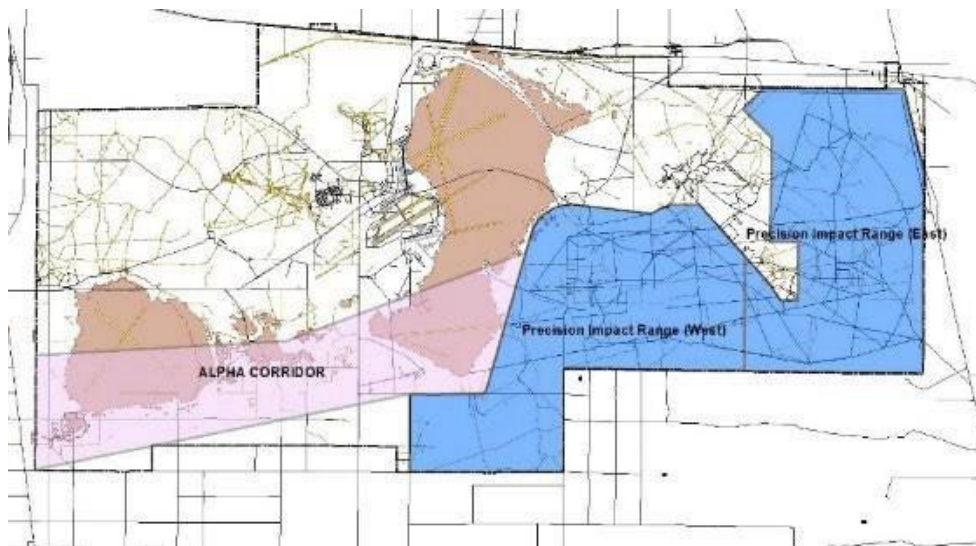


Figure 9. Alpha Corridor and PIRA.

5.7. **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.
 - Haystack is within proximity to Edwards AFB Runway 7/25 and intersects VFR arrival/departure corridors and pattern ground track co-altitude for Aero Club traffic from that runway.
 - Haystack flies through the PIRA and underlies South Reentry pattern ground track.
 - Haystack flies near the reservoir ponds on the south end of Rodgers Lakebed where there is potential for bird strikes due to standing water in the ponds.
 - Recommend aircrew monitor SPORT and Tower frequencies for deconfliction purposes.
 - No uncharted obstacles noted on the route with the only obstacles above 100' being in the immediate vicinity of Haystack Butte (all on CHUM or below 200' AGL).
- Desert Butte: N35-05 / W117-01 to N35-05 / W117-56 (underlies Cords Road).
 - There may be standing ponds IVO of the solar farm south of Harpers Lakebed.
- Harpers: N35-09.9 / W117-53 to N35-00.9 / W117-16.
- Saltdale: N35-18.9 / W117-47 to N35-02.9 / W117-01.

- Minor new developments and grow house operations were noted on the eastern section of the TFR.
- Minor center offsets or climb to 500' AGL may be required as new facilities grow in the desert.
- Maintain situational awareness and positive deconfliction from other airborne assets in R-2515.
- Black Mountain: N35-10.9 / W117-25 to N35-10.9 / W117-02 (supersonic permitted).
 - Minor new developments and grow house operations were noted on the eastern section of the TFR.
 - Minor center offsets or climb to 500AGL may be required as new facilities grow in the desert.
 - Maintain situational awareness and positive deconfliction from other airborne assets in R-2515.
- Rough One: N35-14.9 / W118-08 to N35-54.9 / W118-08.
 - No uncharted obstacles above 100' AGL along route.
 - Road and power line infrastructure to the northeast of the currently marked windmills indicate possible future windmill construction in the area extending from the current windmills to the north-northeast along the ridge lines crossing the current route.

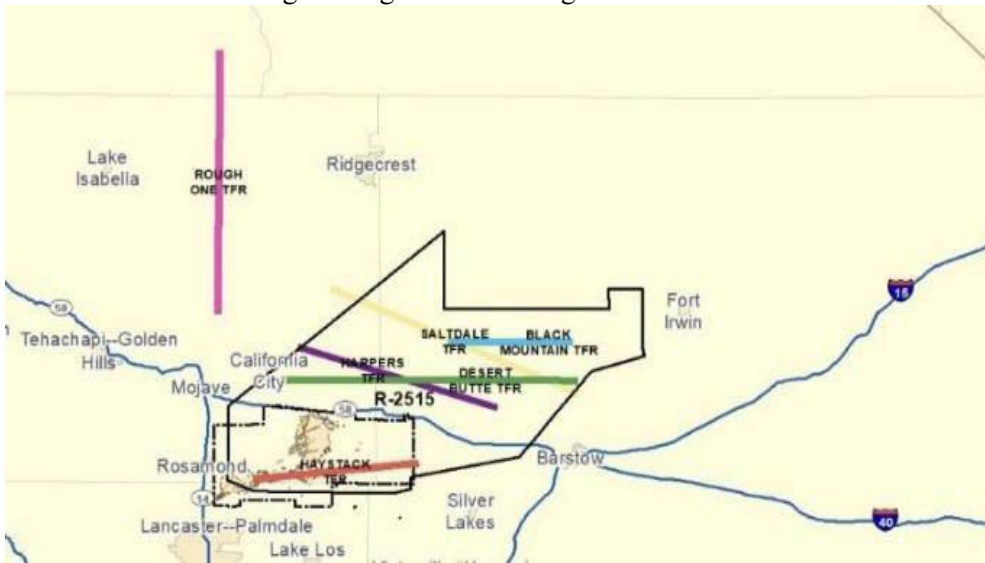


Figure 10. TFRs.

5.8. 412 TW R-2515 Modified Air Refueling Track. The use of this track requires 412 OG/CC approval. The outbound leg is EDW 068/09 to EDW 068/34. Remain West of R-2502 and South of R-2524 (remain south of EDW 052/38).



Figure 11. Modified Air Refueling Track

5.9. **Mojave East Viper Range.** An air-to-ground gunnery range south of California City. Center point: N35-03.9000/W117-59.8000.

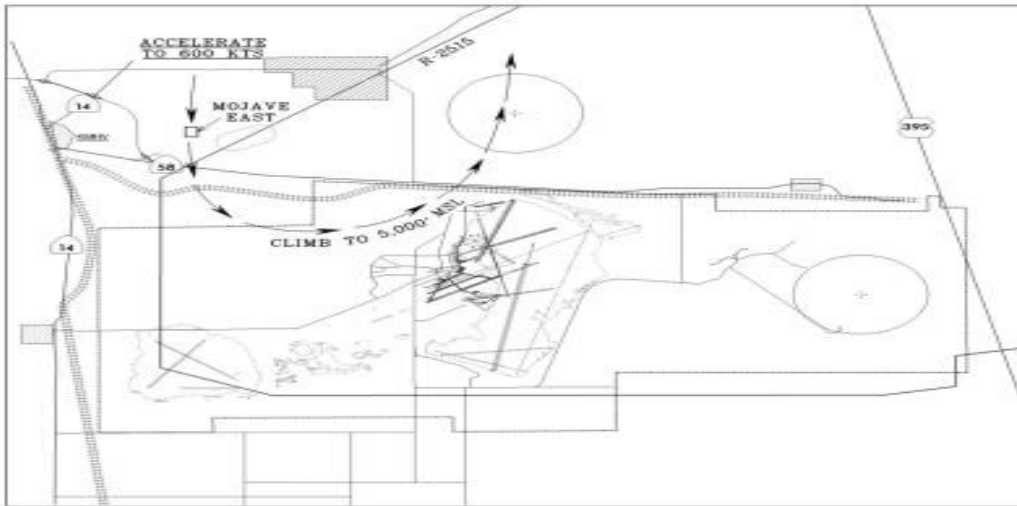


Figure 12. Mojave East Viper Range