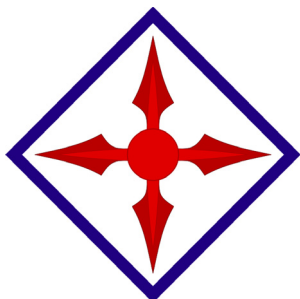


# MID-AIR COLLISION AVOIDANCE AND FLIGHT OPERATIONS

## Little Rock Air Force Base & Camp Robinson



\*\*\*WARNING\*\*\*

THE ENCLOSED MATERIAL IS FOR  
INFORMATIONAL PURPOSES ONLY! IT IS NOT  
TO BE USED IN FLIGHT PLANNING OR AS A  
SUBSTITUTE FOR ANY REGULATORY GUIDANCE,  
CHARTS OR SUPPLEMENTS. ALL INFORMATION,  
DESCRIPTIONS, ROUTES, AND PROCEDURES ARE  
SUBJECT TO CHANGE WITHOUT NOTICE.

The United States Air Force accepts no liability or any claim arising under  
or as a result of reliance upon this handbook and reserves protection from  
liability as afforded under the Federal Tort Claims Act, 28 U.S.C. § 2680.

\*\*\*WARNING\*\*\*

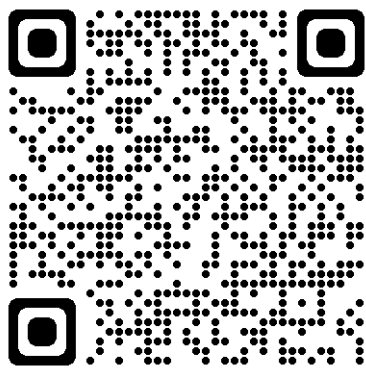
LITTLE ROCK AIR FORCE BASE MID-AIR COLLISION AVOIDANCE PROGRAM  
REVISED: 28 APRIL 2022

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Below is a link to the Little Rock AFB Safety Website (Public).  
Additional MACA Materials and information is available by  
scanning the link or by going to:

<https://www.littlerock.af.mil/helpingagencies/safetyoffice/>.



# Introduction

Mid-Air Collision Avoidance (MACA) is a very important topic within military and civilian aviation. The United States Air Force is committed to working with the civilian aviation community to keep our shared airspace safe. As a part of our continuing public information program, the 19th Airlift Wing (19 AW) produced this pamphlet in cooperation with the 314th Airlift Wing (314 AW) the 189th Airlift Wing (189 AW), the 913th Airlift Group (913 AG), and the 77th Theater Aviation Brigade to educate our civilian counterparts on the intensive military training air operations around Little Rock Air Force Base. Our goal is to heighten awareness and reduce the potential for mid-air collisions.

Since military missions are somewhat structured, there are certain places where you can expect to see us conducting our daily operations. Although the areas discussed are not all inclusive, the following information should give you a good idea of how and where we operate. Included within this pamphlet is information on locally-based and transient aircraft, training routes, traffic patterns, and arrival and departure routes.

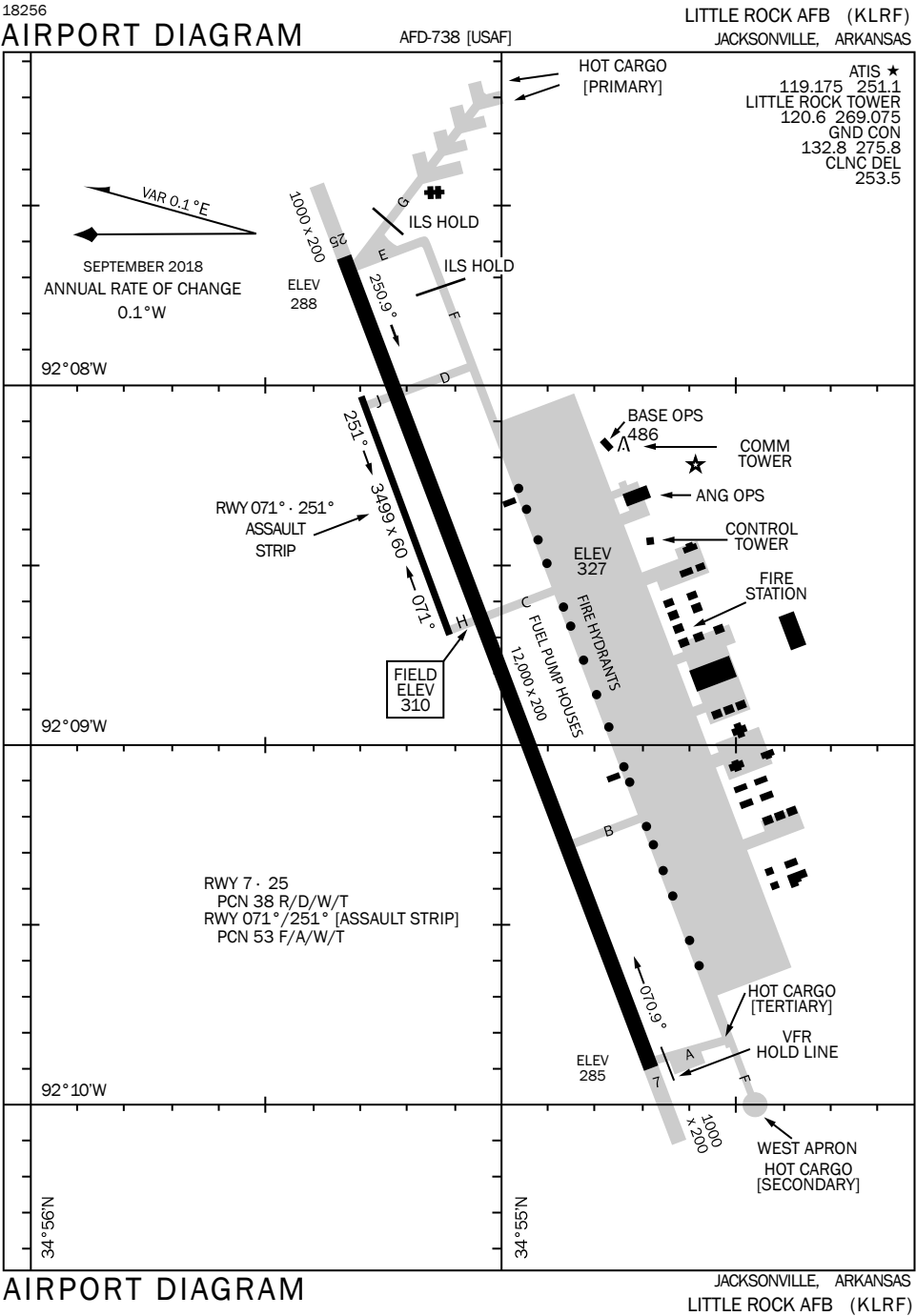
The 19 AW Safety Office is the office of primary responsibility (OPR) for the development, publishing, and maintenance of the Little Rock Air Force Base MACA program pamphlet. If you have any questions concerning any information within this pamphlet, or you would like a copy, please contact the 19 AW Flight Safety Office at (501)987-5772. An electronic copy of this document is also available on the Little Rock Air Force Base Homepage at <https://www.littlerock.af.mil/helpingagencies/safetyoffice/>

We hope this guide proves useful in avoiding areas of congestion, determining the best routes of flight, and minimizing potential conflicts. We solicit your help in making the skies over Arkansas a safer place to fly. Thank you for your interest and vigilance!

# Little Rock Air Force Base Information

<b>Operating Hours:</b>	Mon-Fri 1200-0500Z++; Sat-Sun 1500-2300Z++ excluding holidays. Extensive NVD (Night Vision Device) operations during periods of darkness. Exception by NOTAM.
<b>Location:</b>	Coordinates: 34°55.05'N 92°08.70'W Elevation: 311 ft. / 94.8 m (surveyed) Variation: 01E (2010) From city: 1 mile SE of JACKSONVILLE, AR Time zone: UTC -6 (UTC -5 during Daylight Savings Time)
<b>Nav aids:</b>	Jacksonville (LRF) TACAN (CH29) ILS 25 (109.9)
<b>Instrument Approaches:</b>	There are several published approaches for KLRAF. ILS or LOC, TACAN, ARA, RNAV (GPS) - Runway 25 (Primary Runway) TACAN, ARA -Runway 07
<b>Airfield Lighting:</b>	Rotating Beacon (1 Green, 2 White)
<b>Runway Lighting:</b>	Standard HIRL for 07/25. MIRL for assault strip. Threshold Lights, Distance Remaining Markers on main runway.
<b>Approach Lighting:</b>	Cat I ALSF with sequenced flashing lights for 07/25
<b>Frequencies:</b>	Air Traffic Control .....120.6/269.075 Approach Control .....119.5/306.2 ATIS .....119.175/251.1 Blackjack DZ .....139.6/342.4 All-American LZ/DZ .....141.8/342.3
<b>Phone Numbers:</b>	19th AW Airspace Manager..... (501) 987-5159 19th AW Flight Safety Office ..... (501) 987-5772 Airfield Ops Flight Commander ..... (501) 987-3104 Little Rock Appr Control - Primary ..... (501) 379-2905 Little Rock AFB Tower..... (501) 987-3139 Airfield Management Operations ..... (501) 987-6123 Airfield Manager ..... (501) 987-3103 Lockheed Martin FSS (Jonesboro) ..... (800)992-7433

# KLRF Airport Diagram



# Camp Robinson Information

**Operating Hours:** Mon & Fri 1300-2300Z++; Tues-Thur & Sat-Sun 1400-2100Z++ excluding holidays. Extensive NVG (Night Vision Goggle) operations during periods of darkness. Exception by NOTAM.

**Location:** Coordinates: 34°50.82'N 92°18.01'W  
Elevation: 587 ft. / 179 m (estimated)  
From city: 5 mile NW of central business district of LITTLE ROCK, AR  
Time zone: UTC -6 (UTC -5 during Daylight Savings Time)

**Nav aids:** Little Rock (LIT) VORTAC (113.9)

**Instrument Approaches:** None

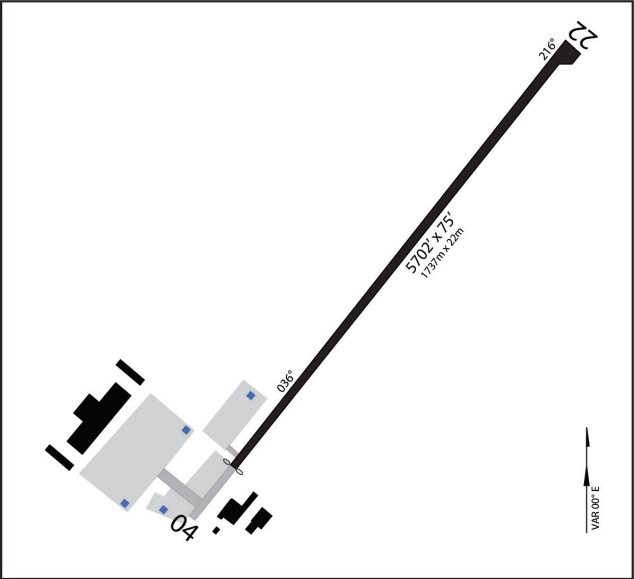
**Airfield Lighting:** Rotating Beacon (1 Green, 2 White)

**Runway Lighting:** MIRL

**Approach Lighting:** None

**Frequencies:** Traffic Advisory.....123.075/227.0

KRBM: ROBINSON ARMY AIRFIELD/NG  
CAMP ROBINSON/LITTLE ROCK, ARKANSAS UNITED STATES



# Local Aircraft, Description, and Mission

## C-130

The C-130H and the newest version, the C-130J are flown at Little Rock AFB. The C-130, produced by the Lockheed Martin Corporation, is a long range, multi-purpose cargo aircraft that provides tactical airlift operations on a global basis. Depending on the model, it is capable of carrying 92 or 128 ground troops, 64 or 92 paratroopers, and 73 or 97 litters for aeromedical evacuation, and can also be configured to carry rolling or palletized cargo. This cargo can then be off loaded on the ground or airdropped, as mission requirements dictate. The C-130 is also capable of operating on short runways and dirt airstrips.

### PERFORMANCE/SPECIFICATIONS

	H MODEL	J MODEL
MAX LANDING/TAKEOFF WEIGHT	155,000 lbs.	164,000 lbs.
CRUISE SPEED	280-300 KTAS	320 KTAS
LOW-LEVEL AIRSPEED	200-230 KIAS	210-250 KIAS
APPROACH SPEEDS	110-160 KIAS	105-160 KIAS
DEPARTURE SPEEDS	160-180 KIAS	160-180 KIAS
MIN RUNWAY REQ'D (for training)	3,000 ft.	3,000 ft.
WING SPAN	132 ft. 7 in.	132 ft. 7 in.
LENGTH	99 ft. 6 in.	112 ft. 9 in.
HEIGHT	38 ft. 6 in.	38 ft. 9 in.



C-130H

### C-130H HERCULES

Four Bladed Propellers  
Wing Tanks



C-130J

### C-130J-30 SUPER HERCULES

Six Bladed Propellers  
No Wing Tanks  
15 ft. Longer (Stretch model)

## UH-60 AND UH-72

Both the UH-60 Blackhawk and the UH-72 Lakota are flown at Camp Robinson. The UH-60 Blackhawk, produced by Sikorsky Aircraft, is a twin engine, medium-lift utility helicopter. Although it comes in many special purpose variants, the UH-60 performs a wide array of missions, including transport of troops, air assault operations, and medical evacuations. The UH-72 Lakota, produced by Eurocopter, is a twin engine light utility helicopter designed for general support, medical evacuation, and personnel recovery.

### PERFORMANCE/SPECIFICATIONS

	UH-60 BLACKHAWK	UH-72 LAKOTA
MAX LANDING/TAKEOFF WEIGHT	22,00 lbs.	7,900 lbs
CRUISE SPEED	150 KTAS	133 KTAS
LOW-LEVEL AIRSPEED	150 KIAS	120 KIAS
APPROACH SPEEDS	10-110 KIAS	10-100 KIAS
DEPARTURE SPEEDS	10-150 KIAS	10-130 KIAS
MIN RUNWAY REQ'D (for training)	0 ft.	0 ft.
WING SPAN	53 ft. 8 in.	36 ft. 1 in.
LENGTH	64 ft. 10 in.	42 ft. 7 in.
HEIGHT	16 ft. 10 in.	11 ft. 9 in.



**UH-60 Blackhawk**



**UH-72 Lakota**



## C-26E

The C-26 Metroliner is also operated out of Camp Robinson. The Metroliner, produced by Fairchild Swearingen Aircraft, is a pressurized twin turboprop airplane. The C-26 provides priority air transportation of DOD personnel, equipment, supplies, and general support throughout the United States and neighboring countries. The aircraft is typically configured to support 12 passengers, but seating can be removed to support large cargo operations.

### PERFORMANCE/SPECIFICATIONS

MAX WEIGHT	LANDING/TAKEOFF	16,500 lbs.
CRUISE SPEED		250 KTAS
LOW-LEVEL AIRSPEED		200 KIAS
APPROACH SPEEDS		130-140 KIAS
DEPARTURE SPEEDS		150 KIAS
MIN RUNWAY REQ'D (for training)		4,000 ft.
WING SPAN		57 ft.
LENGTH		59 ft. 5 in.
HEIGHT		16 ft. 6 in.

### NOTE

The C-26 is an extremely capable performer in Instrument Meteorological Conditions (IMC). However, due to limited cockpit visibility it is difficult for aircrews to locate/identify other air traffic visually.



# Transient Aircraft Frequently Seen in the Camp Robinson/Little Rock AFB Training



**T-1A Jayhawk**



**T-6 Texan II**



**T-44A Pegasus**



**T-38C Talon**



**A-10 Thunderbolt II**



**F-16 Falcon**



**F-18 Hornet**



**F-15 Eagle**



**KC-10 Extender**



**KC-135 Stratotanker**



**C-17 Globemaster III**



**C-5 Galaxy**

## OUR MISSION

The 19 AW is composed of two Air Mobility Command (AMC) active duty C-130 squadrons. The 314 AW is composed of two Air Education and Training Command (AETC) squadrons. The 189 AW, an AETC-gained Air National Guard (ANG) unit, along with the 314 AW, trains U.S. Department of Defense C-130 aircrews and members of over 27 allied nations (in addition to their Arkansas state defense mission) with their C-130 flying squadron. The 913 AG is composed of one USAF Reserve Command (AFRC) flying squadron. Little Rock Air Force Base is also host to the Air Force's C-130 Weapons Instructor Course (WIC). The WIC squadron also trains within Arkansas' airspace. Little Rock Air Force Base units train deployable and student aircrews to be the best C-130 aircrews in the world. The training is primarily conducted in the skies over Arkansas when they are not away providing airlift to the warfighter and humanitarian support around the world.

The 77 TAB, an Army National Guard unit, trains U.S. Department of Defense Active Duty and National Guard UH-60 and UH-72 aircrew. This student training complements the operational Arkansas state defense, aeromedical evacuation, and aerial firefighting missions with their fleet of UH-60 and UH-72 helicopters.

## C-130 STUDENT TRAINING

### QUALIFICATION TRAINING

Qualification Training is the first course students attend at the base. This training consists of high-level navigation, utilizing high altitude jet routes, and transition training, or practicing instrument and visual approaches, usually conducted at local airfields. Some of these airfields include, but are not limited to: Ft. Smith Regional, AR; Springfield, MO; NW Arkansas Regional, AR; Jackson, MS; Greenville, MS; Alexandria, LA; Greg County, TX; and Adams Field in Little Rock, AR.

### MISSION TRAINING

Mission Training is the next step. This is the tactical phase, which includes flying single ship or formations on low-level routes to a drop zone or landing zone. **Formations usually consist of two to four aircraft and occasionally 12 or more.** In mission training, single aircraft or formations fly low-level routes at 300-500' AGL during the day and 1000-3000' MSL at night for VFR routes. Formation training is also completed during Instrument Flight Conditions, flying at 6,000' - 17,000' MSL before descending to the drop zone.

## DROP ZONES

Little Rock Air Force Base uses two local drop and landing zones; All American Drop/Landing Zone and Blackjack Drop Zone. These areas are used up to 20 hours a day, 7 days a week. To check their status and activity check Little Rock Air Force Base NOTAMS with the FSS.

### ALL AMERICAN

Located on Camp Robinson inside R-2403, on the LIT 337/15. It has a drop zone as well as a 3,700' x 60' asphalt landing zone for short field take-off and landings.

### BLACKJACK DROP ZONE

Located on the LIT 009/33, just south of Romance, Arkansas, 2 miles east of Hwy 5.

Both areas are depicted on the Arkansas Aeronautical Chart and information can be found in the Airport Facility Directory for the South Central United States.

### DROP ZONE OPERATIONS

Most airdrops occur at 300' - 1,200' AGL, although we have some being conducted at 7,000' MSL. The most common airdropped items are fifteen pound sandbags, 1,000 lbs. boxes, and 3,000 lbs. simulated heavy equipment pallets. However, actual personnel and equipment are also dropped.

***NOTE: Some aircraft and crews are certified to drop in IFR conditions, in or above the clouds, without visual reference with the ground. We issue NOTAMS prior to any IFR airdrops, so be sure to check with FSS for the latest information.***

Tactical missions are based on crews successfully avoiding hostile threats as they fly their low-level route to the Initial Point (IP), the point immediately prior to the objective. The run-in from the IP to the objective for an airdrop or assault landing is most critical to the mission. This period is the busiest part of the entire mission for each crewmember. The crew is focused on stabilizing the aircraft on drop/landing heading, altitude, and airspeed, evaluating drop winds, talking to drop zone controllers, and visually acquiring the objective. **Heavy tasking during this critical phase of flight greatly increases the possibility that crews may not see small aircraft transiting the area.**

***NOTE: In the interest of air safety, we ask all pilots to exercise extreme caution when flying near All American or Blackjack Drop Zones, especially on each drop zones' east and west approach corridor.***





**RANGE 2401 (R-2401)**

Little Rock AFB aircraft also consistently utilize R-2401, located SE of Fort Smith Regional Airport (KFSM), to conduct various training. Additional information on R-2401 can be found in the AP1A Area Planning Supplement. A typical flight may have C-130 aircraft arriving IFR to the area while in communication with Memphis Center (126.1) and Razorback Approach (120.9). Aircraft could descend from 12,000 ft along the SE border of R-2401 before entry from the South. While in R-2401, aircraft train (Drop Zone/Landing Zone) under Range Control while monitoring Razorback Approach. Upon exit of R-2401, aircraft will be IFR or VFR with

**Little Rock Air Force Base Class D Airspace**



**LITTLE ROCK AFB CLASS D AIRSPACE**

Airspace from the surface up to and including 2800' MSL within a 5.6 NM radius of Little Rock AFB (published as 34 55 01 N & 92 08 79 W) is Little Rock AFB Class D Airspace. Unless otherwise authorized by Air Traffic Control, an operable two-way radio is required. Two-way radio communication must be established with Little Rock AFB Tower (120.6)

W). Unless otherwise authorized by Air Traffic Control, an operable two-way radio is required. Two-way radio communication must be established with Little Rock Air Force Base Tower, on 120.6, prior to entry and thereafter, maintaining communications while in the Class D airspace. Radio contact should be initiated far enough from the Class D airspace boundary to preclude entering Class D airspace before two-way radio communications are established. Aircraft following Hwy 67/167 will fly through the Class D airspace and cross the base's final approach course. Aircraft in the pattern at North Little Rock must be aware that the airport is 2 miles outside of the Class D.

## **SURROUNDING AIRSPACE**

The airspace within a 20 NM semi-circle North of Little Rock Air Force Base from 500 AGL to 3000 MSL is used extensively and normally has high concentrations of aircraft.

***NOTE: This airspace has greater potential for mid-air collision with Little Rock Air Force Base C-130s than any other area in the state!***

This airspace includes the radar pattern, departure and arrival routing for VFR/IFR low-level routes, two drop zones, and local civilian fields. **Two-way radio communication with Little Rock Approach Control in this area is advised to ensure safe aircraft separation.**

Airfields in close proximity to the base and the drop zones are: **Conway, Searcy, North Little Rock, and various private fields.** Pilots are urged to review with their students the importance of situational awareness and “see and avoid” techniques.

# Departures and Arrivals

## **Runway 25 is the Primary Runway at Little Rock Air Force Base**

### **IFR DEPARTURES**

Most of the aircraft departing Little Rock Air Force Base climb to 3,000' MSL southwest of the airfield prior to accepting radar vectors to enter the enroute structure, or turn north to cancel IFR north of Conway to enter the north and north east low-level routes.

### **IFR ARRIVALS**

Transitions from the drop zones to Little Rock Air Force Base are flown at 3,000' MSL under radar contact and descend to 2,000' MSL on final with in 25 NM of the base. Other IFR arrivals are completed under radar control.

### **VFR DEPARTURES**

C-130s will depart "VFR to the West" at or below 2,500' MSL toward Pinnacle Mountain to enter the southern low-level routes. At times aircraft may fly the IFR departure ground track to the BENIT entry point north of Conway under VFR at 1,000' AGL.

### **VFR ARRIVALS**

Downwind and Overhead recoveries from the drop zones are flown between 1,400' - 1,900' MSL. Overhead ground track is flown to a 13 NM extended final. The downwind ground track has an orbit point northeast of Lake Conway for pattern sequencing as required.

### **PATTERN ALTITUDES**

The overhead pattern altitude is 1,900' MSL and the VFR pattern altitude is 1,400' MSL

### **PENETRATION DESCENTS**

Flown in VMC conditions from 13,500' MSL from 15 NM northeast of Little Rock Air Force Base to a 14 NM final. Flown at 250 KIAS approximately 6° nose low to a high speed low altitude straight in.

### **KRBM STUDENT TRAINING INFORMATION**

- Day/Night/Night Vision Goggle (NVG)/Instrument Training for new pilots and crewmembers.



- Mission Qualification Training
  - Hoist
  - Multiship
  - Air Assault Ops
  - FRIES
  - Rappel
  - HALO/Static Line Paradrop
  - Sling Load Ops
  - Water Bucket Fire Fighting Ops
  - Door Gunnery Operations
- Altitude in training area - 1000' AGL and below, 200' AGL and below when All American Drop Zone is active. Aircraft may operate at higher altitudes at other times if required by missions or training.
- All rotary wing aircraft operating on Camp Robinson monitor (at a minimum) All American VHF frequency when AA is in use. and always UHF 227.0.



# Military Training Routes (MTRs)

## **MTR PROGRAM**

The MTR program is a joint venture by the FAA and the Department of Defense (DoD). MTRs are mutually developed for use by the military for the purpose of conducting low-altitude, high-speed training. The routes above 1,500' AGL are developed to be flown, to the maximum extent possible, under IFR. The routes at 1,500' AGL and below are generally developed to be flown under VFR.

## **MTR TYPES**

Generally, MTRs are established below 10,000' MSL for operations at speeds in excess of 250 knots. The IFR and VFR routes are as follows:

- IFR Military Training Routes (IR).
  - Operations on these routes are conducted in accordance with IFR regardless of weather conditions.
- VFR Military Training Routes (VR).
  - Operations on these routes are conducted in accordance with VFR except flight visibility shall be 5 miles or more; and flights shall not be conducted below a ceiling of less than 3,000' AGL.
- Slow Routes (SR)
  - Slow Speed Military Route (SR) operations are similar to VR routes except weather is 1500 and 3 and the maximum speed is 250 knots.

## **IFR LOW ALTITUDE ENROUTE CHARTS**

The IFR Low Altitude Enroute Charts will depict all IR routes and all VR routes that accommodate operations above 1,500' AGL. VFR Sectionals will depict military training activities such as IR, VR, MOA, Restricted Area, Warning Area and Alert Area information. Area Planning (AP/1B) Chart (DoD Flight Information Publication-FLIP) is published by the DoD primarily for military users and contains detailed information on both IR and VR routes.

**This publication is available to the general public by single copy or annual subscription from:**

Aeronautical Navigation Products (AeroNav) Logistics Group  
Federal Aviation Administration  
10201 Good Luck Road  
Glenn Dale, MD 20769-9700  
Toll free phone: 1(800) 638-8972 / Commercial: (301) 436-8301

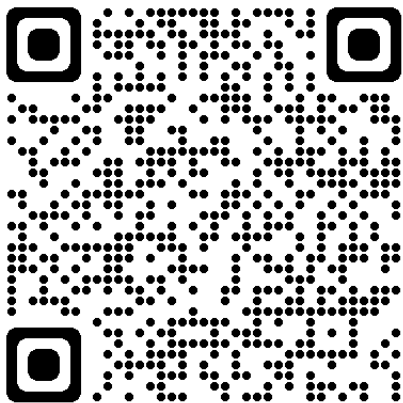
## NONPARTICIPATING AIRCRAFT

Nonparticipating aircraft are not prohibited from flying within an MTR; however, **extreme vigilance should be exercised when conducting flight through or near these routes.** Pilots should contact FSSs within 100 NM of a particular MTR to obtain current information or route usage in their vicinity. Information available includes times of scheduled activity, altitudes in use on each route segment, and actual route width. Route width varies for each MTR and can extend several miles on either side of the charted MTR centerline. Route width information for IR and VR MTRs is also available in the FLIP AP/1B along with additional MTR (slow routes/air refueling routes) information. When requesting MTR information, pilots should give the FSS their position, route or flight and destination in order to reduce frequency congestion and permit the FSS specialist to identify the MTR which could be a factor.

## NON-MTR SLOW ROUTES (SR)

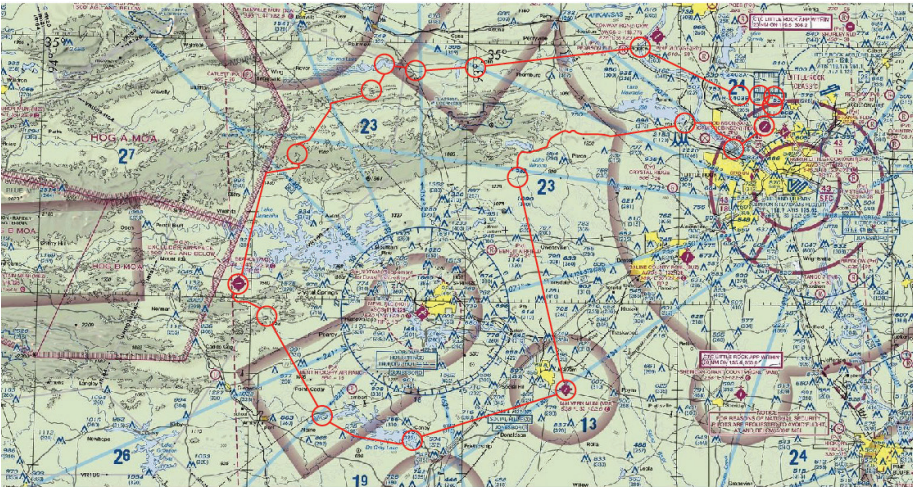
Little Rock Air Force Base C-130s routinely use SR Routes which are not part of the MTR system. SR are low-level routes flown at speeds under 250 KIAS. These routes are not identified on enroute charts, but can be found on the Arkansas Aeronautical Chart. **C-130s from Little Rock Air Force Base use over 15 SR's within Arkansas for daily training.** Normally these routes are flown at 300-500' AGL during the day except around environmental or noise sensitive areas where the altitudes are increased. To view more comprehensive depictions of the many routes flown by our aircraft, please go to the website below.

<https://www.littlerock.af.mil/helpingagencies/safetyoffice/>.

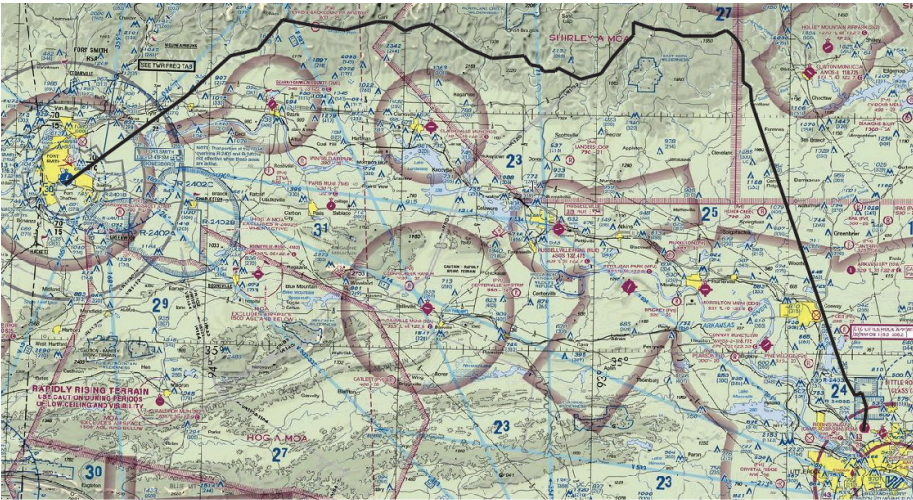




**SOUTHWEST ROTARY WING LOW LEVEL ROUTE (150-200 FT. AGL)**

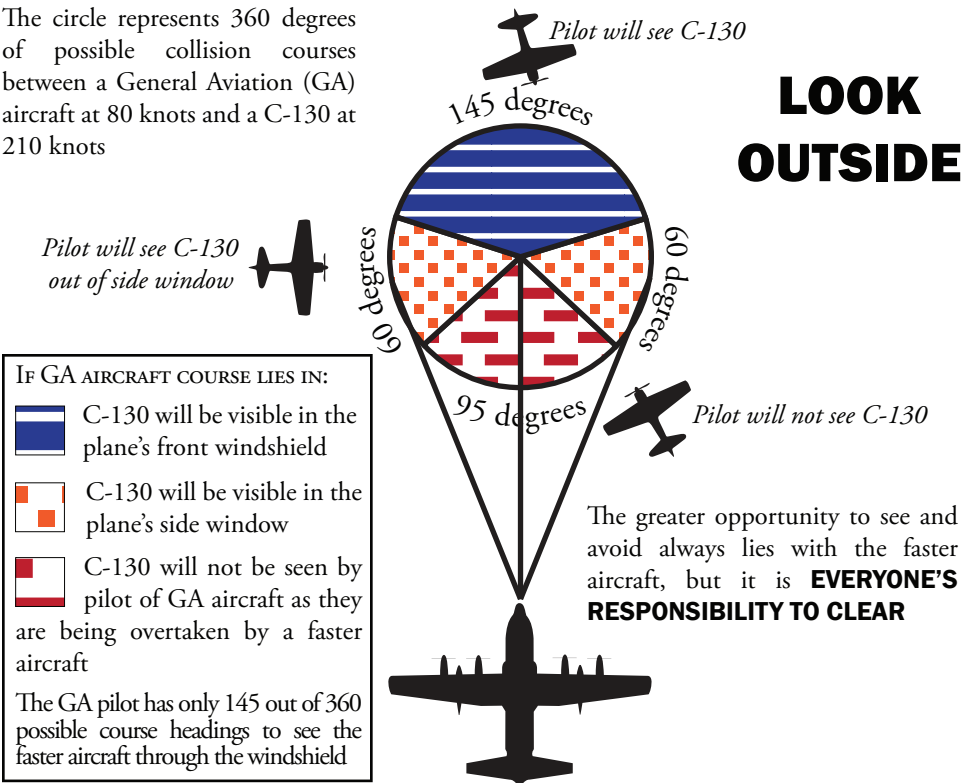


**NORTHWEST ROTARY WING LOW LEVEL ROUTE (150-200 FT. AGL)**



# Geometry of a Mid-Air Collision

The circle represents 360 degrees of possible collision courses between a General Aviation (GA) aircraft at 80 knots and a C-130 at 210 knots



Rate of Closure  
300 / 150 KIAS

5 Miles	60	120	
2.5 Miles	30	60	
1.5 Miles	18	36	
1 Miles	12	24	
1/2 Miles	6	12	
1/4 Miles	3	6	

In this area you are near the limit of pilot and flight control reaction time. Your safety depends on a quick reaction time.

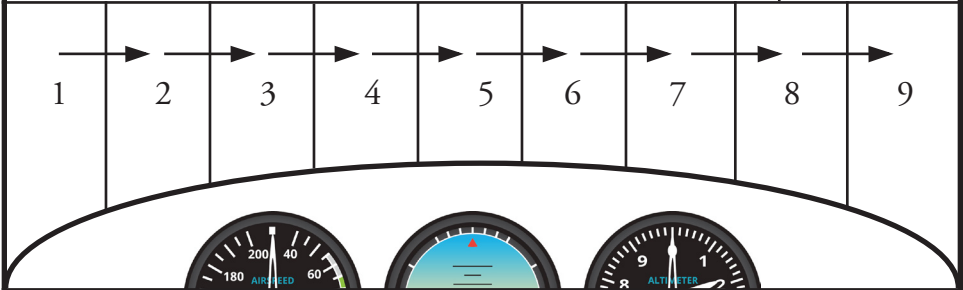


Aftermath of a midair during approach at Plant City, FL on 12/11/99

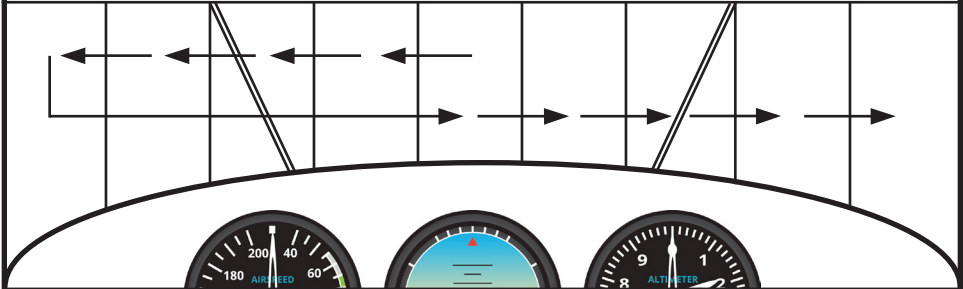


# Average Recognition & Reaction Time (Seconds)

SEE OBJECT	0.1
RECOGNIZE AIRCRAFT	1.0
BECOME AWARE OF COLLISION	5.0
DECISION TO TURN LEFT OR RIGHT	4.0
MUSCULAR REACTION	0.4
AIRCRAFT LAG TIME	2.0
TOTAL	12.5



*Side-to-side scanning method. Start at the far left of your visual area and make a methodical sweep to the right, pausing in each block of viewing area to focus your eyes. At the end of the scan, return to the panel.*



*Front-to-side scanning method. Start in the center block of your visual field (center of front windshield); move to the left, focusing on each block, then swing quickly back to the center block after reaching the last block on the left and repeat the performance to the right.*

# MID-AIR COLLISION

## AVOIDANCE FUNDAMENTALS

1. Whether flying under IFR or VFR, practice the “see and avoid” concept at all times.
2. Under IFR control, do not count on ATC to keep you away from other aircraft. IFR separation only exists between you and other IFR aircraft. There may be VFR aircraft operating in your environment that ATC is unaware of.
3. Be familiar with the limitations of your eyes and use proper scanning techniques. Remember, if another aircraft appears to have relative motion, but is increasing in size, then it is likely to be on a collision course with you.
4. Execute appropriate clearing procedures before all climbs, descents, turns, training maneuvers or aerobatics.
5. Be aware of the type of airspace in which you intend to operate and comply with the applicable rules.
6. If your aircraft is equipped with a transponder, turn it on and adjust it to reply on both Mode 3/A and Mode C (if installed). Paragraph 4-18 in the Airman’s Information Manual states: “In all cases, whether VFR or IFR, the transponder should be operating while airborne unless otherwise requested by ATC.”
7. Adhere to the necessary communication requirements.
8. Traffic advisories should be requested and used when available to assist the pilot’s own visual scanning; advisories in no way lessen the pilot’s obligation to the “see and avoid” concept.
9. If unable to initiate radio contact for traffic information, at least monitor the appropriate frequency.
10. Make frequent position reports along your routes and broadcast your position at uncontrolled airports.
11. Make your aircraft as visible as possible -- turn on exterior lights and landing lights below 10,000 MSL when operating within 10 miles of any airport, in conditions of reduced visibility, where any bird activity is expected, or when under special VFR clearance.
12. Know where high-density traffic areas are.



13. When flying at night, don't use white interior lights unless absolutely necessary. It takes your eyes a while to adjust to low light levels.
14. Fly VFR hemispheric altitudes.

## NEAR MID-AIR COLLISION REPORTING

### PURPOSE AND DATA USES

The primary purpose of the Near Mid-Air Collision (NMAC) Reporting Program is to provide information for use in enhancing the safety and efficiency of the National Airspace System. Data obtained from NMAC report are used by the FAA to improve the quality of FAA services to users and to develop programs, policies, and procedures aimed at the reduction of NMAC occurrences. All NMAC reports are thoroughly investigated by Flight Standards Facilities in coordination with Air Traffic Facilities. Data from these investigations are transmitted to FAA Headquarters in Washington, DC, where they are compiled and analyzed. This process leads to the development of safety programs and recommendations.

### DEFINITION

An NMAC is defined as an incident associated with an aircraft in which a possibility of collision exists as a result of proximity of **less than 500** feet to another aircraft, or a report is received from a pilot or a flight crew member stating a collision hazard existed between two or more aircraft.

### REPORTING RESPONSIBILITY

It is the responsibility of the pilot and/or flight crew to determine whether an NMAC did actually occur and, if so, to initiate a n NMAC report. Be specific, as ATC will not interpret a casual remark to mean that a NMAC is being reported. The pilot should state: "I wish to report a near mid-air collision."

### WHERE TO FILE REPORTS

Pilots and/or flight crew members involved in NMAC occurrences are urged to report each incident immediately by one of the following means:

1. By radio or telephone to the nearest FAA ATC facility or FSS
2. In writing to the nearest Flight Standards District Office (FSDO).

### ITEMS TO BE REPORTED

1. Date and time (UTC) of incident

2. Location of incednet and altitude.
3. Identification and type of reporting aircraft, aircrew destination, name and home base of pilot.
4. Identification and type of other aircraft, aircrew destination, name and home base of pilot.
5. Type of flight plans; station altimeter setting used.
6. Detailed weather conditions at altitude or flight level.
7. Approximate courses of both aircraft; indicate if one or both aircraft were climbing or descending.
8. Reported separation in distance at first sighting, proximity at closest point horizontally and vertically, and length of time in sight prior to evasive action.
9. Degree of evasive action taken, if any from both aircraft if possible.
10. Injuries, if any.

# MACA Additional Resources

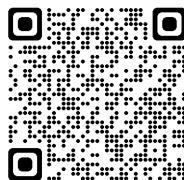
## **FAA SAFETY TEAM**

If you are interested in learning more about aviation safety and take a role in ensuring our skies are safer for everyone, consider going to the FAA Safety Team website to learn what you can do to help. <https://www.faa.safety.gov/>



## **AOPA**

AOPA is the largest, most influential aviation association in the world. This organization provides member services that range from representation at the federal, state, and local levels to legal services, advice and other services. <https://www.aopa.org/>



## **AOPA AIR SAFETY**

<https://www.aopa.org/training-and-safety/air-safety-institute>

## **FAA SPECIAL USE AIRSPACE**

<https://sua.faa.gov/sua/siteFrame.app>

## **USAF AVIAN HAZARD ADVISORY SYSTEM**

<https://www.usahas.com/>

## **FAA NOTAMS**

<https://notams.aim.faa.gov/notamSearch/nsapp.html#/>

## **VIRTUAL BASE OPERATIONS**

<https://www.baseops.net/>

## **ARKANSAS FLIGHT SAFETY COOPERATIVE**

<http://arflightsafety.com/>

# PROFILE OF A MID-AIR COLLISION

During a 3-year study of mid-air collisions involving civilian aircraft, the National Transportation Safety Board determined that:

- The occupants of most mid-air collisions were on a pleasure flight with no flight plan filed.
- Nearly all mid-air collisions occurred in VMC during daylight, weekend hours.
- The majority of mid-air collisions were the result of a faster aircraft overtaking and hitting a slower aircraft.
- No pilot is immune; experience levels in the study ranged from initial solo to 15,000 -hour veterans.
- The vast majority of mid-air collisions occurred at uncontrolled airports, below 3000' AGL.
- Most enroute mid-air collisions occurred below 8000' MSL, and within 25 miles of the departure or destination airport.
- In over one third of all mid-air collisions, flight instructors were onboard at least one of the aircraft.

