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OPR: R-2508 Central Coordinating Facility (CCF)  
Supersedes: R-2508 User's Handbook, 19 Dec 2023

Certified By: Complex Control Board  
Pages: 36

This handbook outlines standard operating procedures for all R-2508 Complex users. All airspace users must be familiar with this handbook and exercise good judgment for situations not covered. Direct recommended changes and questions to the Office of Primary Responsibility (OPR). The waiver authority for this handbook is the R-2508 Complex Control Board (CCB).

**SUMMARY OF REVISIONS**

The Handbook should be completely reviewed in its entirety.

Table of Contents

CHAPTER 1 (INTRODUCTION) ..... 3

CHAPTER 2 (SCHEDULING)..... 6

CHAPTER 3 (COURSE RULES) ..... 9

CHAPTER 4 (AIRSPACE) ..... 14

CHAPTER 5 (FLIGHT OPERATIONS) ..... 20

## CHAPTER 1 Introduction

**1.1. Background.** The R-2508 Complex was established in 1955, under a joint agreement between the Department of Defense (DoD) and the Federal Aviation Administration (FAA), to improve the safety of flight operations in the area and to de-conflict military, civilian, and commercial air traffic.

**1.2. Organization.** In 1975, the Joint Services and the Secretary of Defense created the Joint Policy and Planning Board (JPPB) to manage the daily operations of the R-2508 Complex. The JPPB is composed of the Commanders of the 412 Test Wing (412 TW), Naval Air Warfare Center Weapons Division (NAWCWD), and the Army National Training Center (NTC). The Complex Control Board (CCB) consists of one representative from the 412 TW, NAWCWD, and NTC who are intimately familiar with their organization. The Central Coordinating Facility (CCF) is a permanently staffed joint-DoD office managed by the CCB. The following provide advisory support services to the CCB: the Operations Working Group (OWG), the Technical Working Group (TWG), Program Analyst (PA), Resource Advisor (RA), and various subject specific working groups ((S)WG). The OWG is co-chaired by the 412 Operations Group Commander (412 OG/CC) and Commander, Naval Test Wing Pacific (NTWP).

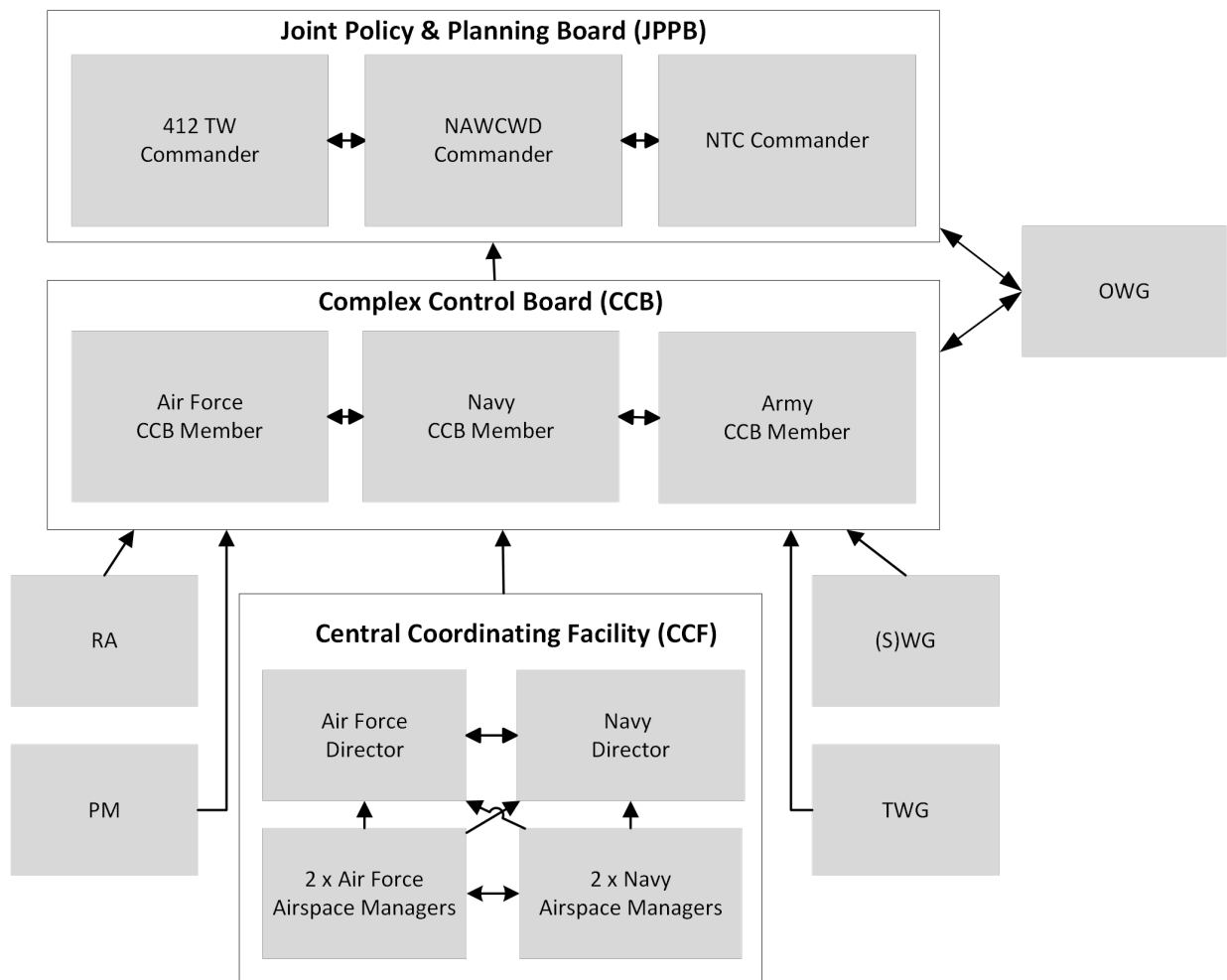


Figure 1. Organizational Chart

## R-2508 User's Handbook

**1.3. Primary Activities.** The primary R-2508 Complex activities include aircrew training and readiness, and research, development, test and evaluation (RDT&E).

- **Non-Participating Aircraft:** Unscheduled civilian flights remaining below FL180 for the entire mission are considered non-participating aircraft. DoD aircraft transitioning directly to/from Edwards, Ft. Irwin, and/or China Lake (and are not loitering in the Complex for the purpose of training or test) are considered non-participating aircraft. Non-participating aircraft will be provided service on a noninterference basis.

- **Participating Aircraft:** Joint Policy Planning Board (JPPB) sponsored units (412 Test Wing, NAWCWD (includes China Lake, Lemoore, Pt Magu, & Fallon), Fort Irwin (NTC)) or R-2508 Letter of Agreement holders who have received the annual airspace briefing, who agree to operate within a “VFR, see & avoid, non-exclusive use” environment, and are scheduled to operate within the R-2508 Complex in accordance with this Handbook.

**1.4. Change Recommendations.** Recommended changes to this document should be forwarded to:

R-2508 Central Coordinating facility  
100 East Sparks Drive  
Edwards AFB, CA 93524-8090

Telephone: DSN 527-2508 / (661) 277-2508  
Email: [2508CCF@us.af.mil](mailto:2508CCF@us.af.mil)

**1.5. Information Availability.**

- Public website: <http://www.edwards.af.mil/About/R-2508>
- SharePoint: <https://intelshare.intelink.gov/sites/R-2508/SitePages/Home.aspx>

**1.6. Situation Reports (SITREP).** SITREPs are for LOCAL USE ONLY and are a way to report issues, recommend improvements or report exceptional performance or support. SITREP submissions must occur within **10-days** of the incident if a RADAR/audio review is required. SITREPs do not replace Hazardous Air Traffic Report (HATR), Operational Hazard Report (OHR), Hazard Reports (HAZREPS) or Near Mid-Air Collision Reports (NMAC), etc. SITREPs are intended to be non-punitive.

- The SITREP form is on the public website: <http://www.edwards.af.mil/About/R-2508>.
- The SITREP form is also on the SharePoint: <https://intelshare.intelink.gov/sites/R-2508/SitePages/Home.aspx>

**1.7. Airspace Description.** R-2508 Complex airspace is depicted in *Figure 2*. Refer to Appendix I for geographic waypoints and a more in-depth description of the airspace. Note: The Silver MOA is not part of the R-2508 Complex. Contact 57 OSS/OSO (Nellis AFB) DSN 682-2040 for more information.

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## R-2508 User's Handbook

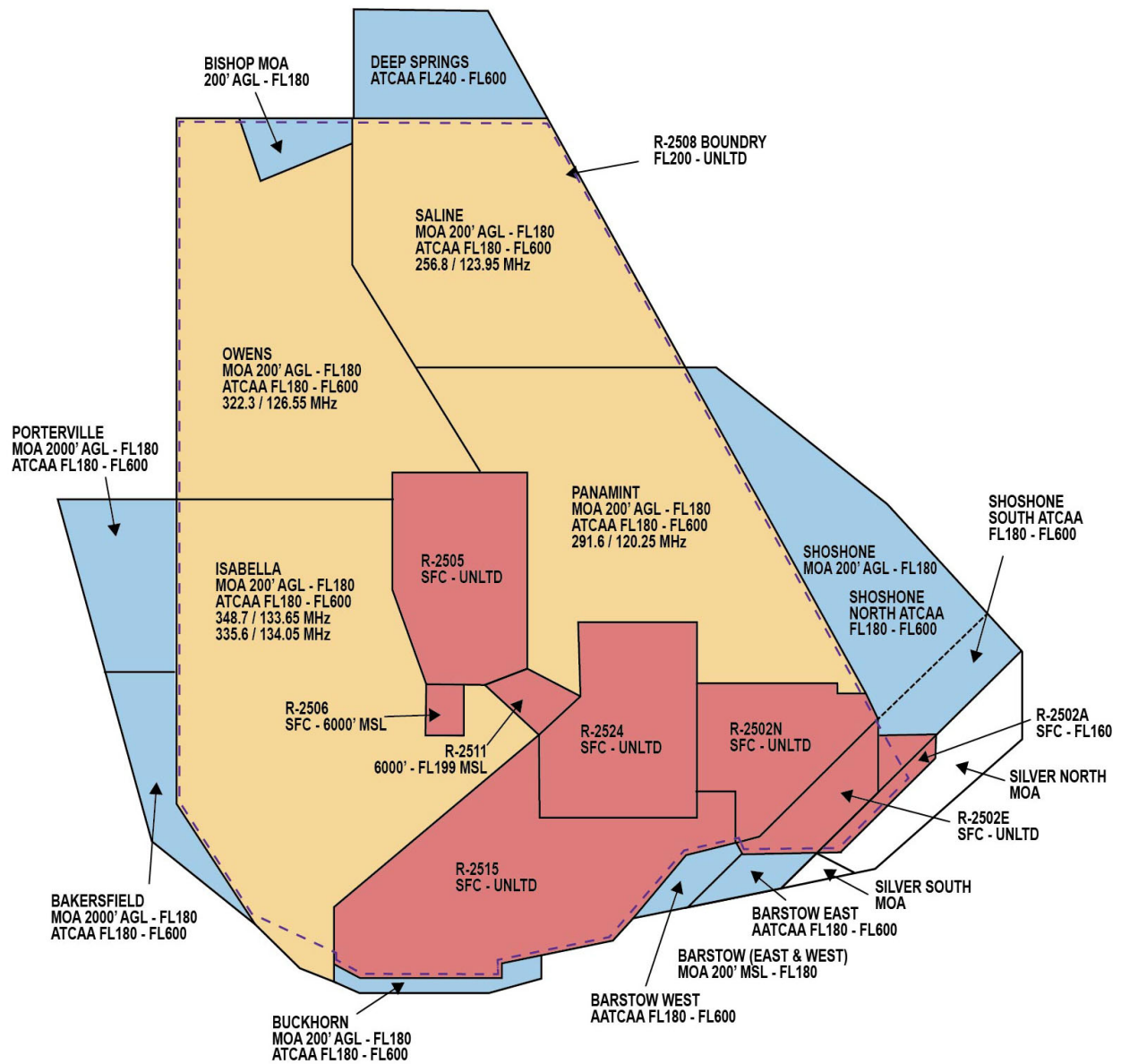


Figure 2. R-2508 Airspace

## CHAPTER 2 Scheduling

**2.1. Central Coordinating Facility (CCF).** CCF is the scheduling agency for R-2508, MOAs, and ATCAAs. Normal office hours: Monday - Thursday, 0600-1800L and Friday, 0800-1630L. CCF will be closed or have reduced hours during federal holidays, e.g., Thanksgiving, Christmas, and New Year's. Email: 2508ccf@us.af.mil. DSN 257-2508 / (661) 277-2508. Direct after-hours emergency calls to either 661-277-2508 or 1-866-805-2851.

### 2.2. Scheduling Pre-requisites.

- Only JPPB (412 Test Wing, NAWCWD (China Lake, Lemoore, Pt Magu, & Fallon), Fort Irwin (NTC))sponsored units, or R-2508 Letter of Agreement (LOA) holders, will be allowed to schedule in the Complex. JPPB sponsored units that host transient units are responsible for ensuring compliance with all Complex procedures.
- Unscheduled aircraft will be denied entry into the Complex. IFR aircraft, departing or arriving Edwards, China Lake, or Ft. Irwin are exempt from the unscheduled aircraft restriction. The aircraft will be instructed to maintain VMC and to proceed to their destination airport or to their boundary exit points, without delay. It is the pilot's responsibility to avoid all internal restricted areas.
- All Users require the annual User's Briefing. All schedulers and other supporting agencies are highly encouraged to review the annual User's Briefing. The automated briefing is available on the public website and SharePoint. Additionally, CCF may provide virtual briefings via MS Teams by appointment. Contact CCF for more details.

**2.3. Scheduling Procedures.** Submit an Airspace Request Form to CCF via email (forms are available on the public website: <http://www.edwards.af.mil/About/R-2508>).

- For weekday, submit no later than (NLT) 1600L 1-workday prior.
- For weekend/holiday, submit NLT 1600L the last workday prior.
- All form data must be complete and accurate.
- Coordinate all cancellations, changes, or add-ons with CCF. Add-ons will not be accepted if the aircraft is already airborne.
- CCF accepts Edwards and Plant 42 Center Scheduling Enterprise (CSE) requests, but will not accept CSE requests from other departure airports. Edwards and Plant 42 CSE requests must still comply with all other R-2508 scheduling procedures and policies.
- IFR aircraft landing NID or EDW, not operating within the Complex, do not need to schedule with CCF.
- For the Airspace Request Form, use airspace abbreviations from Tables 1/2/3/4.

Bakersfield	<b>BK</b>	Buckhorn	<b>BH</b>	Bishop	<b>BI</b>
Barstow MOA	<b>BA</b>	Barstow West ATCAA	<b>BAW</b>	Barstow East ATCAA	<b>BAE</b>
Isabella	<b>I</b>	Owens	<b>O</b>	Saline	<b>S</b>
Panamint	<b>T</b>	Porterville	<b>PV</b>	Deep Springs ATCAA	<b>DS</b>
Shoshone MOA	<b>SH</b>	Shoshone North	<b>SHN</b>	Shoshone South	<b>SHS</b>
Bell X-1 Supersonic Corridor	<b>SS</b>	Black Mountain Supersonic Corridor	<b>BMSS</b>		

Table 1. Scheduling Form Airspace Abbreviations MOAs/ATCAAs

## R-2508 User's Handbook

Isabella RA	<b>ARISB</b>	Coaldale RA	<b>AROAL</b>
Linus RA	<b>ARLNS</b>	Shoshone RA	<b>ARSHN</b>

Table 2. Scheduling Form Airspace Abbreviations Refueling Areas (RA)

R-2502E	<b>02E</b>	R-2502N	<b>02N</b>	R-2505	<b>05</b>
R-2506	<b>06</b>	R-2508	<b>08</b>	R-2511	<b>11</b>
R-2515	<b>15</b>	R-2524	<b>24</b>		

Table 3. Schedule Form Airspace Abbreviations Restricted Areas

Sage 2	<b>S2</b>	Sidewinder Low Level	<b>SWLL</b>	Collins 1 (ER2/U2)	<b>C1</b>
Sequoia and Kings Canyon National Parks FL180 and below	<b>SEKI</b>	War 2	<b>W2</b>	Pancho 3	<b>P3</b>

Table 4. Scheduling Form Airspace Abbreviations Remarks

### 2.4. Additional Scheduling Considerations.

- Schedule internal restricted areas with the using agency.
  - Refer to Chapter 4, *Airspace*; section 4.1.
- Schedule Military Training Routes (MTRs) with the appropriate scheduling agency.
  - If transitioning R-2508, scheduling must be accomplished with CCF separately.
  - Does not include the Sidewinder route.
- For flights originating from outside the Complex & not landing at an airport inside the Complex:
  - File two (2) legs. One to enter – one to depart the Complex.
  - File “R2508” as the destination/departure point.
- Clearances will not be issued when the airspace has been released for joint use (released for commercial traffic).
- JCF/MRUs are not authorized to schedule or activate R-2508 Complex airspace.
- Use Complex entry/exit points during flight planning (see Figure 3).
- RAIDER / KNIGHT (of any spelling variation) must be scheduled using these suffixes:

<b>NLC (VFA-125)</b>	<b>EDW (412 TW)</b>	<b>NKX ( VMGR-352)</b>
RADR 11-16	RADR 17-19	RADR 00-09
RADR 21-26	RADR 27-29	
RADR 31-36	RADR 37-39	
RADR 41-46	RADR 47-49	
RADR 51-56	RADR 57-59	
RADR 61-66	RADR 67-69	
RADR 71-76	RADR 77-79	
RADR 81-86	RADR 87-89	
RADR 91-96	RADR 97-99	
(using second digit of 1-6)	(using second digit of 7-9)	
<b>NLC (VFA-154)</b>	<b>NKX (VMFA-314)</b>	<b>TNX (412 TW)</b>
NITE 11-69	NITE 70-79	NITE 01-09

Table 5. RADR/NITE Callsigns

### 2.5. Flight Clearances.

- Aircrew must schedule the use of the internal restricted areas IAW the using agencies policies.
- Include external R-2508 airspace portions needed to schedule (on request form) in addition to the work area clearance. Example SH/SHN/SHS/DS/PV/BK. JCF/MRUs will provide work area clearance as follows:
  - **SAGE 2:** Isabella, Owens, Saline, and Panamint, FL290 and below.
  - **PANCHO 3: (NID, EDW, NLC, and PMD only.)** Isabella and Panamint FL500 and below; Owens and Saline, FL290 and below.
  - **WAR 2: (Green Flag Only.)** Saline and Panamint work areas FL290 and below, Shoshone MOA, and Shoshone North/South ATCAAs FL230 and below. Request Shoshone North/South 'real-time' with JCF/MRUs on initial check-in (there may be a delay)
  - **COLLINS 1: (ER2/U2 only)** Isabella MOA and ATCAA, 200' AGL to unlimited, and within Owens, Panamint, and Saline ATCAAs above FL500.
    - CCF will put "C1" in the remarks section of the flight progress strip.
    - Aircrew must schedule internal restricted areas IAW the using agencies policies. If scheduled by the aircraft, the aircrew may operate within R-2502 N/E, R-2505, R-2515, and R-2524 above FL500.



## CHAPTER 3 Course Rules

### 3.1 **Airspace Management.**

- All R-2508 Complex operations are “non-exclusive use.”
- All flights shall operate under “VFR - See and Avoid” criteria.
- All users must maintain VMC conditions. The only situations under which a participating aircraft operating within the Complex will be issued a clearance to operate in conditions below VMC is when an aircraft is about to encounter weather conditions that prevent VMC flight. In the event aircrew encounter IMC, they must notify the JCF/MRUs immediately. The MRUs shall initiate transfer of control over to JCF. The purpose of the IFR clearance is to:
  - Position the aircraft in weather conditions that permit VFR flight.
  - Exit the area or return to base.
  - Arrive/depart EDW or NID under an IFR clearance until reaching VMC.

3.2 **Joshua Control Facility (JCF).** “Joshua Approach” (348.7/133.65) is an FAA controlling agency for the R-2508 Complex. JCF provides air traffic control services in accordance with FAA JO 7110.65. JCF provides separation services between IFR aircraft (participants and non-participants). JCF does not provide separation services between participating aircraft. When the Complex is not scheduled for DoD use, it is released to JCF.

3.3. **Military RADAR Unit (MRU).** The MRU assists aircrews with accomplishing their mission within R-2508, MOAs, and that ATCAAs. The MRU does not provide air traffic control or IFR services; rather, the MRU provides “advisory” services to participating VFR aircraft in accordance with FAA JO 7610.14. These services include RADAR monitoring, traffic advisories, safety alerts, boundary calls, vectoring, sequencing, and general de-confliction.

### 3.4. **Pilot Check-in Procedures.**

- Contact JCF prior to Complex entry & exit.
- Notify JCF/MRU of intentions, work area, and requested altitude.
- Obtain a work area clearance from JCF/MRU before conducting operations in the Complex.
- Maintain 2-way radio communications with JCF/MRU (as assigned)
- Intra-flight communication shall be done on a secondary frequency. Notify JCF/MRU prior to making rapid altitude or direction of flight changes.

3.5. **R-2508 Complex Entry/Exit points.** Refer to Figure 3.

3.6. **Altimeter Setting.** Remain on assigned altimeter (regardless of altitude).

- Isabella uses Edwards AFB altimeter.
- Owens/Saline/Panamint used China Lake altimeter.

### 3.7. **ADS-B / Mode 3A/C.**

- ADS-B or a transponder equipped with altitude readout is required to operate in the Complex.
- Remain on assigned beacon code unless otherwise directed.
- Flight leads, for standard formation flights, shall squawk normal. Wingman should squawk standby.

- During flight split-up, notify JCF/MRU of call sign, number/type aircraft, and request beacon code assignment. Notify JCF/MRU if traffic calls are needed between elements.

**3.8. Transiting Across Work Areas.** Aircraft transiting across work areas shall avoid aircraft actively conducting test or training whenever possible. Transiting aircraft should plan on traveling around, over, or below other active flights by flying near borders, or near the top of the area, or well below established flights at VFR hemispheric altitudes.

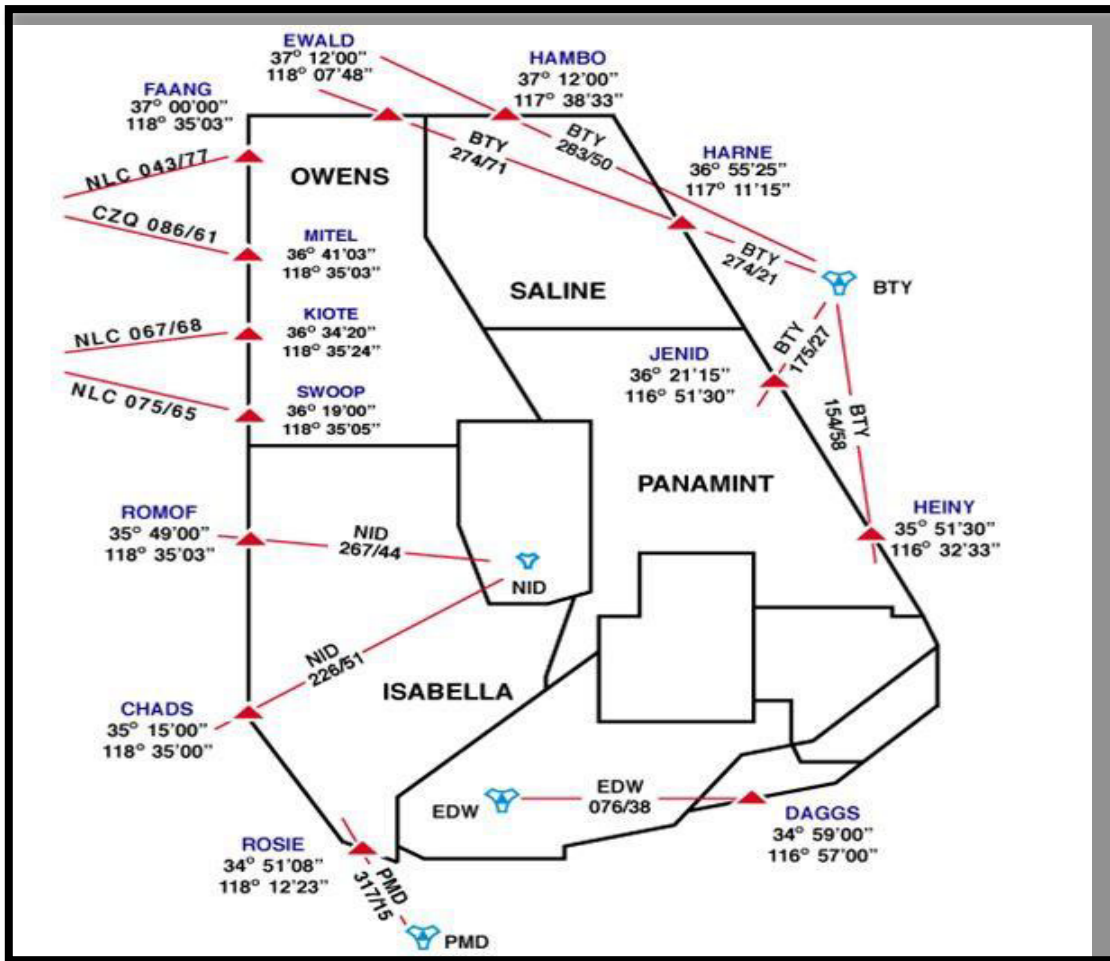


Figure 3. R-2508 Complex Entry & Exit Points

**3.9. Low-Level Operations.** Aircraft intending to conduct sustained operations at or below 3,000' AGL within the confines of the Complex shall:

- Notify JCF/MRU of intentions and request frequency change to 315.9 MHz (UNICOM and low level "pilot to pilot" communications frequency).
- JCF/MRU will issue traffic, terminate RADAR service, and approve frequency change. JCF/MRU will not provide services on 319.5 MHz.
- Announce on last assigned frequency "changing to 319.5 MHz."
- Firefighting aircraft may receive/transmit in-the-blind position/intentions over 315.9, where cross-talk capability exists.

- There are three repeater locations for the cross-talk system, Mazurka Peak, Breckenridge Peak and Rodgers Peak. Coverage will vary and will be constantly changing due to many factors such as altitude of aircraft, antenna placement, weather, and repeater function.
- The Mazurka Peak repeater is triggered on/off by Owens Valley Interagency Communication Center during a wildland fire initial attack, due to lack of sustainable battery capabilities.
- Breckenridge and Rodgers Peaks are in continuous operation.
- Remain on assigned beacon code.

### 3.10. Federal Agency Aircraft Operations.

- Fixed and Rotary Wing aircraft from the Bureau of Land Management, the National Parks and other Federal agencies operate primarily in the western portions of Isabella and Owens, and throughout the Panamint and Death Valley areas, 1500' AGL and below.
- **FOREST FIRE SEASON**-Beware of fire suppression activities occurring within Temporary Flight Restriction (TFR) areas. In many cases a NOTAM designating a temporary flight restriction area will be in effect for such areas when a fire exists. All aircrew should be alert for such areas whether designated or not and avoid such areas by at least 5 NM (AP1).

3.11. **GEO Reference Points.** Default common for the R-2508 Complex (a.k.a. the bullseye) is referenced as LAKE (China Lake - NID).

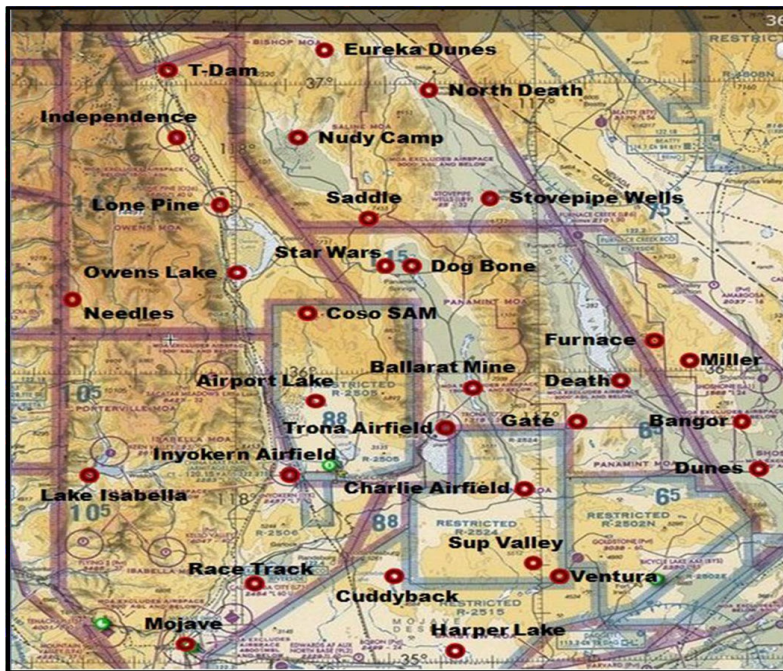


Figure 4. GEO Reference Points

3.12. **Noise Sensitive Areas.** All communities within the Complex are considered “noise sensitive areas” and must be avoided by 3,000' AGL and 3,000' laterally (unless on a CCB approved test plan). Kern River area is particularly sensitive during the summer months.



**3.13. National Parks & Wilderness Areas.** Maintain at or above 3,000' AGL and 3,000' laterally (approximately ½ mile) from Death Valley National Park (DEVA), Domeland, Manzanar, and John Muir, etc., unless established on a charted VR, IR, or the Sidewinder Route. EXCEPTION: Altitude restrictions over DEVA only apply within the 1977 National Monument and Wilderness Area which may not be accurately reflected on sectional charts (see Appendix I for LAT and LONGs).

- **Sequoia and Kings Canyon National Parks.** The Kings Canyon National Park is in the western portion of the Owens MOA. Maintain above FL180 unless lower is required. If FL180 or below is required, annotate "SEKI" in the remarks section of the Airspace Request Form.

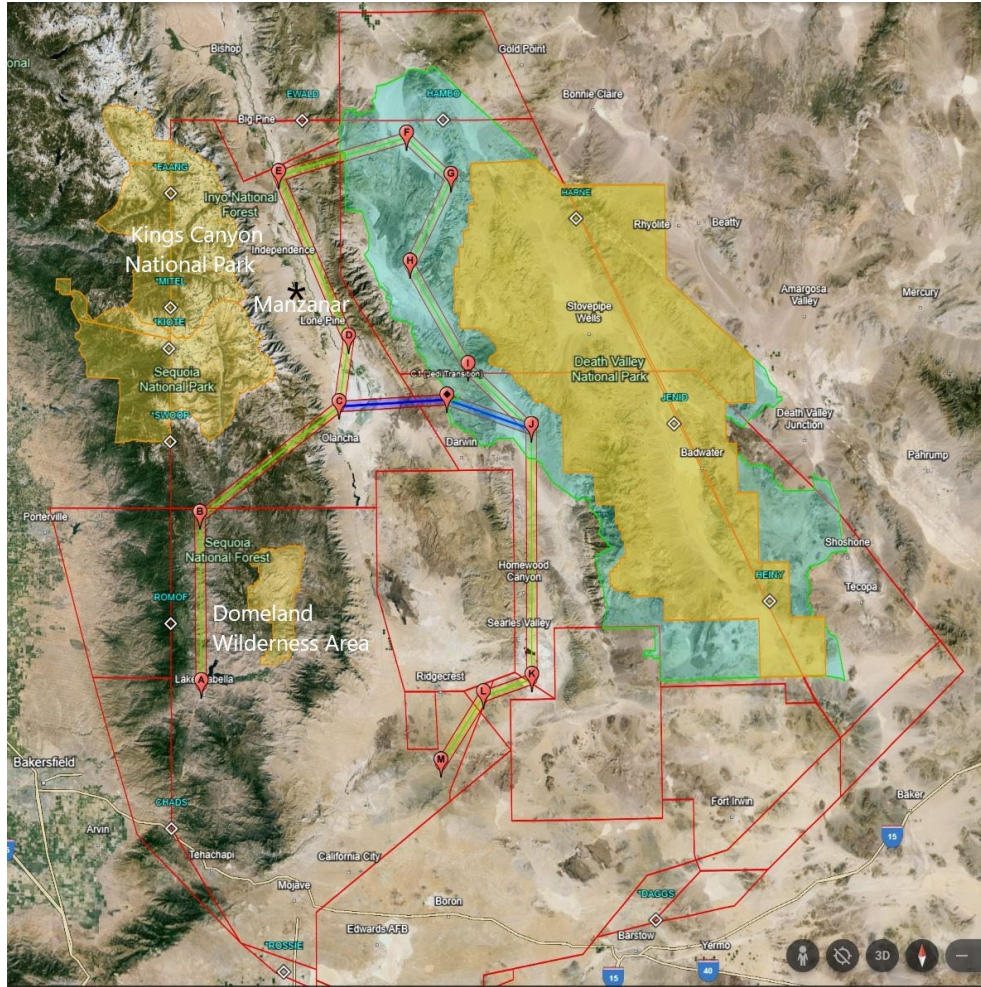


Figure 5. National Parks

**3.14. NASA Facility at Goldstone.** Refer to Figure 5. The Goldstone facility produces High Intensity Radiated Fields (HIRF) during high-power transmissions. The interruption of signal due to aircraft transitioning through the beam is rare and need not be considered. Goldstone is sensitive to transmissions at 2200-2300 MHz, 8400-8500 MHz, 25,000-27,000 MHz, and 31800-32300 MHz (bands allocated to Space Research Service). Broadband jamming and aeronautical telemetry in these bands are not allowed within line of sight without prior scheduling through the Western Area Frequency Coordinator. Coordinate spectrum usage with Mojave Coordination Group (MCG) representative. Goldstone does not transmit in or near GPS bands.

- Remain above 5,000' MSL (approximately 2,000' AGL) and above 10,000' MSL within 1.5 km (horizontal) from antennas at Mars and Apollo. Flights below these altitudes require pre-approval of Goldstone Frequency and Airspace Coordination (760-255-8218).

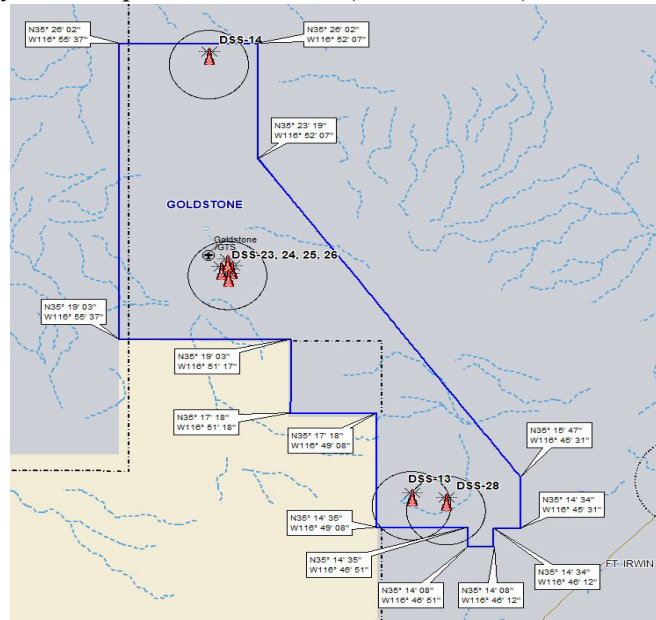


Figure 6. Goldstone Sites

- The NTC G3 Aviation Section is the coordinating authority for scheduling and coordinating all flight activities (e.g., fixed-wing assets flying in support of NTC rotations) over Goldstone airspace.
- Goldstone produces HIRF that could affect aircraft flying at less than 200 knots. If such slow aircraft need to enter the marked area, coordination with Goldstone Frequency and Airspace Coordination (760) 255-8218 is recommended.
- The probability of entering the beam is very low and the beam is narrow (cylinder diameter of 34m or 70m, depending on the transmitting antenna) and moves very slowly (at the rate of Earth's rotation).
- In general, the transmitters point south.
- Physiologic effects may occur for very slow aircraft, e.g., hovering helicopters in the beam for a long time. While unlikely, such aircraft are advised to stay below the transmitter beam.

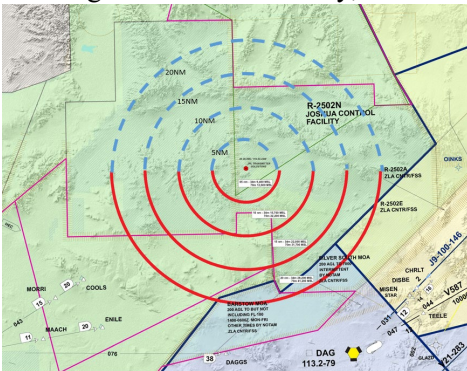


Figure 7. HIRF Potential Hazards

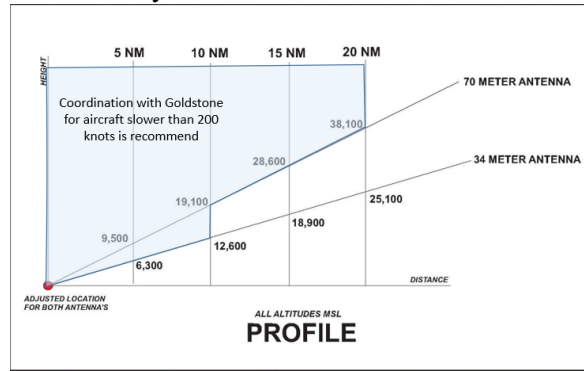


Figure 8. HIRF Potential Hazards

CHAPTER 4  
Airspace

4.1. **Internal Restricted Areas.** Refer to Figure 2. Entry into the internal restricted areas require prior approval from the using agency. Scheduling internal restricted areas does not schedule R-2508.

- **R-2502N and R-2502E (NTC).** Desert Radio provides services on 267.275/126.2 (FM: 66.10).

Hours / Contact Details:

<b>Desert Radio</b>	24/7	DSN 470-4320/7559
<b>Range Scheduling</b>	M-F, 0800-1600L	DSN 470-4321/4059
<b>Airspace Manager</b>		DSN 470-5852/6156
<b>Facility Manager</b>		DSN 470-6369
Commercial: 760-380-(last 4 above)		

NTC Airspace Control Center (“Sundance”) directs CAS activities. Sundance is staffed one hour prior to first takeoff from Nellis AFB until 30-minutes past the last flight’s departure from R-2502N/E. If Sundance is not operational, contact Desert Radio.

Submit scheduling request NLT 5 working days prior for standard ranges, and 14-days prior for non-standard ranges. All aircraft operations require coordination with Bicycle Lake Army Field. Prior Permission Required (PPRs) should be obtained from 3 working days before operations. Contact CCF to schedule MOAs for entry/exit.

- **R-2505, R-2506, R-2511, and R-2524 (NAWCWD).** China Control provides advisories on 301.0/128.25.

Hours / Contact Details:

<b>Airspace Manager</b>	M-Th (0700-1700L), non-civilian payday Friday (0700-1600L).	DSN 437-2750/5480
<b>Scheduling</b>		DSN 437-6800
<b>China Control</b>		DSN 437-6908/9 FAX DSN 437-6855
Commercial: 760-939-(last 4 above)		

- **R-2511.** Previously known as the Trona Control Firing Area. Used for free flight weapon systems transiting from launch areas within R-2505 to target areas in R-2524, or vice versa. Other unproven or immature weapon systems or aviation platforms, in testing and development, may also use R-2511.

- Activated altitudes will not exceed 6,000’ MSL up to but not including FL200.
- CCF will publish a notice on the Daily Brief Sheet (DBS) and Daily Activation Sheet.
- The Echo Bypass may be used to transit between R-2515 and Panamint subject to China Control approval.
- JCF/MRU will: Broadcast on all assigned frequencies (excluding Guard) a 15-minute, 5-minute and 1-minute warning that R-2511 will be active, e.g., “ATTENTION ALL AIRCRAFT, R-2511 ACTIVE FROM (time) to (time).” Broadcast on all assigned

## R-2508 User's Handbook

frequencies (excluding Guard) when R-2511 is no longer active, e.g., “ATTENTION ALL AIRCRAFT, R-2511 INACTIVE.”

- R-2511 may be scheduled no more than 36 times per year, no more than 2 times per day, with a maximum of a 2-hour blocks between 0700-1700L, Monday – Friday. Activation of R-2511 will be no more than 15-minutes prior to the transition.
- Activation of R-2511 is dependent upon: Continuous radar surveillance being able to detect the presence of all aviation traffic. If the Indian Wells Valley (QIW), Searles (QVY), or Panamint (QPM) radars are inoperative, the airspace will not be activated. If already activated when the outage occurs, R-2511 will be de-activated.

- **R-2515 (412 TW).** SPORT provides advisories on 343.7/132.75.

Hours / Contact Details:

<b>SPORT</b>	As Published	DSN 527-6184/3928
<b>R-2515 Webpage</b>	<a href="https://www.edwards.af.mil/About/R-2515-Airspace/">https://www.edwards.af.mil/About/R-2515-Airspace/</a>	
<b>Scheduling (ROC)</b>	M-F, 0630-1800L	DSN 527-4110
<b>Real-Time</b>	M-F, 0630-1800L	DSN 527-3940
<b>Airspace Manager</b>	M-F, 0800-1630L	DSN 527-2515
Commercial: 661-277-(last 4 above)		

**4.2. Military Operating Areas (MOA) and Air Traffic Control Assigned Airspace (ATCAA).** R-2508, MOAs, and ATCAAs combine to form four work areas: Isabella, Owens, Saline, and Panamint. The ATCAAs fill the gap between the top of the MOAs (FL180) and the base of R-2508 (FL200). When R-2508 is not active, the ATCAA may extend upward to FL600. ATCAAs are located above the MOAs (exception: BISHOP MOA), beyond the lateral borders of R-2508, to provide additional work areas up to FL600. **USE CAUTION.** Several Military Training Routes cross all work areas.

- MOAs/ATCAAs are only available to civil/LOA holders when activated for military use.
- For detailed waypoint coordinates, refer to Appendix I.
- Work area frequencies:
  - Isabella 335.6 / 134.05
  - Owens 322.3 / 126.55
  - Saline 256.8 / 123.95
  - Panamint 291.6 / 120.25
- MOA vertical limits exclude below 1,500' AGL within 3 miles of any charted airport. Exception: Mojave Airport's Class D.
- Portions of the MOAs overlay Sequoia/Kings Canyon National Parks, John Muir and Domeland Wilderness Areas, Manzanar, and Death Valley National Park. **NOTE:** Exclusion of MOA airspace above Death Valley National Park applies to the 1977 contours of the former National Monument. This difference may not be accurately reflected in Sectional Charts. Refer to the California Desert Protection Act of 1994 (see paragraph 3.12).

**4.3. Isabella MOA/ATCAA.** Isabella is typically used for: armed/test aircraft holding, ACM, R-2505 arrivals/departures, refueling operations, and crossing of Military Training Routes (MTRs).

- Use Edwards' altimeter.
- **USE CAUTION.** The SE portion of Isabella (near Saltdale and Koehn's Dry Lake) is a



high density traffic area with rapidly maneuvering aircraft at all altitudes (i.e., NID/EDW arrivals/departure, SWLL, ACM, refueling activities, crossing MTRs, amateur rocketry, etc.) (see Figure 8).

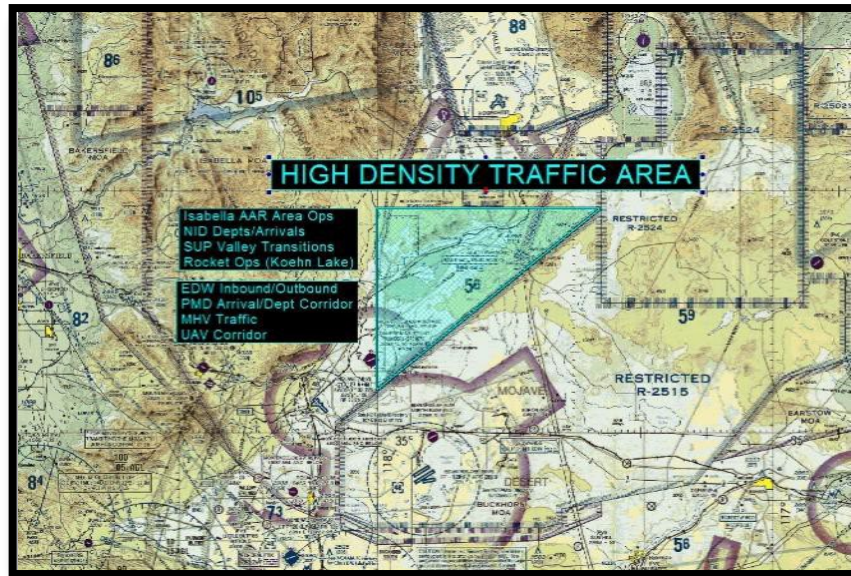


Figure 9. Isabella High Density Traffic Area

4.4. **Owens MOA/ATCAA.** This area is typically used by NAS Lemoore, NAWS China Lake, Fresno ANG, and Edwards AFB.

- Owens MOA/ATCAA and Bishop MOA make up the Owens work area.
- Bishop MOA is not included in the Sage 2 or Pancho 3 and must be scheduled separately.
- Use China Lake's local altimeter.
- Do not hold and/or conduct ACM over communities within the Owens Valley.
- **USE CAUTION:**
  - Be aware of the boundary difference between Owens MOA and Bishop MOA to prevent entering Oakland Air Route Traffic Control Center (ARTCC) airspace.
  - Use caution crossing Owens Valley east to west/west to east. Typical operations run north to south/south to north with multiple aircraft at varying altitudes.

4.5. **Bishop MOA.** Must be scheduled in advance with CCF. The Bishop MOA covers 200 feet AGL to 17,999 MSL (see Figure 2). Bishop MOA is located in the northeast corner of the Owens Work Area.

- Aircrew must 'real-time' request use with JCF/MRU.
- Typical times of use are M-F, 0600-2200L. Other times by NOTAM.
- Use the Bishop altimeter when in use by Oakland ARTCC. Use the China Lake altimeter when is use by JCF/MRU or Los Angeles ARTCC.

4.6. **Saline MOA/ATCAA.** This area is typically used by NAS Lemoore, NAWS China Lake, Fresno ANG, and Edwards AFB. Low and high aerial refueling activities (Saline Valley).

- Use China Lake altimeter.
- Do not descend below 3,000' AGL over Death Valley National Park.
- **USE CAUTION.** Pay specific attention to the ridge crossing at **Hunter Mountain** (Figure 10)



that divides the Panamint and Saline MOAs. The “saddle” on the ridgeline is a narrow passage between the MOAs and is serviced by VR-1205, which inherently possesses a high potential for a head-on collision. Pilots should fly to the right side when passing through the saddle area to prevent head-on collisions with aircraft passing in the opposite direction.

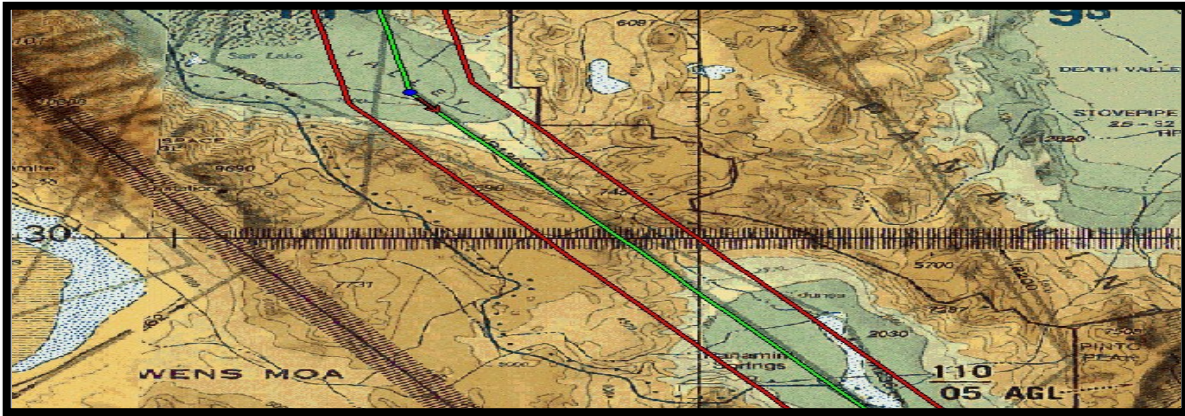


Figure 10. Hunter Mountain Saddle

4.7. **Panamint MOA/ATCAA.** This area is typically used in support of R-2502N, R-2502E, and R-2524. Activities also include low-altitude training, large-scale exercises, low and high-altitude refueling, and UAS transitions to/from Creech AFB at FL190 and FL200.

- **USE CAUTION.** Refer to note in 4.6. and Figure 10, regarding Hunter Mountain.
- Use China Lake altimeter.

4.8. **Bakersfield MOA/ATCAA.** This area is outside R-2508, but may be activated for military use in conjunction with Isabella.

- Must be scheduled at least 2 *working days* in advance so CCF can coordinate with LA ARTCC.
- Aircrew must still make ‘real-time’ request to use this area with JCF/MRU.
- Use Edwards’ altimeter.

4.9. **Barstow MOA and East/West ATCAAs.** This area is typically used by Edwards AFB for flight test, aircraft entering/exiting/or awaiting entry into R-2502N/E, VR-1217/VR-1218 activity.

- M-F, 0600-2200L. Other times by NOTAM.
- Use Edwards’ altimeter.
- Aircrew operating in Barstow must ensure that they request Barstow East/West in conjunction with the appropriate lower MOA airspace, as needed.
- Aircrew requiring FL240 and above in Barstow East ATCAA must request it ‘real-time’ with ATC facility/MRU and can expect a maximum 15-minute delay.
- **USE CAUTION.** The ATCAAs over the Barstow MOA have a different boundary than the airspace underneath. Aircrew must be aware of these differences to prevent spill-outs into the LA ARTCC airspace.
- Rotary wing aircraft entering or exiting R-2502E may transit Barstow MOA utilizing the following procedures.
  - Maintain VMC and squawk VFR (1200) with altitude encoding activated.

- Aircraft shall not conduct mission activities during transition.
- Avoid R-2515 during transition.
- Aircraft are exempt from the following requirements of this LOA:
  - ATC clearance prior to entering Barstow MOA
  - Schedule Barstow MOA.
  - ATC assigned discrete beacon code.
  - Traffic advisories.

4.10. **Buckhorn MOA/ATCAA.** This area is typically used for test missions by Edwards AFB.

- M-F, 0600-2200L. Other times by NOTAM.
- Use Edwards' altimeter.
- Caution: Paradrop activities occur routinely within Buckhorn MOA.

4.11. **Deep Springs ATCAA.**

- Schedule at least 2 *working days* in advance so that CCF can coordinate with Oakland ARTCC.
- Aircrew must also make a 'real-time' request for use of this area with JCF/MRU.
- Use China Lake altimeter.

4.12. **Porterville MOA/ATCAA.** This area is outside R-2508, but may be scheduled in conjunction with Isabella.

- Must be scheduled at least 2 *working days* in advance so CCF can coordinate with LA ARTCC.
- Aircrew must still 'real-time' request use of this area with JCF/MRU.
- NAS Lemoore aircraft use Fresno altimeter. All others use China Lake altimeter.

4.13. **Shoshone MOA and North/South ATCAAs.** This area is typically activated for military use for ACM, low-altitude training, large-scale exercises, low-altitude refueling, and several crossing MTRs.

- M-F, 0600-2200L. Other times by NOTAM.
- Use China Lake altimeter.
- User must put the request on R-2508 request form. **Ex.** SH/SHN/SHS.
- Additionally, aircrew must make 'real-time' request with JCF/MRU.
- Aircrew operating in Shoshone must ensure they also request Shoshone North/South ATCAA in conjunction with the appropriate lower MOA airspace as needed.
- Expect a 15-minute delay in receiving clearance to operate.
- **USE CAUTION.** The ATCAAs have different boundaries than Shoshone MOA. Aircrew must be aware of these boundary differences to prevent spill-out into LA ARTCC airspace.

#### 4.14. General Aviation Routes.

- Refer to Figure 11.
- General aviation aircraft fly VFR below FL180.

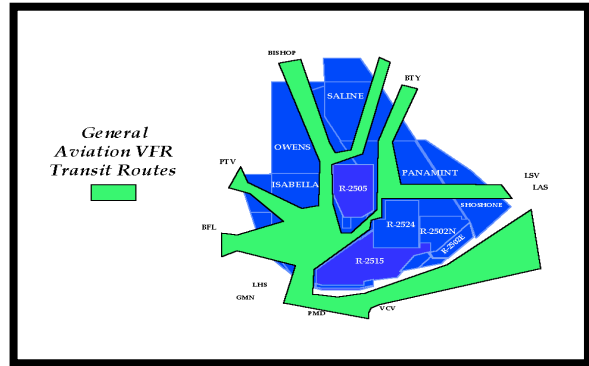


Figure 11. General Aviation Routes

#### 4.15. Golden Triangle.

- Refer to Figure 12.
- 35-27-40N/117-26-03W 35-15-56N/117-26-03W, 35-15-56N/117-43-41W.
- Request this area 'real-time' with China Control (ASC) or SPORT.
- For transition through R-2515 to R-2524 only.
- Aircrew may be asked to remain north of Cuddeback Lake.

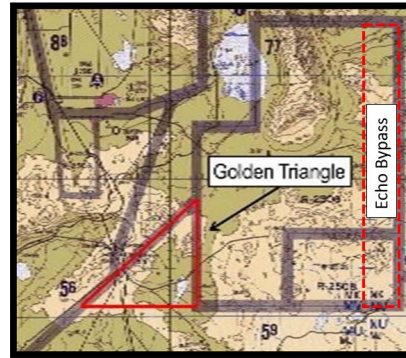


Figure 12. Golden Triangle/Echo Bypass

#### 4.16. Echo Bypass. Refer to Figure 12.

- Transition route between R-2515 and Panamint (ASC must approve) (35-48N/117-00W, 35-48N/116-55W, 35-25N/116-55W, 35-25N/117-00W) may be used to transit between R-2515 and Panamint subject to China Control approval. The Echo Bypass is approximately 4 NM wide. Aircraft must not overfly manned sites with hung or armed ordnance within the Echo Bypass.

CHAPTER 5  
Flight Operations

5.1. **Targets of Opportunity.** Do not use low observable platforms as targets of opportunity. If any device tracks these platforms; the data is classified and must be safeguarded. Notify Edwards Command Post (DSN 527-3040/COMM: 661-277-3040).

5.2. **Lights-Out Operations.** Requires a CCB approved CONOP. Not authorized below FL200. Annotate "LIGHTS OUT" in the remarks section of the airspace request form.

5.3. **Electronic Counter Measures/Chaff.** Pre-coordinate with Base Spectrum Managers. Annotate "ECM/CHAFF" in the remarks section of the airspace request form.

- WAFB, Pt Mugu                      DSN 351-7983/COMM: 805-989-7983
- 412 TW                                DSN 527-2390/COMM: 661-277-2390
- NAWCWD                            DSN 437-6827/COMM: 760-939-6827
- NTC                                    DSN 470-3043/COMM: 760-380-3043

5.4. **Flares.** Not authorized in R-2508 Complex. Flare use inside internal restricted areas must be coordinated with the scheduling agency.

5.5. **Non-eye Safe Laser.** Not authorized in the Complex unless approved by CCB. Expect Sat/Sun, 2200-0600L, or above FL400. User must provide confirmed compliance from FAA Laser Clearance House and mitigation recommendations from units internal Safety Review Board.

5.6. **Air Combat Maneuvers (ACM).** Notify JCF/MRU when using areas for ACM.

- Avoid ACM over towns – especially Owens Valley (regardless of altitude).
- **USE CAUTION**, when conducting ACM below RADAR coverage and in radio blind spots.

5.7. **Large Force Exercise (LFE) / Large Scale Exercise (LSE) / Large Force Test Event (LFTE).**

- These are considered non-standard events that require prior CCB review and approval.
- Defined as more than 10 fixed-wing aircraft in the Complex simultaneously.
- Submit a concept of operations (CONOP) at least 30-days in advance to CCF. The CONOP should include maps, flight profiles, times, altitudes, restrictions, waiver requests, etc.
- Recommend operating outside of 0900-1800L M-F, to avoid high density traffic times.
- Expect 'non-exclusive use' outside of internal restricted areas.
- Do not place refueling or anchor/orbit points close to boundaries or areas of concentrated activities, e.g., Owens Dry Lake, Saltdale, etc.
- Do not conduct unrestricted ACM. For Panamint, conduct ACM north of 36-08N and west of Telescope Peak (36-08N/117-05W).
- Invite the following to planning meetings: JCF, CCF, SPORT, China Lake (ASC) and any impacted internal restricted area airspace office, scheduling office, and controlling agency (e.g., Ft. Irwin).
- **30-calendar days from event.** Provide JCF, MRUs and CCF the following (via email):
  - Point-of-Contact (and back-up).
  - Dates and times.
  - Signed Letter of Agreement (request template from CCF) for users that may require it.

- Daily Brief Sheet data (e.g., number/type aircraft, tanker plan, map, altitudes, point of contact details, etc.)
- AWACs/E-2 location, altitude, frequency, communication plan.
- Basic scenario (ingress/egress, tanking, chaff, etc.).
- Check-in/check-out procedures with JCF/MRU facility.
- Safety mitigation plan (e.g., weather, SAR, etc.).
- Status of coordination with the following (as applicable):
  - Western Service Area AFREP: 206-231-2500.
  - Western Service Area NAVREP: 206-231-2502/03/04.
  - Western Service Area Army Rep: 206-231-2505/06.
  - LA ARTCC MILREP: 661-265-8249.
  - Oakland ARTCC MILREP: 510-745-3334.
- **3-working days from event.**
  - Provide CCF the following (via email) IAW approved CONOP:
    - Airspace Request Forms.
    - Squawk Codes with associated callsigns.
    - Finalized communication plan.
  - Point of contact shall ensure non-tanker participants have received an annual airspace briefing.
  - **Changes, other than minor, will not be accepted after 1600L.**
- **1-working day from event.**
  - Point of contact shall ensure tankers received an airspace briefing.

5.8. **Tow Operations.** Tow operations within the Complex are not authorized without CCB approval. Submit a Concept of Operations (CONOP) at least 2 weeks in advance for consideration.

5.9. **Refueling.** Refer to Figure 12.

- **USE CAUTION.** The R-2508 Complex is VFR – see and avoid. Refueling activities are not provided ‘protected airspace’ or ‘exclusive use airspace.’
- Non-participants should avoid refueling activities by 2,000’ vertically and/or 5 miles laterally to the maximum extent possible.
- **Discrete Tanker Beacon Codes.** Active refueling tankers will be assigned the below beacon codes to provide enhanced situational awareness to other Complex users.
  - MODE 1: 0002
  - MODE 2: 7210
  - MODE 3:
    - Departing Edwards: 0051-0057 (assigned by SPORT)
    - All others: 5253-5257 (assigned by JCF)
- There are four unpublished refueling areas:
  - Isabella (ARISB)
  - Coaldale (AROAL)
  - Shoshone (ARSHN)
  - Linus (ARLNS)



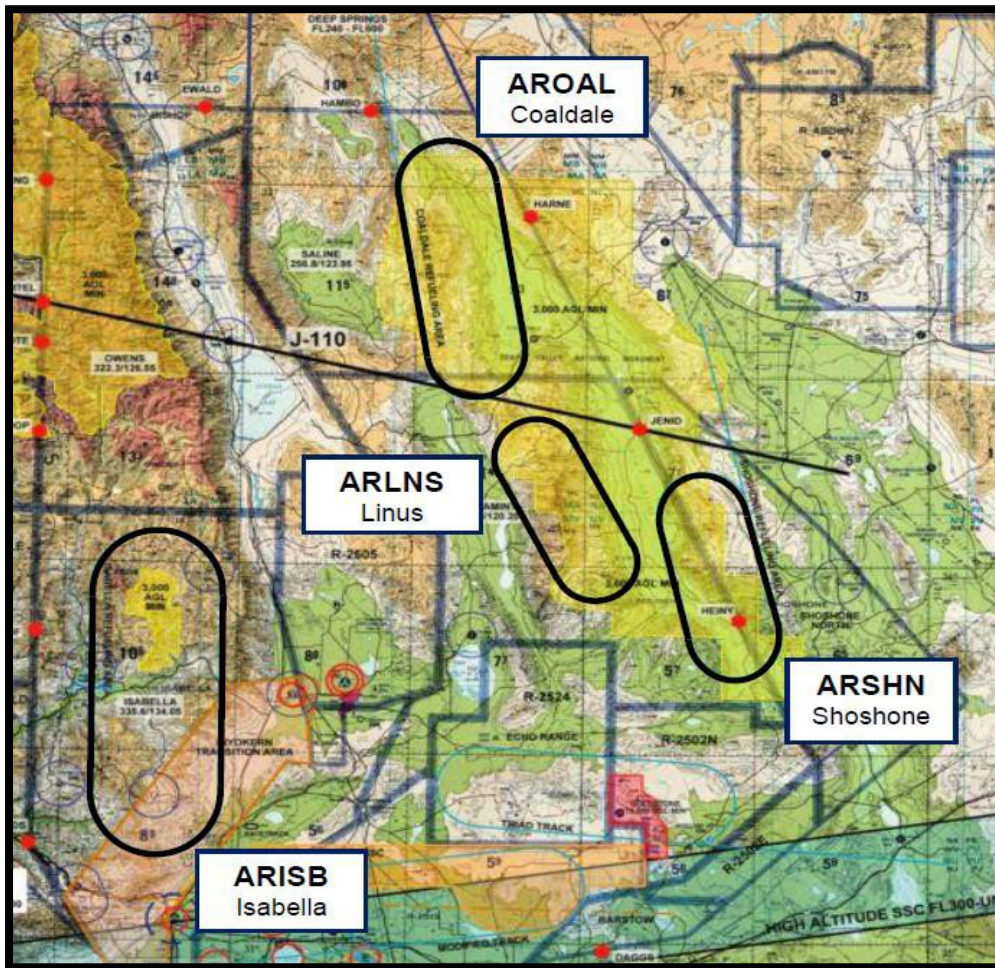


Figure 13. Refueling Areas

- The AR Tracks and Anchors below are provided to standardize procedures for Aerial refueling activities within the Complex. These are not procedural or mandatory. No approval is required to deviate so long as the maneuvering airspace, altitude block, and frequency are coordinated between the tankers, receivers, and advised to the servicing ATC. AR Default A/A TACAN settings: receivers just set tanker callsign #, tankers with callsigns 1-63 add 63 to callsign #. Tanker callsigns #64 and above subtract 63 from callsign #.

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# R-2508 User's Handbook

Track	IP	CP	Altitude	Comm	Recommended Orbit
Isabella	PMD 345/35	PMD 345/70	AR >=FL210	Tanker Common-363.425	CRS 360 L:30 x W:18
High			FL270B290	Pri 349.3 Alt 354.4	
Mid			FL240B260	Pri 342.175 Alt 354.4	
Low			FL210B230	Pri 325.9 Alt 354.4	
Remarks	High speed cross traffic FL200 and below.				
Track	IP	CP	Altitude	Comm	Recommended Orbit
Shoshone	BTY 150/60	BTY 150/40	AR >=12,000MSL	Pri 272.125	CRS 350 L:15 x W:15
Remarks	No radar coverage below 10,000' MSL. Receivers remain above 3,000' AGL to avoid the park.				
Track	IP	CP	Altitude	Comm	Recommended Orbit
Coaldale	OAL 155/60	OAL 155/90	AR >=10,000MSL	Pri 296.9 Alt 252.175	CRS 170 L:25 x W:15
Remarks	No radar coverage below 10,000' MSL. Receivers remain above 3,000' AGL to avoid Death Valley park				
ANCHOR	Entry	NP		Altitude	Comm
Linus	N35-57.53/ W117-02.81	N36-02.15/ W116-51.46		As Required	As Assigned
		N36-19.88/ W117-03.45			
		N36-15.35/ W117-14.59			
Remarks	Remain above 3000' AGL to avoid the park. AVAILABLE TO GREEN FLAG ONLY.				

Table 6. AR Track Information.

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**5.10. Military Training Routes (MTR).** Refer to the FLIP AP/1B for scheduling and special instructions.

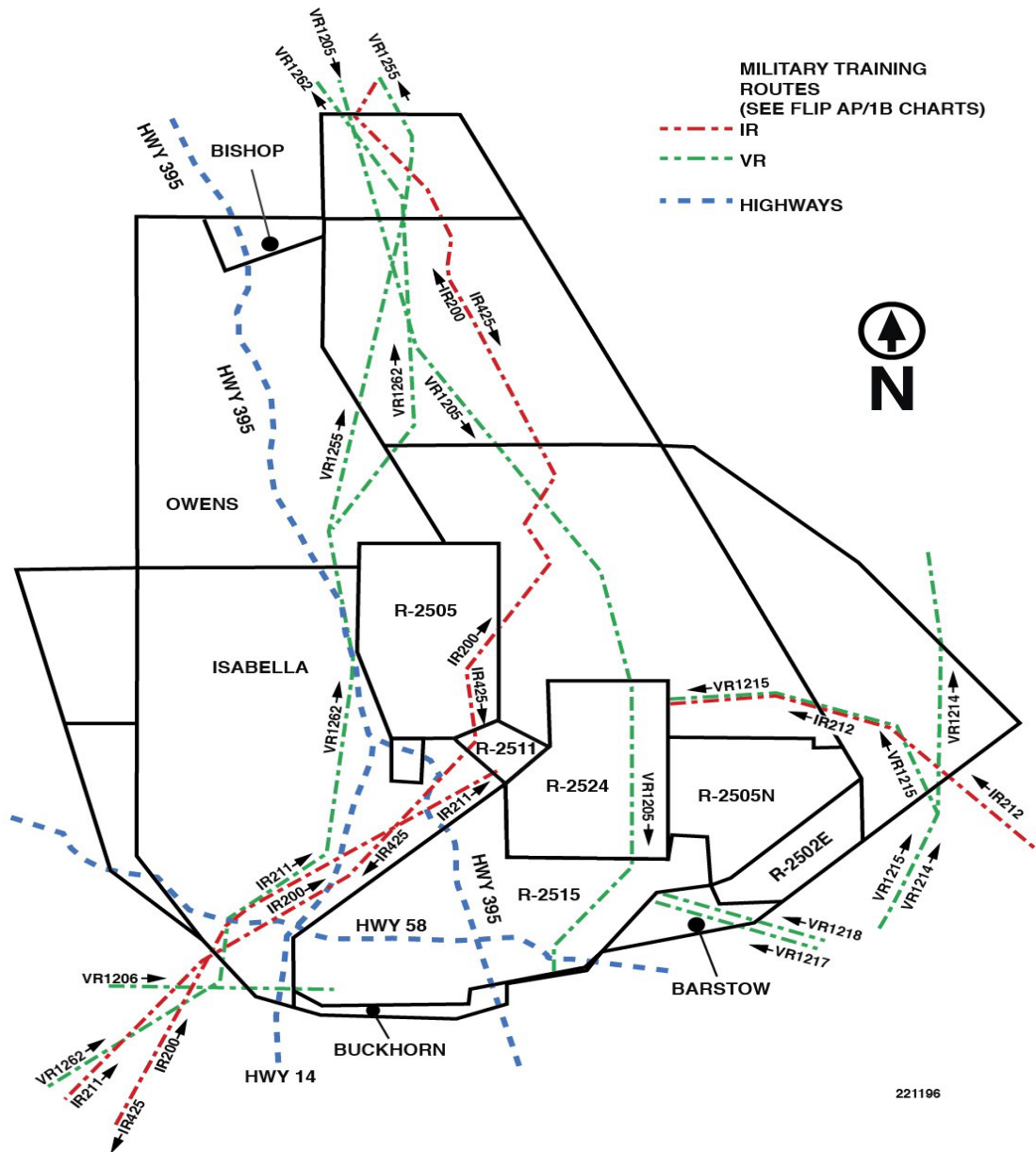


Figure 14. Military training Routes



5.11. Sidewinder Low Level (SWLL). **Unpublished and for LOCAL USE ONLY.**

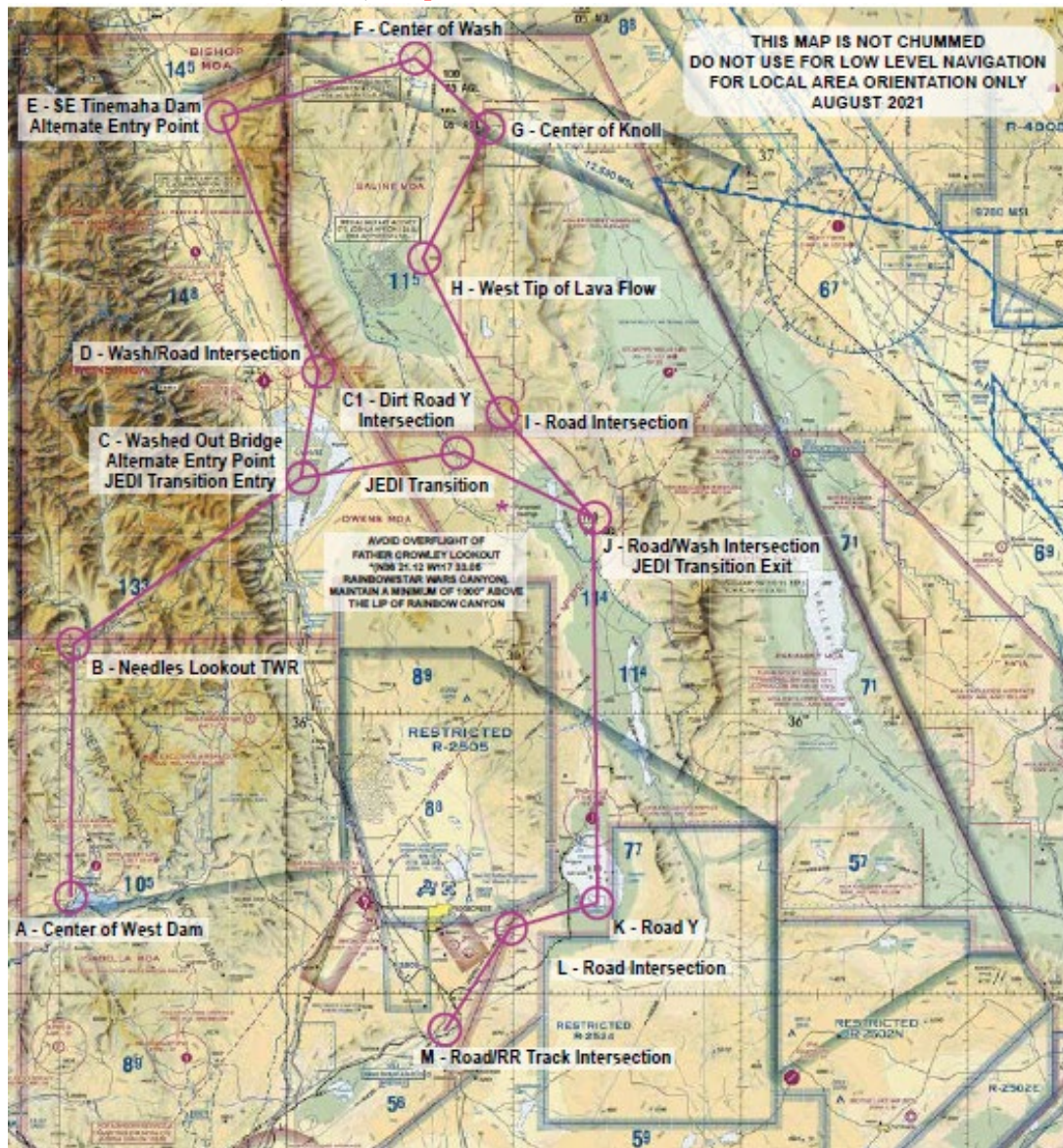


Figure 15. Sidewinder Low Level

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## SIDEWINDER LOW LEVEL (Rev 6)

**Date: Apr 2024**

**CAUTION:** These are R-2508 procedural controls for local use only. Points will be flown sequentially (i.e. A, B, C...M or C, J, K...M, etc). **OPPOSITE DIRECTION IS PROHIBITED.**

**Note:** The SIDEWINDER and JEDI Transition are not published MTRs.

### ROUTE DESCRIPTION:

#### PT Lat/Long Pt Description/Elevation

A N 35 38.75 Ctr of West Dam/2575 W118 28.94  
 B N 36 06.60 Needles Lookout Twr/8107 W118 29.12  
 C N 36 24.74 Washed Out Bridge/3615 W118 00.57  
 C1 N 36 25.70 Dirt Road Y Int/5206  
 W 117 38.45 (Jedi Only)  
 D N 36 35.61 Wash/Road Int/3635  
 W117 58.53  
 E N 37 02.88 SE Tinemaha Dam/3894 W118 12.79  
 F N 37 09.18 Center of Wash/2956 W117 46.19  
 G N 37 02.17 Center of Knoll/4738 W117 37.09  
 H N 36 47.95 West Tip Lava Flow/1352 W117 45.69  
 I N 36 30.84 Road Int/6109  
 W117 34.05  
 J N 36 20.69 Road/Wash Int/2093  
 W117 21.08  
 K N 35 39.34 Road Y/1624  
 W117 21.62  
 L N 35 36.61 Road Int/2480  
 W117 31.56  
 M N 35 25.40 Road/RR Int/2785  
 W117 40.32

**ALTITUDE:** ALTITUDE: NLT 200' AGL to 3000' AGL (points A to B); NLT 200' AGL (points B to K); NLT 500' AGL (points K to M). Climb as required to avoid noise sensitive areas and airports (note 8).

**ROUTE WIDTH** – 2 NM either side of centerline.

### Special Operating Procedures:

(1) Entry Procedure: Prior to entry notify Joshua of intentions and planned Entry/Exit point. Above 3000 AGL and prior to route entry make intentions call on Low Level Common (315.9). Give way to any traffic already established on the route prior to entry.

(2) Noise abatement procedures from A to B: Remain above 3000AGL until 3NM north of the Kernville airport (N 35 46.5 W 118 28.9) to avoid Lake Isabella and surrounding communities. Avoid early descents leading to a high-power climb over Wofford Heights. Make a reduced throttle descent to and avoid high power settings (MRT or AB) until well clear of the town of Kernville. Avoid stair-step level offs requiring high throttle settings. (See figure 16.)

(3) Alternate Entry: This is a procedural control and traffic may enter at any point. Preferred alternate entry points are C and E.

(4) Alternate Exit: This is a procedural control and traffic may exit at any point. Preferred alternate exit points are H and K.

(5) All aircraft operating on the Sidewinder/Jedi Transition will utilize the R-2508 low altitude common frequency 315.9. When entering low level environment transmit in the blind call sign, number and type of aircraft, and intentions. Monitor 315.9 until exiting low altitude regime. Repeat calls entering new areas, or crossing ridge lines.

(6) Slower aircraft (i.e. C-12, T-34) may be on the route at the same time. Use caution for airspeed variations that may exist between aircraft. Aircraft being overtaken has the right of way.

(7) To mitigate the risk of opposite direction traffic, offset right of centerline when transiting saddles between valleys. Rising terrain may mask advisory calls.

(8) Avoid all noise sensitive/national park areas by 3000' AGL or 3000' laterally. Avoid all charted wilderness avoidance areas (unless on a charted VR or IR Route or the SWLL) by 3,000' AGL. Avoid all airports along route by 1500' AGL or 3 NM.

(9) Point B to C, avoid the extremely noise sensitive areas of Olancha and Cartago.

(10) Point C to D, and C1 to J avoid the extremely noise sensitive areas of Keeler and Lone Pine. Caution:

a. intensive hang glider activity in the vicinity of Dolomite and northeast shore of Owens Lake.

b. Skydiving activity in the vicinity of Lone Pine.

(11) **Caution:** high migratory bird activity between F and H during daylight hours.

(12) **Caution:** Possible merging traffic from aircraft on Jedi Transition (approaching from west via Point C1). Sidewinder users offset east of Point J for de-confliction. Make mandatory radio call approaching Point J "Call sign, Sidewinder, approaching Point Juliet". Make calls on 315.9

(13) Point J to K. 198' multi unlit towers N35°53.797 W117°17.558. Avoid Trona Airport by 1500' AGL or 3 NM.

(14) Point K to M. Watch for traffic northbound to China Lake initial at 4000' MSL.

(15) Point L to M, route transits underneath instrument procedure at NID (arc and final approach). Use caution if exiting route prior to point M.

(16) Conflicts: A to L: IR-236; B to D: VR-1255; E to I: VR-1205-1255-1262; I to L: VR-1262, IR-200; K to M: IR-200-211.

**JEDI TRANSITION:** At Point C proceed east to Point C1 and to Point J. **Avoid Overflight of Father Crowley Lookout (N36 21.12 W117 33.05 – Rainbow/Star Wars Canyon). Maintain a minimum of 1000' above the lip of Rainbow Canyon. CAUTION:** Possible merging Sidewinder traffic from the north via Point I. Jedi users offset west of Point J for de-confliction. Jedi users make mandatory radio call approaching Point J "Call sign, Jedi Transition, approaching Point Juliet". Make calls on 315.9



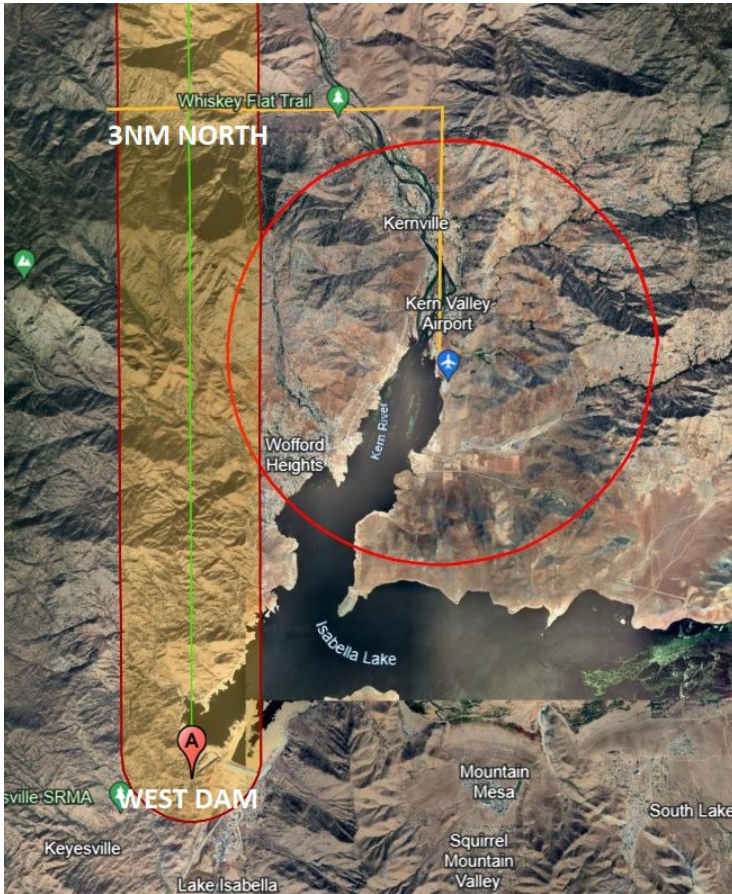


Figure 16: SWLL Point A. West Dam

5.12. **Remotely Piloted Aircraft (RPA) / Unmanned Aerial Systems (UAS).** Refer to Figure 15.

- RPA/UAS operations that occur at or above FL400 (no chase required).
- RPA/UAS operations below FL400 require a chase aircraft.
- Transitions must be conducted at FL190 or FL200 and do not require a chase.
- **Transition of the Trona Gap is not available when R-2511 is active.**
- R-2505 and R-2524 transitions must be scheduled at or above FL190 and do not require a chase.
- NIGHT RTE: Authorized 2200L – 0600L, Mon-Fri, weekends, or FL400 and above.
- DAY RTE: For use 0600L – 2200L, Mon-Fri.

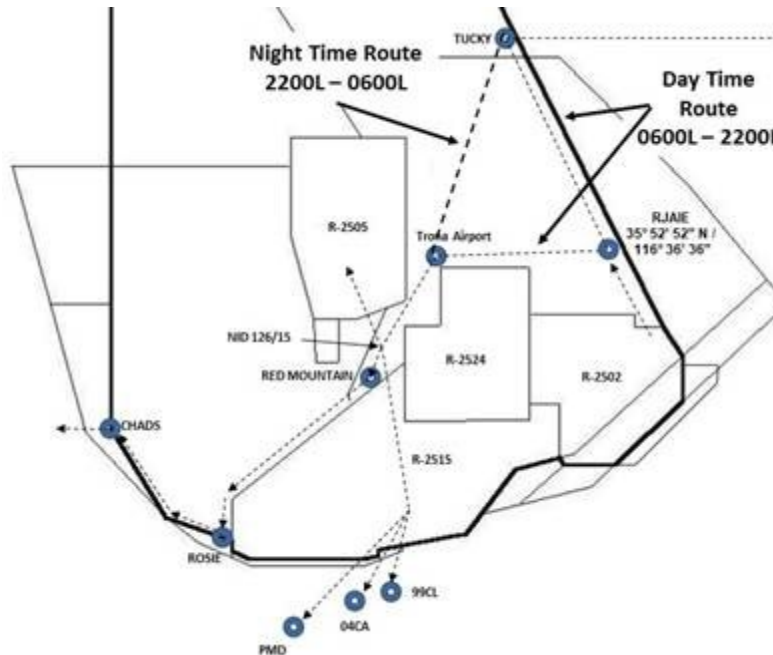


Figure 17. RPA / UAS Transitions

5.13. **Airborne Radar Unit (ARU) / Airborne Warning and Control Systems (AWACS).**

- Initiate radar correlation check with JCF/MRU.
- Do not provide ATC services to mission aircraft.
- Do not change MODE 3 codes while inside the Complex.
- Notify JCF/MRU of:
  - Frequency for direct communication with mission aircraft.
  - An emergency or an aircraft that requires special handling.
  - 5-minute advance notice of mission completion.
  - Call sign of the first element that has completed mission.
  - Position of last element that will exit the Complex.
  - Advise when mission is complete.
  - Advise mission aircraft to remain in assigned airspace and contact JCF/MRU.
  - JCF/MRU will not provide advisories between mission aircraft.
- JCF/MRU will:
  - Coordinate with ARTCC for inbound/outbound aircraft.
  - Issue a work area clearance & beacon code to mission aircraft.

- Forward ACID/CODE to the AWACs/ARU.
- Inactively monitor AWACs/ARU mission/tactical frequency.
- Provide traffic advisories and alerts on non-mission aircraft.
- Provide boundary advisories on mission/tactical frequency.
- Issue departure clearances and perform ARTCC coordination.

**5.14. Supersonic Operations.** Only authorized within established corridors, i.e. Bell X-1 Supersonic Corridor (BX1SC) and Black Mountain Supersonic Corridor (BMSS), when scheduled.

- Operations within the BX1SC shall be IAW the Letter of Agreement maintained by the R-2515 Airspace Management Office (DSN 527-2515/661-277-2515).
- Schedule BX1SC with the 412 TW Scheduling Offices (DSN 527-4110/661-277-4110)
- Schedule BMSS IAW the 412 TW Scheduling Guide.

**5.15. Civil Activities.** Numerous types of civil flight activities occur within R-2508. The following are not DoD approved or sanctioned. This information is only provided to increase aircrew awareness of activities that may occur in the Complex. Updates will be posted on the Daily Brief Sheet.

- **Sky Diving Activity.** Occurs, daily / sunrise – sunset, within 3 NMR of Lone Pine / Death Valley Airport. May occur throughout Owens MOA and in the vicinity of California City Airport.
- **Amateur Rocket Activity.** Surface to highest altitude will be listed on their COA. Activity may also involve sUAS filming in the same area.

<b>KOEHN DRY LAKE</b> NM RADIUS 35° 21' 12" N/117° 48' 25.80" W (EDW 336023)
<b>AERIAL ACRES</b> NM RADIUS OF 35° 06' 16" N / 117° 47' 42" W
<b>REACTION RESEARCH</b> NM RADIUS OF 35° 20' 00" N / 117° 53' 00" W

Table 7. Amateur Rocket Activity

**5.16. Scheduling Complex Special Activities/Special Handling.** Desired activities that cannot be accommodated by current R-2508 doctrine, e.g., operational requests like non-standard lasing.

- Special Activities that require “special handing” are recommended to submit concept of operations proposal (CONOPS including maps, flight profiles, times, operating altitudes, flight restrictions, etc.). Lead time is required to allow all necessary coordination/changes to be approved prior to the scheduled operation.
- Advanced notice is required to allow other complex users to be briefed on the operations (times, routes, altitudes, activities, etc.) and de-conflict the proposed operation from other activities within the R-2508 Complex. A statement will also be included on the R-2508 Daily Brief Sheet capturing the special activity operations.

**Appendix I**  
**Airspace & Geographic Waypoints**

NAME	LAT (N) / LONG (W)
<b>ISABELLA</b>	
MOA JO 7400.10	Beginning at lat. 36°08'00"N., long. 118°35'03"W to lat. 36°08'00"N., long. 117°53'03"W thence south and east along the boundary of R-2505 to lat. 35°39'15"N., long. 117°29'26"W to lat. 35°21'00"N., long. 117°38'33"W to lat. 35°19'20"N., long. 117°38'33"W thence along the western boundary of R-2515 to lat. 34°49'40"N., long. 118°05'48"W to lat. 34°48'00"N., long. 118°05'48"W to lat. 34°51'00"N., long. 118°14'03"W to lat. 34°56'00"N., long. 118°21'03"W to lat. 35°15'00"N., long. 118°35'03"W, to the point of beginning.
ATCAA CCB/JCF/ZLA/ZOA LOA	Beginning at 36 08 00 North 118 35 03 West thence direct 36 08 00 North 117 53 03 West thence south and east along the boundary of R-2505 to 35 39 15 North 117 29 26 West thence direct 35 21 00 North 117 38 33 West thence direct 35 19 20 North 117 38 33 West thence along the western boundary of R-2515 to 34 49 40 North 118 05 48 West thence direct 34 48 00 North 118 05 48 West thence direct 34 51 00 North 118 14 03 West thence direct 34 56 00 North 118 21 03 West thence direct 35 15 00 North 118 35 03 West, thence direct to point of beginning.
Lake Isabella	35-39-00 118-23-00
Needles	36-07-00 118-29-00
Inyokern Airfield	35-38-00 117-50-00
Mojave	35-03-00 118-08-00
<b>OWENS</b>	
MOA JO 7400.10	Beginning at lat. 37°12'00"N., long. 118°35'03"W to lat. 37°12'00"N., long. 118°26'03"W to lat. 37°02'00"N., long. 118°20'03"W to lat. 37°09'00"N., long. 118°00'03"W to lat. 36°46'00"N., long. 118°00'03"W to lat. 36°14'00"N., long. 117°36'03"W thence along the northern and western boundaries of R-2505 to lat. 36°08'00"N., long. 117°53'03"W to lat. 36°08'00"N., long. 118°35'03"W, to the point of beginning.
ATCAA CCB/JCF/ZLA/ZOA LOA	Beginning at 37 12 00 North 118 35 03 West thence direct 37 12 00 North 118 26 03 West thence direct 37 02 00 North 118 20 03 West thence direct 37 09 00 North 118 00 03 West thence direct 36 46 00 North 118 00 03 West

## R-2508 User's Handbook

	thence direct 36 14 00 North 117 36 03 West thence along the northern and western boundaries of R-2505 to thence direct 36 08 00 North 117 53 03 West thence direct 36 08 00 North 118 35 03 West, thence direct to point of beginning.	
Tinemaha "T- Dam"	37-03-41.50	118-13-10.80
Independence	36-48-54.79	118-12-15.41
Lone Pine	36-35-25.35	118-02-47.25
Owens Dry Lake Bed	36-21-32.90	118-57-46.90
<b>SALINE</b>		
MOA JO 7400.10	Beginning at lat. 37°12'00"N., long. 118°00'03"W to lat. 37°12'00"N., long. 117°20'03"W to lat. 36°30'00"N., long. 116°55'03"W to lat. 36°30'00"N., long. 117°48'03"W to lat. 36°46'00"N., long. 118°00'03"W to the point of beginning. Excluding that airspace 3000 feet AGL and below south and east of a line beginning at lat. 37°01'19"N., long. 117°13'39"W to lat. 37°01'19"N., long. 117°13'50"W at lat. 37°05'01"N., long. 117°18'54"W at lat. 37°05'05"N., long. 117°33'47"W at lat. 36°58'57"N., long. 117°33'47"W at lat. 36°58'56"N., long. 117°34'05"W at lat. 36°53'55"N., long. 117°34'11"W at lat. 36°53'51"N., long. 117°35'16"W at lat. 36°51'10"N., long. 117°35'16"W at lat. 36°51'08"N., long. 117°36'20"W at lat. 36°47'58"N., long. 117°36'18"W at lat. 36°47'51"N., long. 117°37'07"W at lat. 36°40'21"N., long. 117°37'08"W at lat. 36°40'21"N., long. 117°36'03"W at lat. 36°37'45"N., long. 117°36'05"W at lat. 36°37'45"N., long. 117°31'44"W at lat. 36°36'52"N., long. 117°31'44"W at lat. 36°36'56"N., long. 117°30'53"W at lat. 36°36'38"N., long. 117°30'36"W at lat. 36°36'31"N., long. 117°29'54"W at lat. 36°35'54"N., long. 117°29'43"W at lat. 36°35'27"N., long. 117°28'59"W at lat. 36°35'29"N., long. 117°28'41"W at lat. 36°34'21"N., long. 117°28'32"W at lat. 36°33'29"N., long. 117°28'45"W at lat. 36°32'39"N., long. 117°30'16"W at lat. 36°31'56"N., long. 117°30'08"W at lat. 36°31'29"N., long. 117°28'20"W at lat. 36°30'16"N., long. 117°25'34"W at lat. 36°30'00"N., long. 117°25'35"W.	
ATCAA CCB/JCF/ZLA/ZOA LOA	Beginning at 37 12 00 North 118 00 03 West thence direct 37 12 00 North 117 20 03 West	

## R-2508 User's Handbook

	thence direct 36 30 00 North 116 55 03 West thence direct 36 30 00 North 117 48 03 West thence direct 36 46 00 North 118 00 03 West, thence direct to point of beginning.	
Eureka Dunes	37-05-58	117-40-22
Nudy Camp	36-47-17.80	117-46-25.20
Saddle	36-32-02.40	117-33-43.60
<b>PANAMINT</b>		
MOA JO 7400.10	Beginning at lat. 36°30'00"N., long. 117°48'03"W to lat. 36°30'00"N., long. 116°55'03"W to lat. 35°34'30"N., long. 116°23'33"W thence along the northern boundary of R-2502N, the eastern, northern, and western boundaries of R-2524, and the northwestern boundary of R-2515 to lat. 35°19'20"N., long. 117°38'33"W to lat. 35°21'00"N., long. 117°38'33"W to lat. 35°39'15"N., long. 117°29'26"W thence along the eastern and northern boundaries of R-2505 to lat. 36°14'00"N., long. 117°36'03"W to the point of beginning. Excluding that airspace (1) 3000 feet AGL and below north and east of a line beginning at lat. 36°30'00"N., long. 117°25'35"W to lat. 36°29'46"N., long. 117°25'36"W to lat. 36°27'14"N., long. 117°22'01"W to lat. 36°25'41"N., long. 117°20'58"W to lat. 36°25'34"N., long. 117°20'29"W to lat. 36°26'16"N., long. 117°19'11"W to lat. 36°25'00"N., long. 117°18'36"W to lat. 36°25'10"N., long. 117°17'57"W to lat. 36°24'15"N., long. 117°17'23"W to lat. 36°23'48"N., long. 117°15'36"W to lat. 36°15'57"N., long. 117°15'33"W to lat. 36°13'55"N., long. 117°09'09"W to lat. 36°08'44"N., long. 117°09'04"W to lat. 36°08'40"N., long. 117°04'39"W to lat. 36°06'58"N., long. 117°03'47"W to lat. 36°05'54"N., long. 117°04'33"W to lat. 36°05'28"N., long. 117°03'54"W to lat. 36°01'42"N., long. 117°02'34"W to lat. 35°58'53"N., long. 117°04'31"W to lat. 35°58'37"N., long. 117°05'17"W to lat. 35°57'13"N., long. 117°06'45"W to lat. 35°55'23"N., long. 117°06'35"W to lat. 35°54'11"N., long. 117°05'24"W to lat. 35°53'10"N., long. 117°01'39"W to lat. 35°52'54"N., long. 116°55'21"W to lat. 35°47'44"N., long. 116°55'22"W to lat. 35°47'44"N., long. 116°36'05"W to lat. 35°39'03"N., long. 116°36'01"W	



## R-2508 User's Handbook

	to lat. 35°39'03"N., long. 116°26'06"W (2) 1500 feet AGL and below within a 3NM radius of the Trona airport.	
ATCAA CCB/JCF/ZLA/ZOA LOA	Beginning at 36 30 00 North 117 48 03 West thence direct 36 30 00 North 116 55 03 West thence direct 35 34 30 North 116 23 33 West thence along the northern boundary of R-2502N, the eastern, northern, and western boundary of R-2524, and the northwestern boundary of R-2515 to 35 19 20 North 117 38 33 West thence direct 35 21 00 North 117 38 33 West thence direct 35 39 15 North 117 29 26 West thence along the eastern and northern boundary of R-2505 to 36 14 00 North 117 36 03 West thence direct to point of beginning.	
Starwars Canyon	36-21-48.80	117-30-32.30
Dogbone	36-23-13.80	117-24-18.10
Ballarat Mines	35-56-43.30	117-12-02.05
Trona Airfield	35-48-44.20	117-19-37.70
<b>SHOSHONE</b>		
MOA JO 7400.10	Beginning at lat. 36°30'00"N., long. 116°55'03"W to lat. 36°30'00"N., long. 116°47'03"W to lat. 36°06'00"N., long. 116°18'03"W to lat. 35°39'00"N., long. 115°53'03"W to lat. 35°18'45"N., long. 116°18'48"W to lat. 35°28'35"N., long. 116°18'48"W to lat. 35°34'30"N., long. 116°23'33"W to the point of beginning. Excluding that airspace (1) 3000 feet AGL and below north and west of a line from beginning at lat. 35°39'03"N., long. 116°26'06"W to lat. 35°39'03"N., long. 116°21'48"W to lat. 35°48'14"N., long. 116°21'49"W to lat. 35°48'11"N., long. 116°29'41"W to lat. 35°52'17"N., long. 116°29'43"W to lat. 35°52'18"N., long. 116°29'22"W to lat. 35°58'22"N., long. 116°29'26"W to lat. 35°58'23"N., long. 116°35'47"W to lat. 36°10'08"N., long. 116°35'47"W to lat. 36°10'11"N., long. 116°38'58"W to lat. 36°17'57"N., long. 116°39'01"W to lat. 36°17'58"N., long. 116°40'33"W to lat. 36°18'30"N., long. 116°41'05"W to lat. 36°24'54"N., long. 116°41'04"W to lat. 36°24'54"N., long. 116°40'51"W (2) 1500 feet AGL and below within a 3NM radius of the Shoshone airport.	
North ATCAA CCB/JCF/ZLA/ZOA LOA	Beginning at 36 30 00 North 116 55 03 West thence direct 36 30 00 North 116 47 03 West thence direct 36 06 00 North 116 18 03 West	

## R-2508 User's Handbook

	thence direct 35 44 15 North 115 57 48 West thence direct 35 28 35 North 116 18 48 West thence direct 35 34 30 North 116 23 33 West thence direct to point of beginning.
South ATCAA CCB/JCF/ZLA/ZOA LOA	Beginning at 35 44 15 North 115 57 45 West thence direct 35 39 00 North 115 53 00 West thence direct 35 18 45 North 116 18 46 West thence direct 35 28 35 North 116 18 46 West thence direct to point of beginning.
<b>DEATH VALLEY</b>	
<b><i>NOTE: Exclusion of MOA airspace above Death Valley National Park and Domeland Wilderness Area applies to the 1977 contours of the former National Monument and Wilderness Area. This difference in affected airspace may not be accurately reflected in Sectional Charts.</i></b>	
Boundary of Death Valley National Park (Monument Boundaries) within <b>Saline</b> R-2508 Handbook	Beginning at 36°30'00"N/117°25'35"W thence direct 37°01'19"N/117°13'50"W thence direct 37°05'01"N/117°18'54"W thence direct 37°05'05"N/117°33'47"W thence direct 36°58'57"N/117°33'47"W thence direct 36°58'56"N/117°34'05"W thence direct 36°53'55"N/117°34'11"W thence direct 36°53'51"N/117°35'16"W thence direct 36°51'10"N/117°35'16"W thence direct 36°51'08"N/117°36'20"W thence direct 36°47'58"N/117°36'18"W thence direct 36°47'51"N/117°37'07"W thence direct 36°40'21"N/117°37'08"W thence direct 36°40'21"N/117°36'03"W thence direct 36°37'45"N/117°36'05"W thence direct 36°37'45"N/117°31'44"W thence direct 36°36'52"N/117°31'44"W thence direct 36°36'56"N/117°30'53"W thence direct 36°36'38"N/117°30'26"W thence direct 36°36'31"N/117°29'54"W thence direct 36°35'54"N/117°29'43"W thence direct 36°35'27"N/117°28'59"W thence direct 36°35'29"N/117°28'41"W thence direct 36°34'21"N/117°28'32"W thence direct 36°33'29"N/117°28'45"W thence direct 36°32'39"N/117°30'16"W thence direct 36°31'56"N/117°30'08"W thence direct 36°31'29"N/117°28'20"W thence direct 36°30'16"N/117°25'34"W thence direct 36°30'00"N/117°25'35"W
Boundary of Death Valley National Park (Monument Boundaries) within <b>Panamint</b> R-2508 Handbook	Beginning at 36°30'00"N/117°25'35"W thence direct 36°29'46"N/117°25'36"W thence direct 36°27'14"N/117°22'01"W thence direct 36°25'41"N/117°22'01"W thence direct 36°25'34"N/117°20'58"W thence direct 36°26'16"N/117°19'11"W

# R-2508 User's Handbook

	thence direct 36°25'00"N/117°18'36"W thence direct 36°25'10"N/117°17'57"W thence direct 36°24'15"N/117°17'23"W thence direct 36°23'48"N/117°15'36"W thence direct 36°13'57"N/117°15'33"W thence direct 36°13'55"N/117°09'09"W thence direct 36°08'44"N/117°09'04"W thence direct 36°08'40"N/117°09'04"W thence direct 36°06'58"N/117°03'47"W thence direct 36°05'54"N/117°04'33"W thence direct 36°05'28"N/117°03'54"W thence direct 36°01'42"N/117°02'34"W thence direct 35°58'53"N/117°04'31"W thence direct 35°58'37"N/117°05'17"W thence direct 35°57'13"N/117°06'45"W thence direct 35°55'23"N/117°06'35"W thence direct 35°54'11"N/117°05'24"W thence direct 35°53'10"N/117°01'39"W thence direct 35°52'54"N/116°55'21"W thence direct 35°47'44"N/116°55'22"W thence direct 35°47'44"N/116°36'05"W thence direct 35°39'03"N/116°36'01"W thence direct 35°39'03"N/116°26'06"W	
Boundary of Death Valley National Park (Monument Boundaries) within Shoshone R-2508 Handbook	Beginning at 35°39'03"N/116°26'06"W thence direct 35°39'03"N/116°21'48"W thence direct 35°48'14"N/116°21'49"W thence direct 35°48'11"N/116°29'41"W thence direct 35°52'17"N/116°29'43"W thence direct 35°58'22"N/116°26'22"W thence direct 35°58'23"N/116°35'47"W thence direct 36°10'08"N/116°35'47"W thence direct 36°10'11"N/116°38'58"W thence direct 36°17'57"N/116°39'01"W thence direct 36°17'58"N/116°40'33"W thence direct 36°18'30"N/116°41'05"W thence direct 36°24'54"N/116°41'04"W thence direct 36°24'54"N/116°40'51"W	
Death	36-58-00	117-21-00
Stove Pipe	36-36-23	117-08-47
BISHOP		
MOA JO 7400.10	Beginning at lat. 37°12'00"N., long. 118°26'03"W to lat. 37°12'00"N., long. 118°00'03"W to lat. 37°09'00"N., long. 118°00'03"W to lat. 37°02'00"N., long. 118°20'03"W to the point of beginning.	
PORTERVILLE		
MOA JO 7400.10	Beginning at lat. 36°08'00"N., long. 119°00'03"W to lat. 36°08'00"N., long. 118°35'03"W to lat. 35°40'00"N., long. 118°35'03"W	

## R-2508 User's Handbook

	to lat. 35°40'00"N., long. 118°51'03"W, to the point of beginning.
ATCAA CCB/JCF/ZLA/ZOA LOA	Beginning at 36 08 00 North 119 00 03 West thence direct 36 08 00 North 118 35 03 West thence direct 35 40 00 North 118 35 03 West thence direct 35 40 00 North 118 51 03 West, thence direct to point of beginning.
<b>BAKERSFIELD</b>	
MOA JO 7400.10	Beginning at lat. 35°40'00"N., long. 118°51'03"W to lat. 35°40'00"N., long. 118°35'03"W to lat. 35°15'00"N., long. 118°35'03"W to lat. 34°56'00"N., long. 118°21'03"W to lat. 35°14'00"N., long. 118°42'03"W, to the point of beginning.
ATCAA CCB/JCF/ZLA/ZOA LOA	Beginning at 35 40 00 North 118 51 03 West thence direct 35 40 00 North 118 35 03 West thence direct 35 15 00 North 118 35 03 West thence direct 34 56 00 North 118 21 03 West thence direct 35 14 00 North 118 42 03 West, thence direct to point of beginning.
<b>BUCKHORN</b>	
MOA JO 7400.10	Beginning at lat. 34°49'40"N., long. 118°05'48"W thence along southern boundary of R-2515 to lat. 34°51'17"N., long. 117°26'03"W to lat. 34°49'30"N., long. 117°26'03"W to lat. 34°46'30"N., long. 117°35'03"W to lat. 34°46'00"N., long. 118°00'03"W to lat. 34°48'00"N., long. 118°05'48"W, to the point of beginning.
ATCAA CCB/JCF/ZLA/ZOA LOA	Beginning at 34 49 40 North 118 05 48 West thence along the southern boundary of R-2515 to 34 51 17 North 117 26 03 West thence direct 34 49 30 North 117 26 03 West thence direct 34 46 30 North 117 35 03 West thence direct 34 46 00 North 118 00 03 West thence direct 34 48 00 North 118 05 48 West, thence direct to point of beginning.
<b>BARSTOW</b>	
MOA JO 7400.10	Beginning at lat. 35°07'00"N., long. 116°34'03"W to lat. 35°01'20"N., long. 116°41'03"W to lat. 34°56'20"N., long. 117°09'03"W thence along the eastern border of R-2515 and the southern boundary of R-2502E to the point of beginning.
East ATCAA CCB/JCF/ZLA/ZOA LOA	Beginning at 35 07 00 North 116 47 48 West thence direct 35 07 00 North 116 34 03 West thence direct 35 01 20 North 116 41 03 West thence direct 34 58 19 North 116 58 02 West thence direct to point of beginning.
West ATCAA CCB/JCF/ZLA/ZOA LOA	Beginning at 35 06 30 North 116 58 43 West thence direct 35 08 50 North 116 48 43 West thence direct 35 07 00 North 116 47 48 West thence direct 34 58 19 North 116 58 02 West

## R-2508 User's Handbook

	thence direct 34 56 20 North 117 09 03 West thence direct to point of beginning.	
DEEP SPRINGS		
ATCAA CCB/JCF/ZLA/ZOA LOA	Beginning at 37 12 00 North 118 00 03 West thence direct 37 30 00 North 118 00 03 West thence direct 37 30 00 North 117 30 03 West thence direct 37 12 00 North 117 20 03 West thence direct to point of beginning.	
R-2502 N/E		
East JO 7400.10	Beginning at lat. 35°28'35"N., long. 116°18'48"W to lat. 35°18'45"N., long. 116°18'48"W to lat. 35°07'00"N., long. 116°34'03"W to lat. 35°07'00"N., long. 116°47'48"W to lat. 35°08'50"N., long. 116°48'43"W to lat. 35°10'25"N., long. 116°42'18"W, to the point of beginning.	
North JO 7400.10	Beginning at lat. 35°37'45"N., long. 116°29'43"W to lat. 35°34'30"N., long. 116°29'43"W to lat. 35°34'30"N., long. 116°23'33"W to lat. 35°28'35"N., long. 116°18'48"W to lat. 35°10'25"N., long. 116°42'18"W to lat. 35°08'50"N., long. 116°48'43"W to lat. 35°10'00"N., long. 116°49'03"W to lat. 35°19'00"N., long. 116°49'03"W to lat. 35°19'00"N., long. 116°55'23"W to lat. 35°37'45"N., long. 116°55'23"W, to the point of beginning.	
R-2505		
JO 7400.10	R-2505 China Lake, CA Boundaries. Beginning at lat. 36°14'00"N., long. 117°53'03"W to lat. 36°14'00"N., long. 117°25'03"W to lat. 35°40'30"N., long. 117°25'03"W to lat. 35°37'30"N., long. 117°35'33"W to lat. 35°37'30"N., long. 117°47'33"W to lat. 35°54'00"N., long. 117°53'03"W, to the point of beginning.	
Coso Sam	36-12-24.37	117-21-00
Airport Dry Lake	35-54-06.66	117-42-57.01
R-2506		
JO 7400.10	Beginning at lat. 35°37'30"N., long. 117°41'23"W to lat. 35°28'00"N., long. 117°40'53"W to lat. 35°28'00"N., long. 117°47'03"W to lat. 35°37'30"N., long. 117°47'33"W to the point of beginning.	
R-2508		
JO 7400.10	Beginning at lat. 37°12'00"N., long. 117°20'03"W to lat. 35°34'00"N., long. 116°23'03"W to lat. 35°28'35"N., long. 116°18'48"W to lat. 35°18'45"N., long. 116°18'48"W to lat. 35°07'00"N., long. 116°34'03"W to lat. 35°07'00"N., long. 116°47'48"W to lat. 35°08'50"N., long. 116°48'43"W	

## R-2508 User's Handbook

	<p>to lat. 35°06'30"N., long. 116°58'43"W  to lat. 34°53'30"N., long. 117°11'53"W  to lat. 34°50'20"N., long. 117°32'03"W  to lat. 34°48'30"N., long. 117°32'03"W  to lat. 34°48'00"N., long. 117°35'03"W  to lat. 34°48'00"N., long. 118°01'03"W  to lat. 34°49'40"N., long. 118°05'48"W  to lat. 34°51'30"N., long. 118°05'48"W  to lat. 34°56'00"N., long. 118°21'03"W  to lat. 35°15'00"N., long. 118°35'03"W  to lat. 37°12'00"N., long. 118°35'03"W, to the point of beginning.</p>
<b>R-2515</b>	
JO 7400.10	<p>R-2515 Muroc Lake, CA Boundaries.  Beginning at lat. 35°19'00"N., long. 116°49'03"W  to lat. 35°10'00"N., long. 116°49'03"W  to lat. 35°08'50"N., long. 116°48'43"W  to lat. 35°06'30"N., long. 116°58'43"W  to lat. 34°53'30"N., long. 117°11'53"W  to lat. 34°50'20"N., long. 117°32'03"W  to lat. 34°48'30"N., long. 117°32'03"W  to lat. 34°48'00"N., long. 117°35'03"W  to lat. 34°48'00"N., long. 118°01'03"W  to lat. 34°49'40"N., long. 118°05'48"W  to lat. 35°01'00"N., long. 118°05'48"W  to lat. 35°27'40"N., long. 117°26'03"W  to lat. 35°15'56"N., long. 117°26'03"W  to lat. 35°15'56"N., long. 116°55'23"W  to lat. 35°19'00"N., long. 116°55'23"W, to the point of beginning.</p>
<b>R-2524</b>	
JO 7400.10	<p>R-2524 Trona, CA Boundaries.  Beginning at lat. 35°47'46"N., long. 116°55'23"W  to lat. 35°15'56"N., long. 116°55'23"W  to lat. 35°15'56"N., long. 117°26'03"W  to lat. 35°36'00"N., long. 117°26'03"W  to lat. 35°36'00"N., long. 117°16'55"W  to lat. 35°47'46"N., long. 117°16'55"W, to the point of beginning.</p>
<b>R-2511</b>	
JO 7400.10	<p>Beginning at lat. 35°37'30" N; long. 117°35'33" W  to lat. 35°40'30" N; long. 117°25'03" W  to lat. 35°36'00" N; long. 117°16'55" W  to lat. 35°36'00" N; long. 117°26'03" W  to lat. 35°27'40" N; long. 117°26'03" W; to the point of beginning.</p>