

# Mid-Air Collision Avoidance (MACA) Program

56<sup>th</sup> Fighter Wing

Luke Air Force Base, Arizona

February 2023





Dear Fellow Aviators,

Midair collisions are an area of vital concern to everyone who flies an airplane. The actual number of mid-air collisions between Air Force aircraft and general aviation aircraft is relatively low; however, 80 percent of reported Air Force near misses occur with general aviation aircraft. Because of increasing general aviation traffic and heavy concentrations of military aircraft involved in training, we want to inform you about the flying activity at Luke Air Force Base.

The purpose of this pamphlet is to alert you to the many areas of high midair collision potential in the skies over Arizona and to discuss ways to make them safer. This pamphlet will describe the types of military aircraft you may encounter, arrival and departure routes, military operating areas, and military training routes. It also provides information regarding midair collisions and ways we can all help avoid them.

The pilots and controllers assigned to Luke Air Force Base are committed to maintaining a valid and active midair collision avoidance program. We hope this pamphlet will serve to increase your understanding of Luke's flying activities so we may continue to safely share the skies. If you desire any additional information or a briefing from the Luke Air Force Base MACA team members concerning our operations, please contact the Luke Flight Safety Office at (623) 856-6942 or [56fw.sef@us.af.mil](mailto:56fw.sef@us.af.mil).

# Luke AFB Mission

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Luke is the largest single fighter base worldwide with over 180 aircraft assigned. All phases of F-16/F-35 flight training for USAF, and foreign partner, pilots are conducted here.

Location: 19 miles West of Phoenix Sky Harbor

Airfield Identifier: KLUF

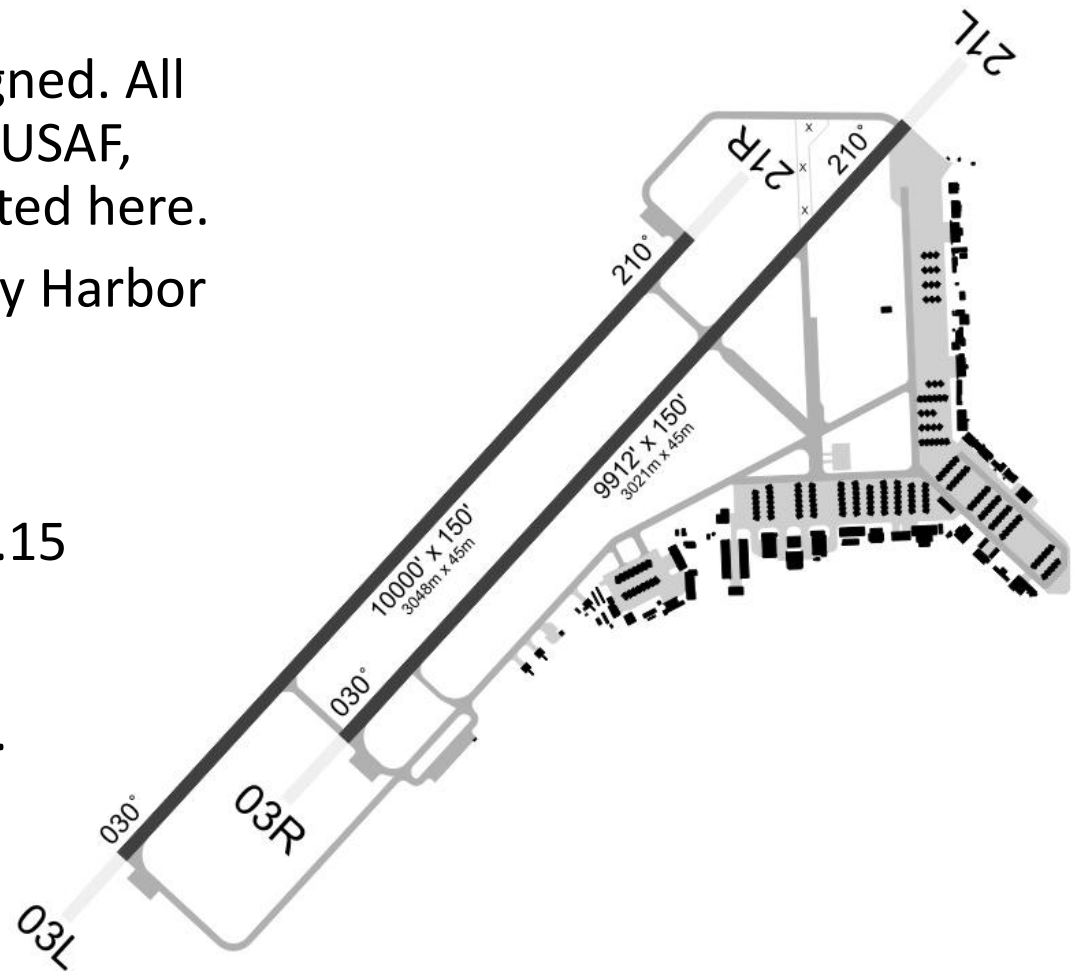
Coordinates: N 33 32.26 W 112 22.8

Elevation: 1085'

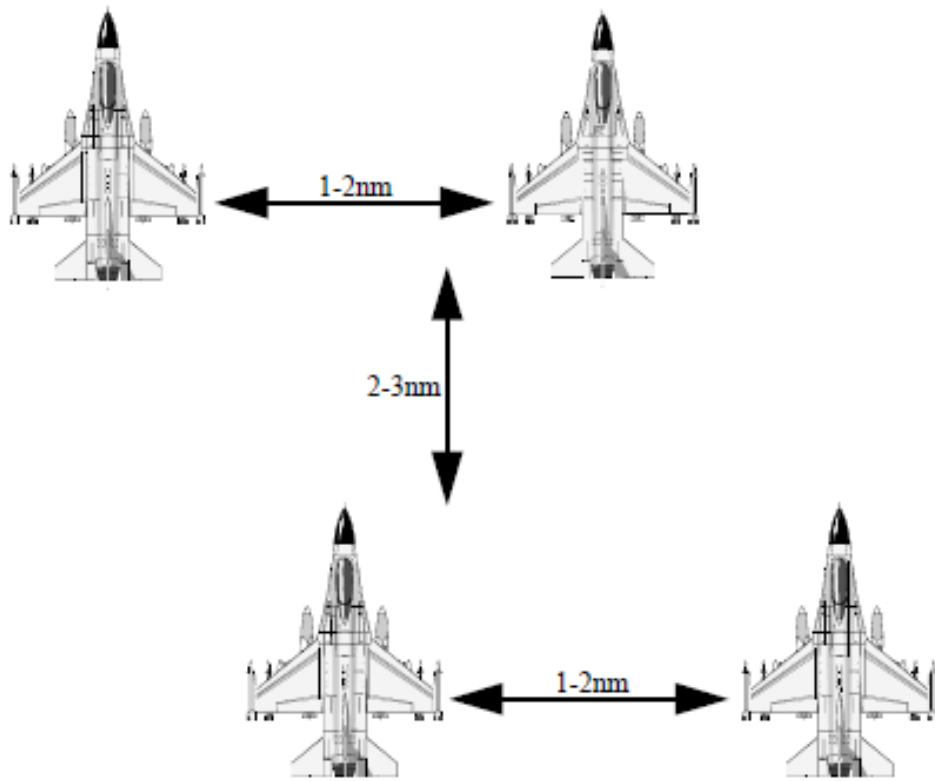
Frequencies: Approach - 125.45/ 118.15

Tower - 119.1

Luke AFB is closed to all civilian traffic.



# F-16/F-35 Operating Information

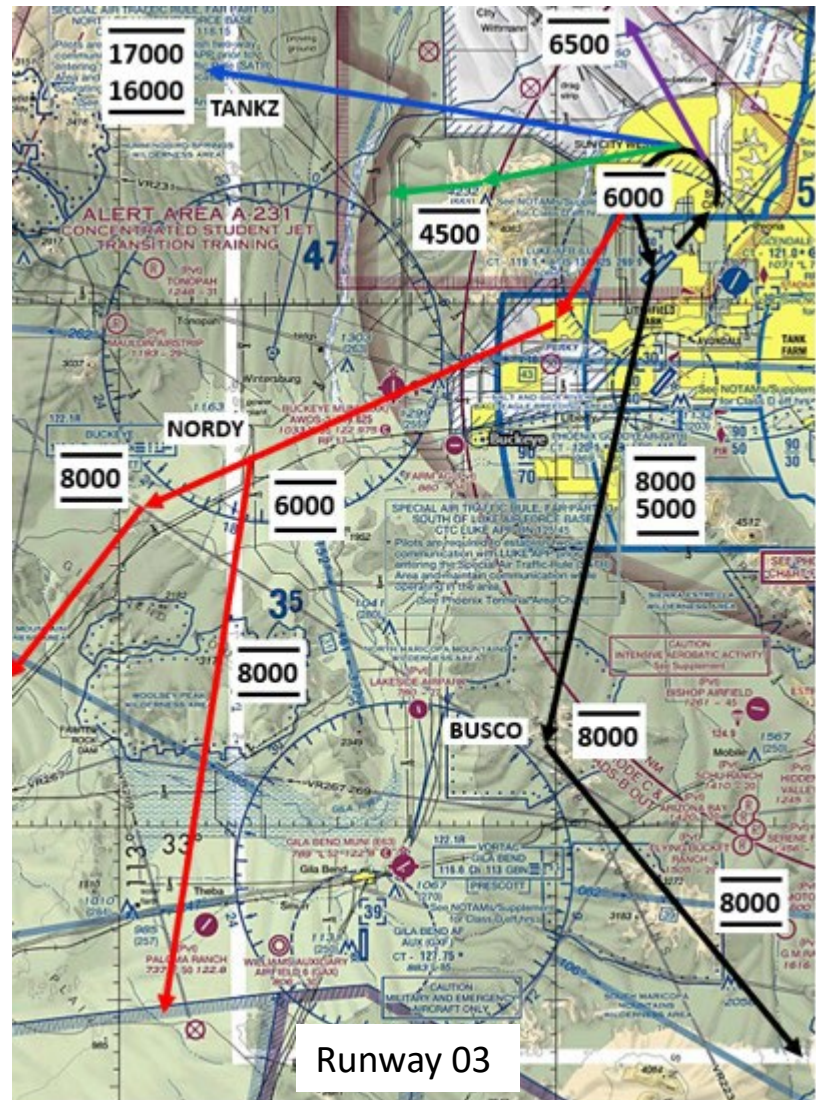


If you see one F-16 or F-35, *look for others*...chances are high there will be another one close by.

- Mission: Multi-role fighters
- Formation: 2-4 aircraft
- Airspeeds
  - Departure: 350 kts
  - Recovery/Pattern: 300 kts
  - Approach: 150-175 kts
- TCAS: none
- ADS-B: In only, via Stratus receivers and ForeFlight if utilized
- Radios: UHF and VHF capable, primarily use UHF to communicate with Air Traffic Control.



# Luke AFB Departures



**BLACK** - VFR South & BUSCO Departures

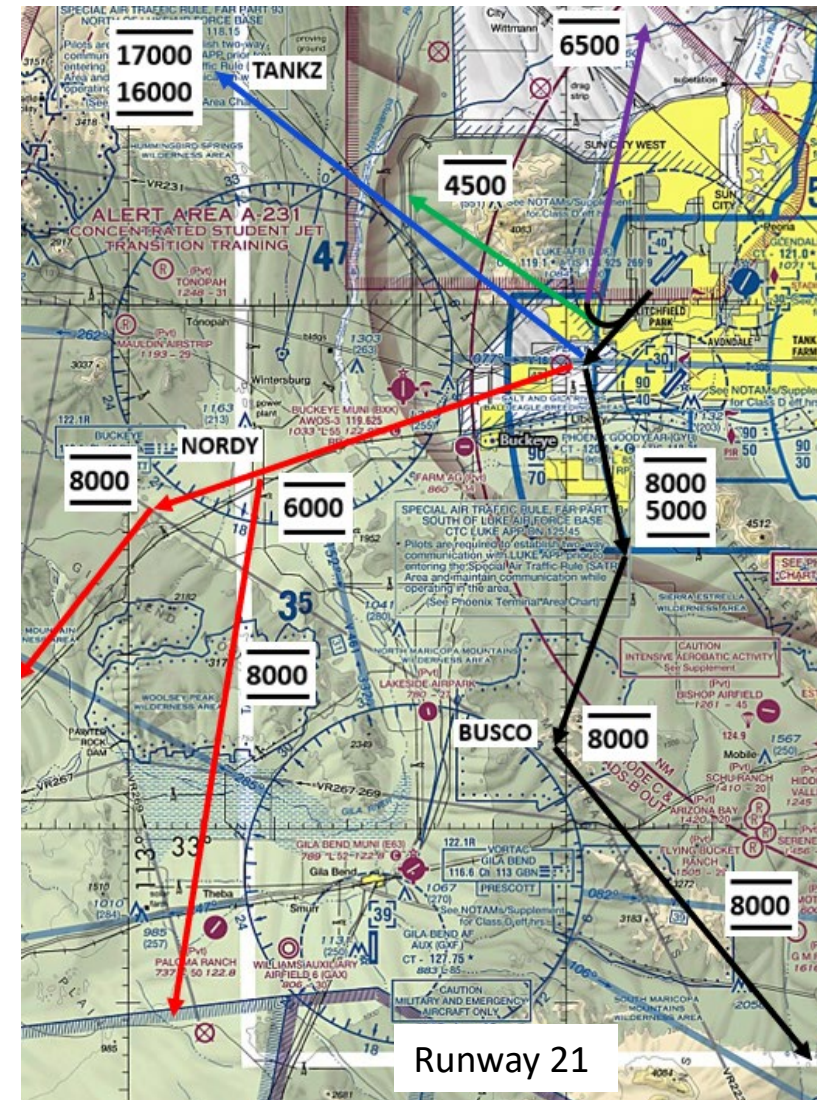
**RED** - NORDY Departure to NOLLS or ARSON

**BLUE** - WEST VALLEY 1 (TANKZ-GLADDEN) Departure

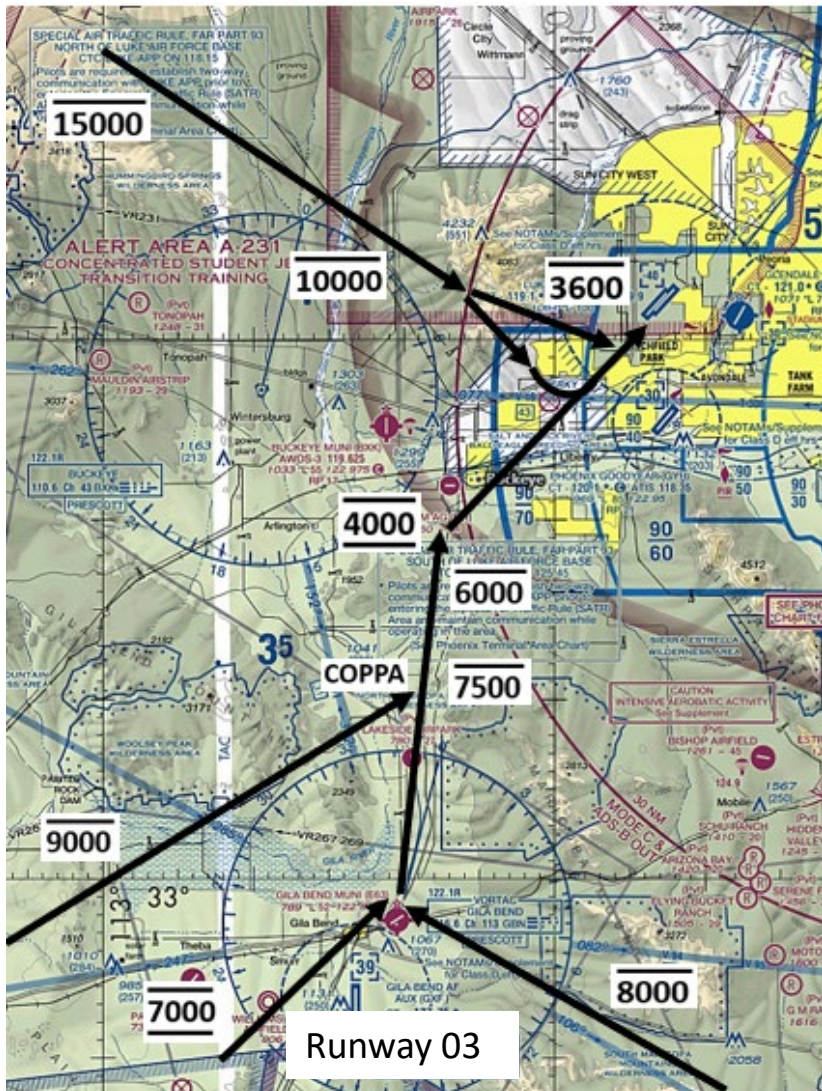
**GREEN** - VFR West Departure

**PURPLE** - LAKE & VFR North Departures

Contact Luke Approach on 118.15 (north) OR 125.45 (south) for advisories



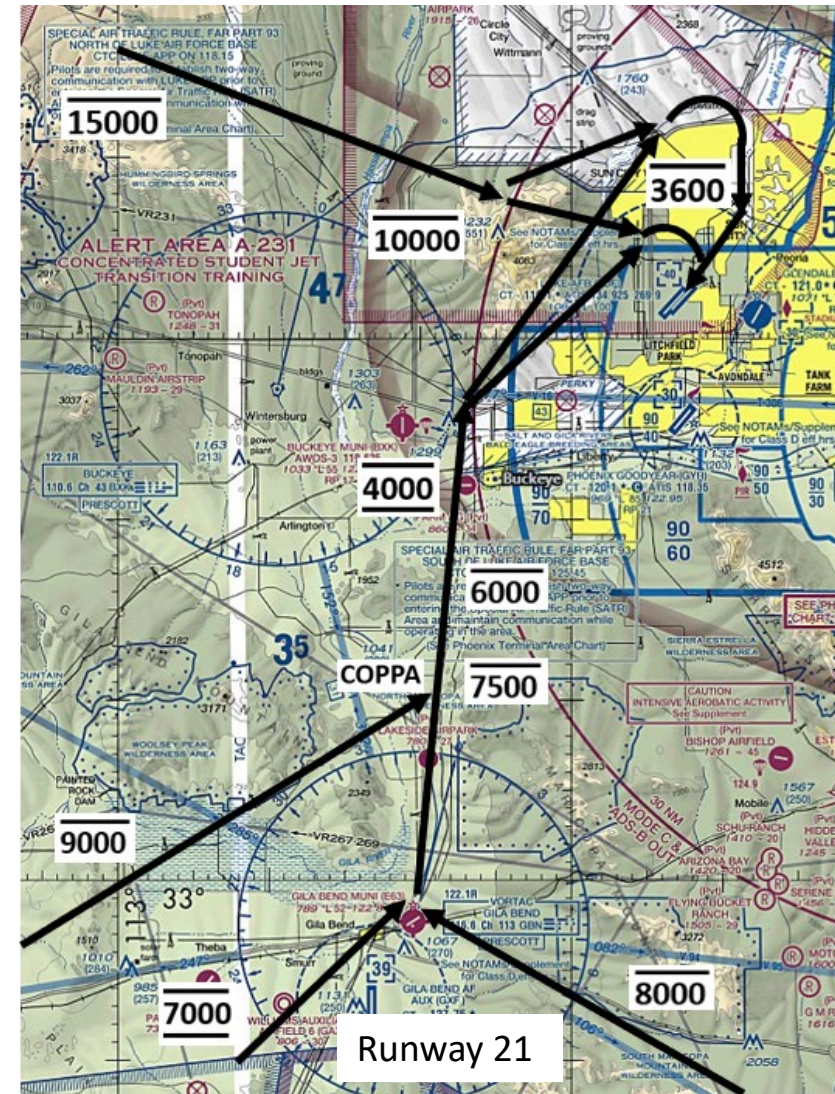
# Luke AFB Arrivals



Arrivals from the south (Valley Recovery) funnel to COPPA (GBN351/13) enroute to Luke

Arrivals from the north (Tankz Recovery) enter the Luke Traffic Pattern from northwest of the White Tank Mountains

Contact Luke Approach on 118.15 (north) OR 125.45 (south) for advisories

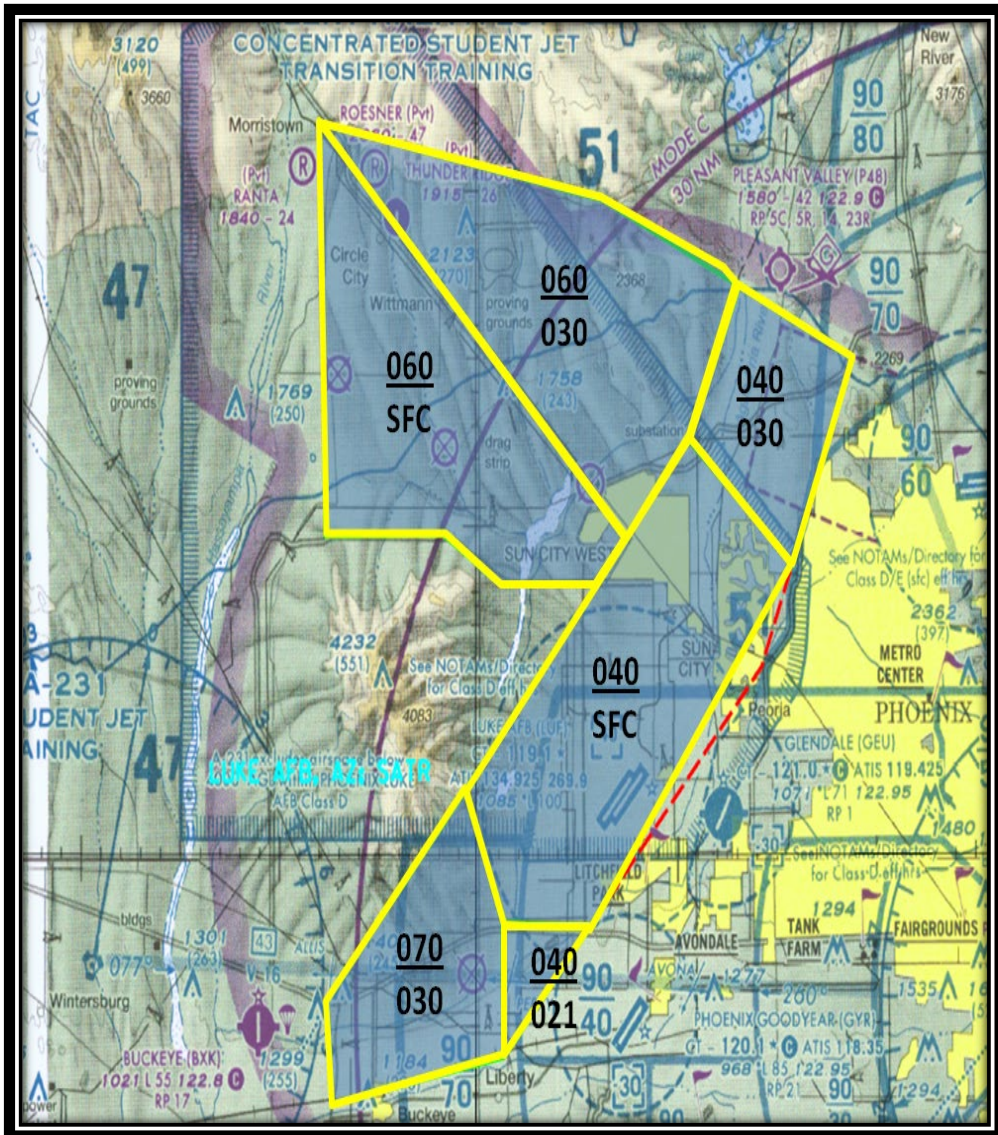


Arrivals from the south (Valley Recovery) funnel to COPPA (GBN351/13) enroute to Luke

Arrivals from the north (Tankz Recovery) enter the Luke Traffic Pattern from northwest of the White Tank Mountains

Contact Luke Approach on 118.15 (north) OR 125.45 (south) for advisories

# Luke Special Air Traffic Rules (SATR)



Applicable to aircraft conducting VFR operations in the vicinity of Luke AFB

- Procedural rule necessary to reduce the potential for midair collisions between military/civilian and civilian/civilian flights in high density traffic area.
- Active during official daylight hours, Monday – Friday during Luke AFB flight training, as broadcast on ATIS (LUF, GYR, GEU, DVT). Other times by NOTAM.
- Two-way radio communication required, contact Luke Approach:
  - 118.15 North of BXK
  - 125.45 South BXK



# Special Use Airspace (SUA)

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**Military Operations Areas (MOAs):** Airspace established outside of Class A airspace to separate or segregate certain non-hazardous military flight activities from IFR aircraft and to identify for VFR aircraft where these activities are conducted.

- Flight activities include, but are not limited to, air combat maneuvers (aka dogfighting), air intercepts, low altitude tactics, etc and can frequently include 10+ aircraft.
- Depicted on sectional, VFR Terminal and Enroute Low Altitude charts.
- VFR flight through MOAs is not prohibited, but strong consideration should be made to avoid whenever able. Closure rates can easily exceed 1,000'/sec.
- Contact controlling agency for advisories if transiting through MOAs.

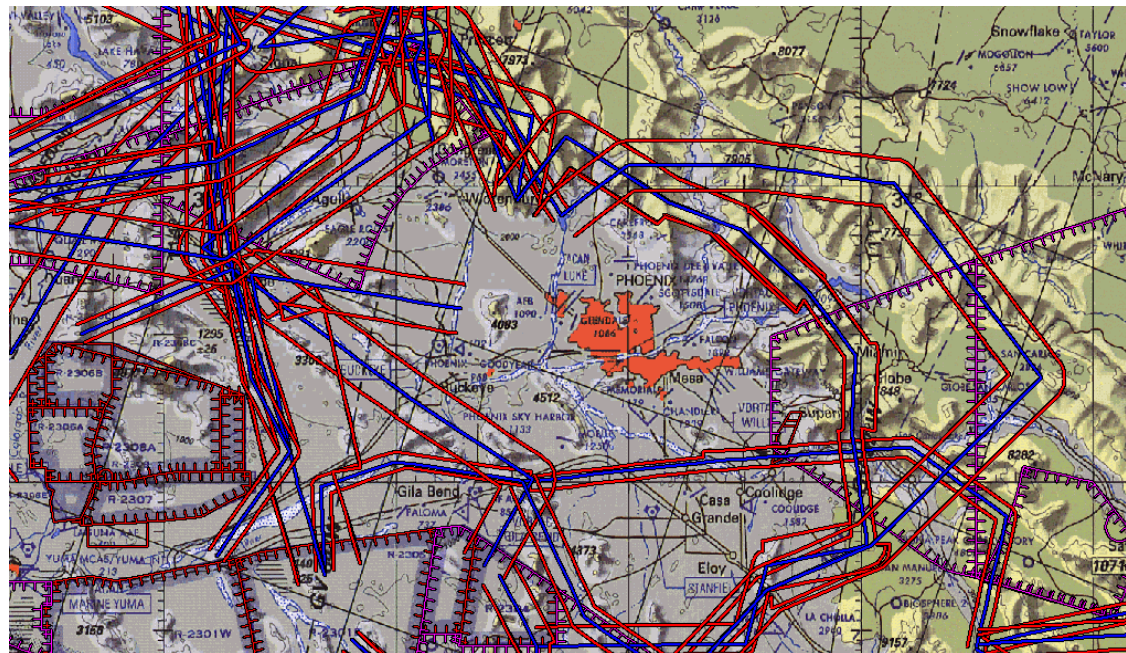
**Restricted Areas:** Airspace within which the flight of aircraft, while not wholly prohibited, is subject to restriction.

- Designated when determined necessary to confine or segregate activities considered hazardous to nonparticipating aircraft such as artillery fire, aerial gunnery, or guided missiles (where we practice dropping bombs and air-to-surface gunnery)
- To check R-2301/2304/2305 status contact ABQ CTR 125.25 or 126.45, Luke Approach 125.45, Snakeye (non-traffic range monitoring facility) 122.775, or Gila Bend Tower 127.75

# Special Use Airspace (SUA)

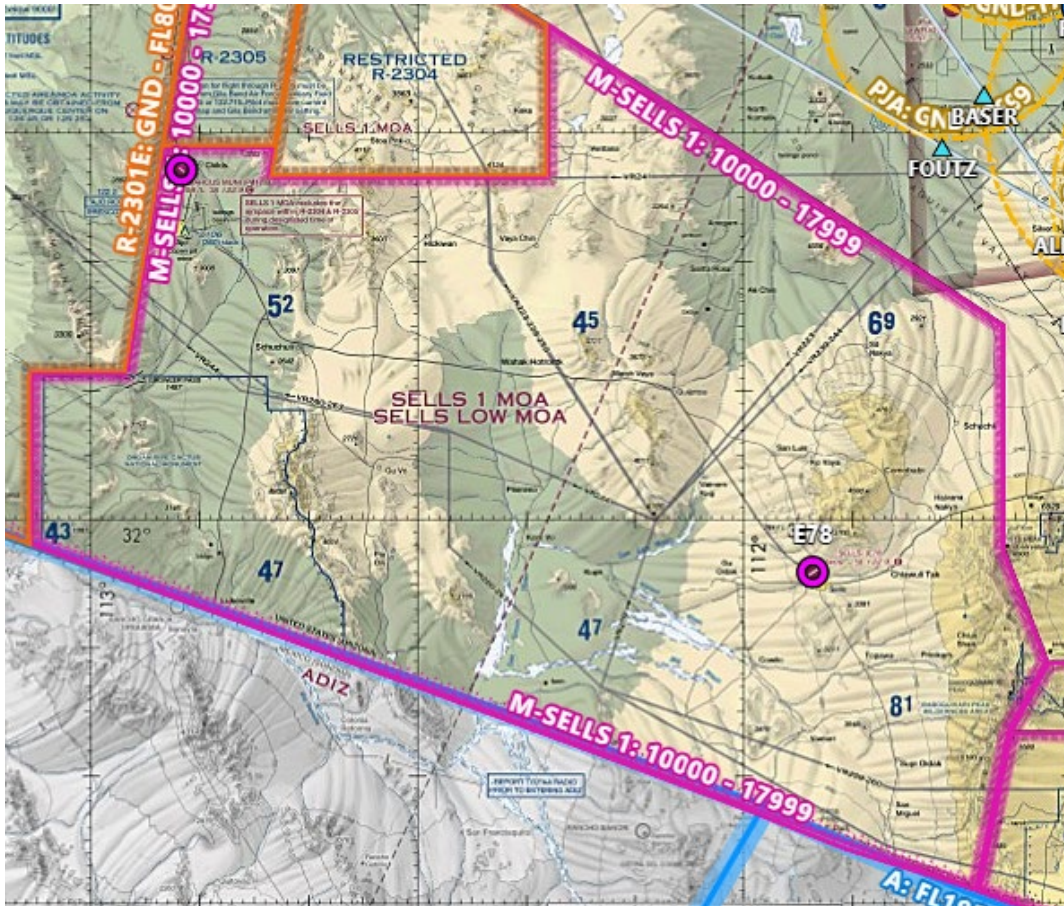
**Military Training Routes (MTRs):** Corridors in which military aircraft can operate faster than the maximum safe speed of 250 knots below 10,000 feet MSL.

- Low altitude navigation and tactical training are conducted at airspeeds in excess of 400 knots, normally 450-550 knots.
- Luke Aircraft typically fly them at 500-1000 feet AGL but can exceed 1,500 feet AGL depending on the route structure. Only routes with four-digit identifiers contain no segments above 1,500 feet AGL (i.e. IR1206, VR1207)
- Non-participating aircraft are not prohibited from flying through MTRs. However, extreme vigilance should be exercised when conducting flights through or near MTRs.
- Most MTRs are VR routes, on which military aircraft are operating VFR and therefore *not* under ATC control
- Only route centerlines are depicted on sectional charts. Corridors are typically 5-10nm wide but can be up to 20nm either side of centerline
- Prescott FSS may be able to provide information on real-time route activity



- Route Centerline
- Route Corridor

# Commonly Used SUA



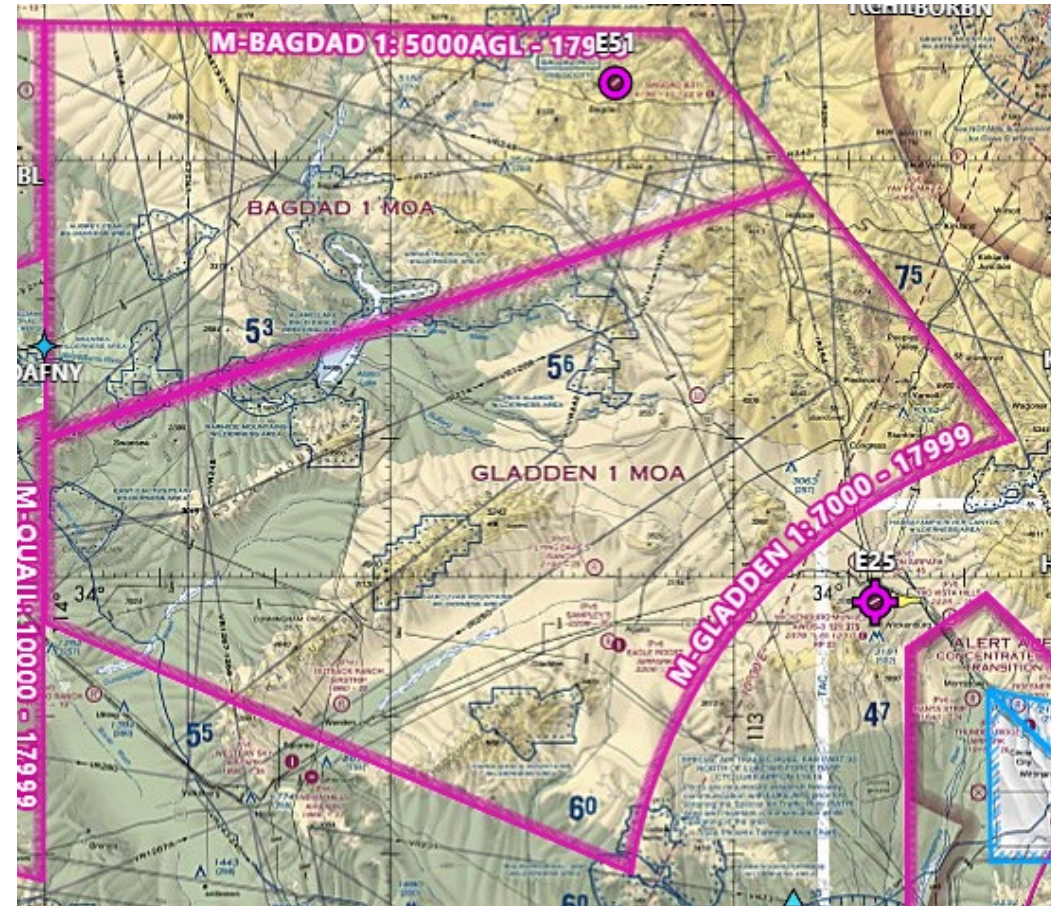
## Sells Low/1 MOAs

Active: 0600-1900L Mon-Fri, other times by NOTAM

Altitudes: 3,000' AGL – 17,999' MSL

*"Lights Out" operations authorized >10,000' MSL*

Contact ABQ CTR 126.45 for advisories



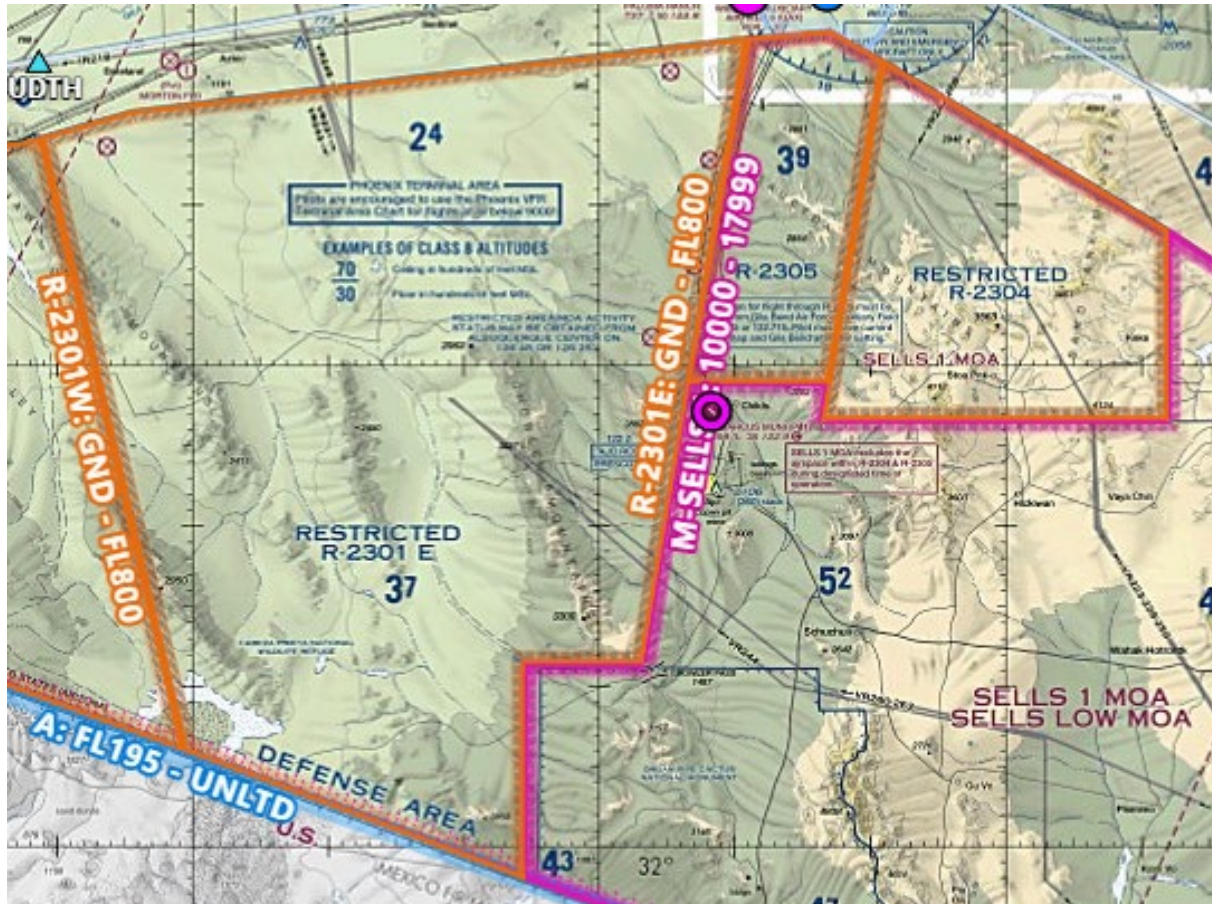
## Gladden/Bagdad MOAs

Active: 0600-1900L Mon-Fri, other times NOTAM

Altitudes: 7,000' MSL (5,000' AGL) – 17,999' MSL

Contact ABQ CTR 128.45 for advisories

# Commonly Used SUA



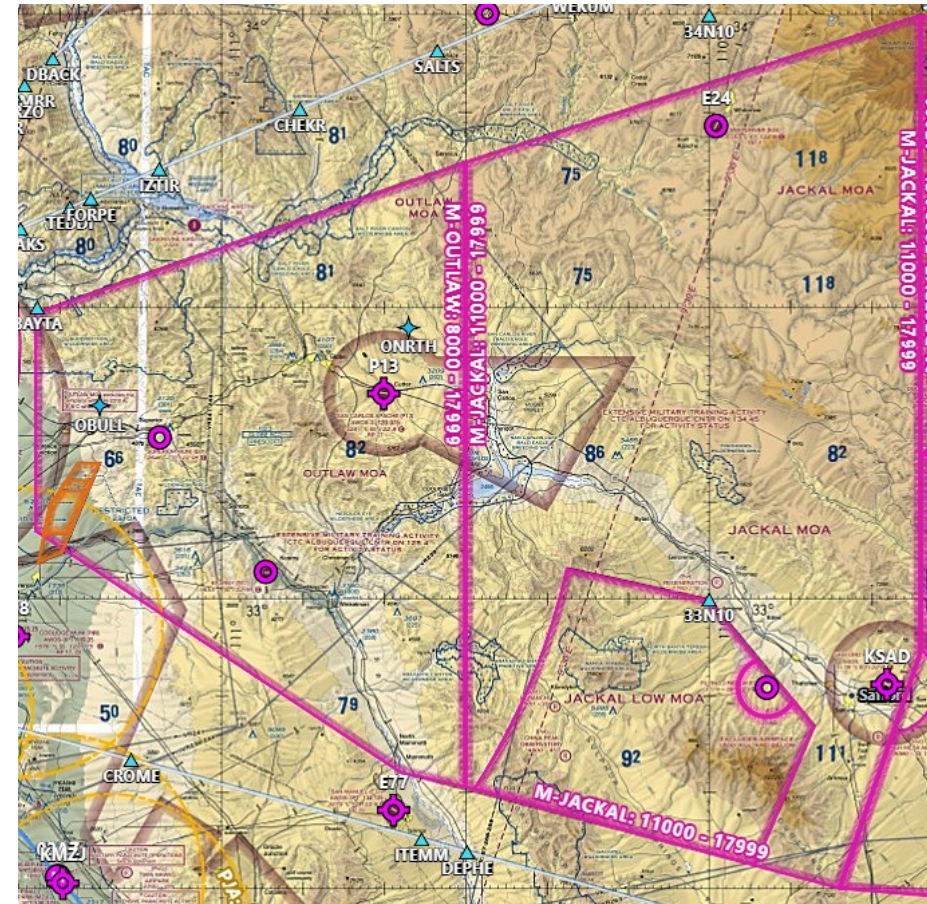
## R-2301E/2304/2305

Active: 0630-0000L Mon-Sat, other times by NOTAM

(2103E 0630-0000L Daily)

Altitudes: GND - ≥FL240

Contact ABQ CTR 126.45 or 125.25, KGXF Tower 127.75, or Snakeye 122.775 for Restricted Area Status



## Outlaw/Jackal MOAs

Active: 0700-1800L Mon-Fri, other times by NOTAM

Altitudes: 8,000' MSL – 17,999' MSL (Jackal Low floor 100' AGL)

Contact ABQ CTR 128.45 for advisories

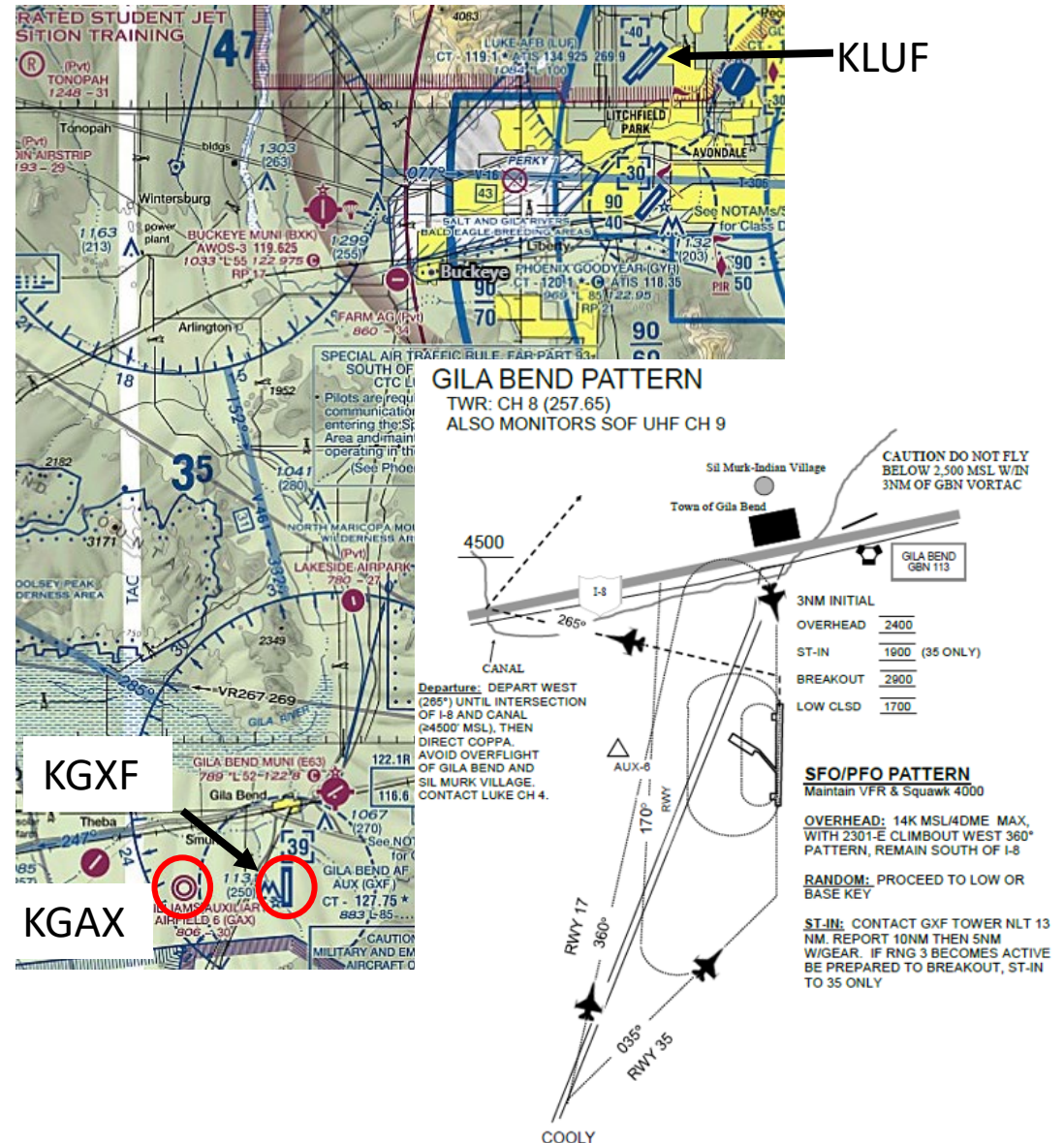
# KGXF and KGAX Operations

## Gila Bend Auxiliary Airfield (KGXF)

- 45nm southwest of Luke AFB, south of I-8 and Gila Bend Municipal Airport
- Utilized by F-16s and F-35s from Luke AFB as well as other military traffic from Yuma MCAS, Davis Monthan AFB and Tucson ANG
- Used to practice touch-and-go landings and simulated/precautionary flameout landings (SFOs/PFOs). SFO/PFO patterns start ~10,000' MSL overhead the field or from within Restricted Area.
- Military traffic should remain south of I-8 and climb above 4,000' MSL prior to turning north on their return to Luke AFB

## Williams Auxiliary Airfield 6 (KGAX)

- Helo operations and paradrops
- KGXF overflow traffic



# How to Prevent a Mid-Air Collision

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Ever landed and gotten out of your plane with your hands sweaty and body shaking because someone nearly took your wing off? If so, you're not alone. As aviation activity increases throughout the US, the possibility of having a near midair or actual collision increases. The FAA has instituted policies to alleviate the midair collision potential, but the ultimate responsibility lies with YOU! Below are several rules to live by... in order to make flying safer for all.

1. **PLAN AHEAD** - Thoroughly plan and review your intended route of flight before walking to your aircraft. If possible, plan to avoid alert areas, MTRs, and MOAs. Check NOTAMs and identify potential conflict areas.
2. **SEE AND AVOID** - Scan the airspace ahead of your flight path and to the side using a disciplined scan pattern. Also, periodically check behind you since the majority of mid-air collisions occur when one aircraft overtakes another.
3. **CLEAR** - Before executing a climb, turn, descent, or any other maneuver, ensure the area is clear!
4. **COMMUNICATE** - When flying into or out of uncontrolled airports, broadcast your position and intentions. Request and use all available RADAR services whenever possible. Finally, don't relax your visual scan even in a RADAR environment.
5. **SQUAWK** - If your aircraft is transponder equipped, turn it on and reply on both Mode 3/A and C. While some military aircraft have ADSB-in capability, no Luke AFB aircraft have the capability to transmit ADSB-out, making ATC point-outs crucial to see and avoid operations.
6. **BE SEEN** - In order to enhance the see and avoid concept, you are encouraged to turn on your anti-collision lights and/or other appropriate lights whenever the engine is running. You're further encouraged to turn on your landing light (within POH recommendations) when operating below 10,000' MSL, day or night, but especially within 10 miles of an airport or in areas of reduced visibility.

**PROFILE OF A MIDAIR** A three-year study of midair collisions involving civilian aircraft by the NTSB determined the following:

1. The occupants of most mid-air collisions were on a pleasure flight with no filed flight plan.
2. Nearly all midair collisions occurred in VFR conditions during weekend daylight hours.
3. The majority of mid-air collisions were the result of a faster aircraft overtaking a slower aircraft.
4. NO ONE is immune. Experience levels ranged from initial solo to the 15,000-hour veteran.



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