

# **Fresno Area Mid-Air Collision Avoidance Program (MACA)**



**144<sup>th</sup> Fighter Wing  
California Air National Guard  
Fresno, CA**



**This pamphlet is courtesy of the 144<sup>th</sup> Fighter Wing located at the California Air National Guard Base, Fresno Yosemite International Airport (KFAT). This pamphlet is current as of March 2017; however it is subject to change without notice and is for informational purposes only.**

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**Website Links:**

**144<sup>th</sup> Fighter Wing, Flight Safety**

**<http://www.144fw.ang.af.mil/resources/flightsafety>**

**FAA's Mid-Air Collision Avoidance Website**

**[https://www.faasafety.gov/gslac/ALC/libview\\_normal.aspx?id=6851](https://www.faasafety.gov/gslac/ALC/libview_normal.aspx?id=6851)**

## **INTRODUCTION**

The goal of the Fresno Area MACA program is to promote a safe flying environment by educating local civil aviation users about the Fresno based military aircraft and their mission. Together we can enjoy the airspace over California safely.

### **Sharing the Skies Safely over California:**

#### **The 144<sup>th</sup> Fighter Wing:**

The missions of the 144FW include providing 24- hour Airspace Control Alert to ensure sovereignty of U.S. airspace, and to train for combat operations worldwide. The 144FW is currently assigned the F-15 Eagle.

#### **The Strike Fighter Wing, Pacific, Lemoore:**

The Lemoore Naval Air Station based FA-18s share the same primary training areas as the 144<sup>th</sup> Fighter Wing. NAS Lemoore (KNLC) is located approximately 30 miles south of the Fresno Air Terminal (KFAT).

#### **The 3<sup>rd</sup> Marine Aircraft Wing, San Diego:**

The Marine Corps Reserve F-18s from Miramar MCAS routinely visit Fresno on the weekends. These F-18s normally fly the same departure and recovery patterns flown by the Fresno based 144<sup>th</sup> FW F-16s.

**THIS IS WHAT WE WANT TO AVOID!**

**Near Mid-Air between a T-38 and General Aviation aircraft in 2005 as seen through the T-38 Head's Up Display (HUD)**



T-38 parameters in this picture are: 353 KIAS, 680 AGL, 1590 MSL, Heading 327, Level Flight.

## **AIRCRAFT TYPES**

The 144FW is assigned the F-15C Eagle.



### Specifications:

- Crew: 1
- Length: 63', 9"
- Height: 18' 8"
- Wingspan: 42' 10"
- Two Pratt & Whitney 220E Engines: 25,000 lbs thrust each
- Max speed: 1000 KIAS or Mach 2.5
- Likes to travel in pairs

## **SPECIAL USE AIRSPACE**

The training airspace most often utilized by the 144FW includes:

1. The R2508 Complex and the associated MOAs lying underneath the confines of R2508. These MOAs include: Bishop, Owens, Saline, Isabella, Panamint, and Shoshone.
2. The Warning Areas off the California coast: W283, W285, and W532.
3. Hunter Liggett MOA, Lemoore MOA, and Foothill MOA.
4. And occasionally the Turtle and Quail MOAs in southeastern California.

## **COLLISION AVOIDANCE TIPS**

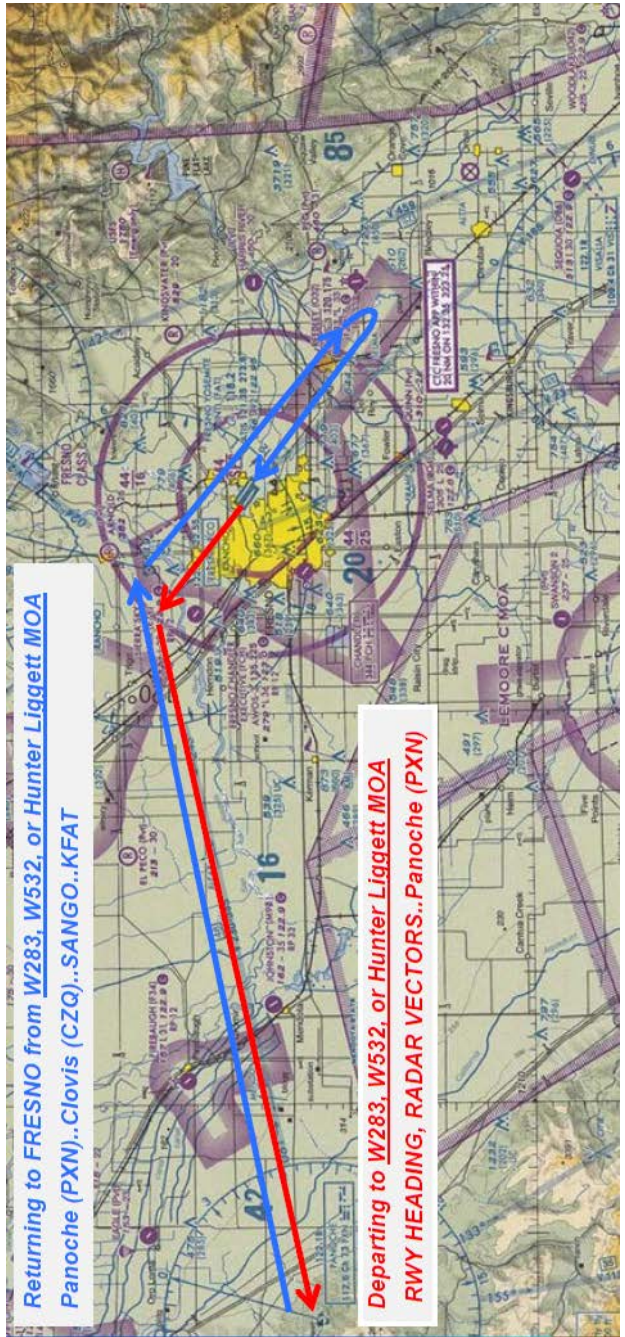
1. Plan your trip accordingly. Be aware of the type of airspace in which you plan to operate. Check the NOTAMS, and/or call FSS to see if the MOAs are active. If they are, your safest course of action is to avoid the MOAs.
2. Check TFR locations, we could be patrolling the TFR: ***<http://tfrcheck.com/>***
3. Utilize VFR air traffic control advisories, or fly IFR.
4. Scan! Use the proper scanning techniques. Keep looking outside, scan by sections, focus on something in the distance first (cloud, landmark, etc.) then look “into the blue” and see if you can find any nearby targets.
5. Study the attached typical fighter routes to increase your situational awareness.

# Departure / Returns to/from the West

**NORTH**

When departing Runway 29, the fighters are usually cleared on course once past the San Joaquin River.

When departing Runway 11, fighters are usually vectored to the northwest shortly after takeoff.

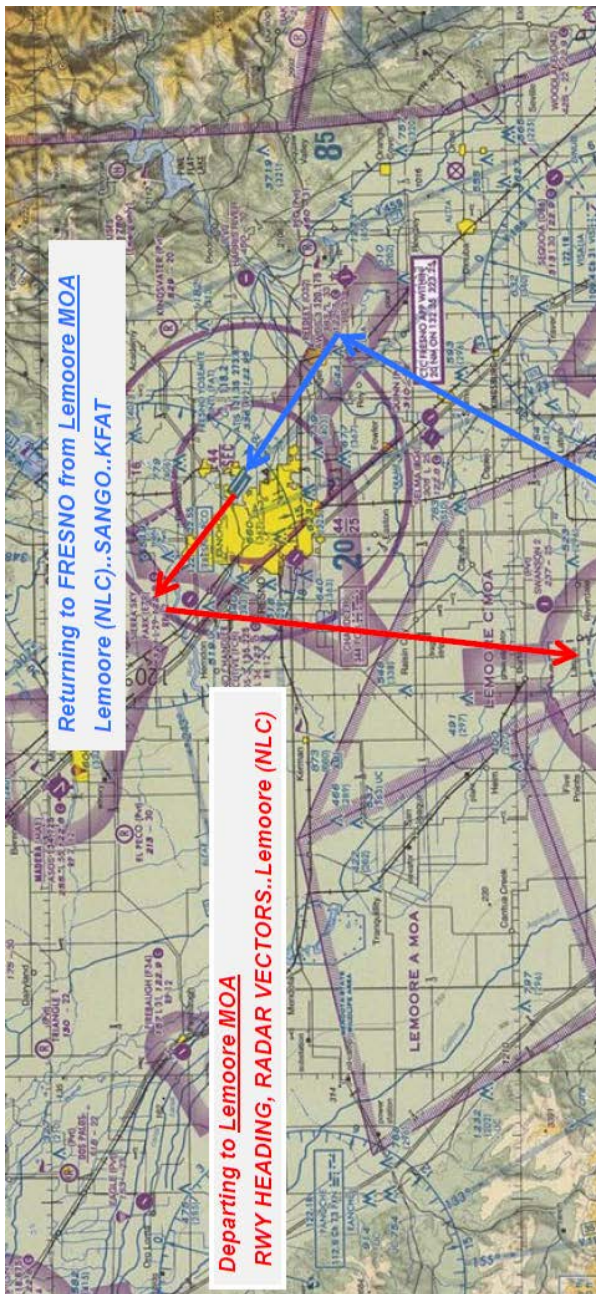




## Departure / Returns to/from the South

NORTH

When departing to the Lemoore MOA, fighters are generally cleared direct Lemoore soon after takeoff.



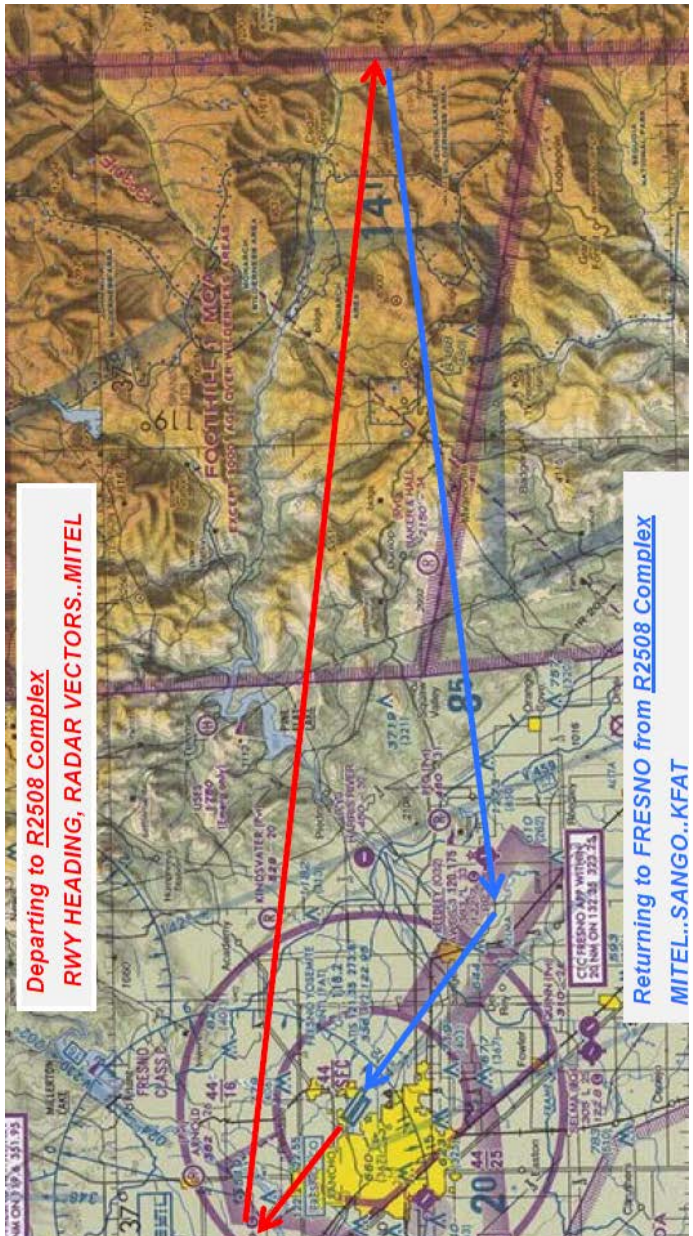


# Departure / Returns to/from the East



When departing Runway 29, it's usually past the San Joaquin River when we turn east on course.

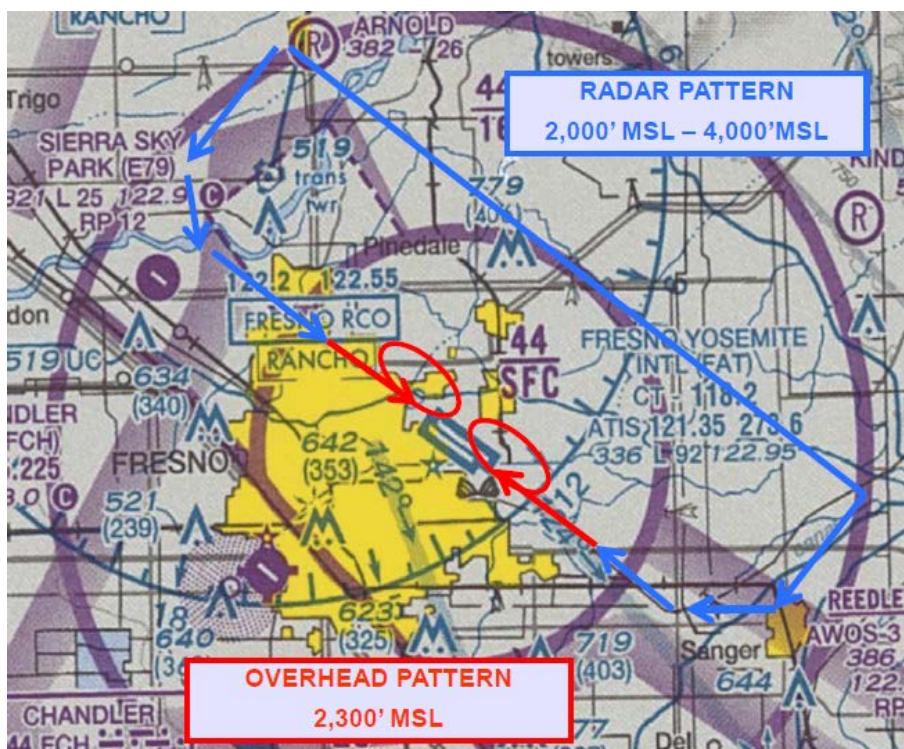
When departing Runway 11, we turn east within a few miles after takeoff.



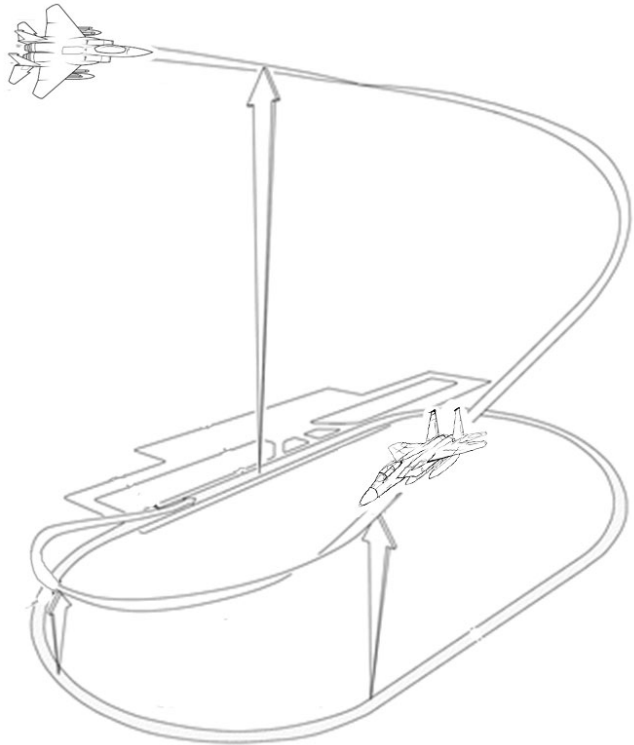
## **Fresno Fighter Traffic Pattern**

The “overhead” pattern is the common VFR pattern fighters use. “Initial” is where the fighters approach the runway at 2300 MSL a couple miles from the approach end, then while over the runway, they “break” to the north and fly a 360 degree oval “race track” type pattern.

The “radar pattern” is what we call it when we’re being vectored for multiple instrument approaches.



**F-15 Overhead Pattern**  
*Pilots will request “Initial”*



**Normal Initial (Overhead Pattern)**

**300 knots, 2300' MSL**

**Overhead threshold, pilots “break” 180 to downwind staying at 2300’**

**From “Perch” descending final turn about 200 knots**

**High Initial (“Tactical” Overhead Pattern)**

**350 knots, 5000' MSL, in 1 mile line abreast formation**

**Pilots “break” to downwind steep descent to 2300’**

**Same “Perch” and final turn**

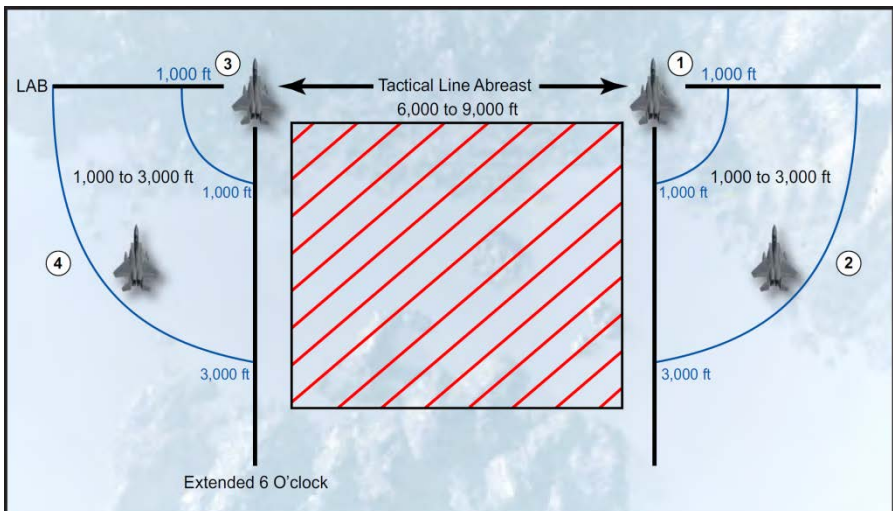
## Formations

The formations we fly that are easiest for you to spot us are either what we call “fingertip” or “route” formation.

Fingertip is where there are just three feet of lateral spacing between wingtips. Route formation is when the wingmen can loosen up the formation to 500 feet of lateral separation.

Formations we often fly that make it difficult for you to spot us are “tactical” formations. We’ll spread apart by about a mile and not co-altitude. So, the point here is that if you see one fighter, he’s probably not the only one in your vicinity. Look several thousand feet either side of him and different altitudes to find the other fighter(s).

### F-15 “Fluid-4” Formation



## **Air Force Fighter Pilot Phraseology You Might Hear When Listening to Tower Frequency**

- Initial:** 3 to 5 miles on the extended centerline off the approach end of the runway at traffic pattern altitude (2000' AGL at KFAT)
- Tactical:** Same as Initial but starting at 5000' MSL
- Break:** Position where we start our 180 degree turn over the runway to the downwind
- Perch:** Position at which we start the 180 degree descending turn from downwind to the runway
- Closed:** Pulling up from a low approach to the downwind position



This is an F-15 head on. The goal of this pamphlet and the MACA materials are to lessen the chances of seeing this in real life.



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