Mid-Air Collision Avoidance

Joint Base Elmendorf-Richardson

3 WG Flight Safety
April 2023

U.S. AIR FORCE

DEPARTMENT OF THE AIR FORCE
3 WG (PACAF)
JOINT BASE ELMENDORF-RICHARDSON, ALASKA

9 March 2023

MEMORANDUM FOR ALL ALASKAN AVIATORS

FROM: 3rd Wing Safety Office (3 WG/SE)

SUBJECT: Midair Collision Avoidance (MACA)

1. The remote environment and unique topography of Alaska drives a huge demand for aviation in all realms—recreational, commercial, transport, emergency services, and military. For any aviator, Alaska offers some of the most rewarding flying experiences of nearly anywhere on earth. It also presents a wide range of challenges—extreme climate, unforgiving terrain, wildlife hazards, and sparse infrastructure to name a few. Despite Alaska's vast size, airspace congestion is also a persistent challenge, particularly in the "Anchorage Bowl." In many areas around the U.S., military and civilian flight operations enjoy a certain degree of natural separation—not so in Alaska. Our goal is to improve airspace usage awareness among all pilots by openly sharing information between the military and civil aviation communities. By equipping pilots with relevant and current information, we can minimize the risk of mid-air collisions and safely share the Alaskan skies!

2. The attached pamphlet includes information on routine military operations flown in and around Joint-Base Elmendorf-Richardson (JBER)/Elmendorf Air Force Base (PAED). Though not an all-inclusive list, the pamphlet describes high-traffic areas and areas of prior close calls. Operations and training at JBER are conducted 24/7 and while we make every effort to avoid or deconflict popular established GA/VFR areas, we ask all pilots to be particularly mindful when operating around Big Lake, Goose Bay, Point MacKenzie, and Merrill Field.

3. Close cooperation and effective communication with the local general aviation community regarding the unique challenges of flying in the Anchorage Bowl has resulted in an outstanding aviation safety record. We always welcome your feedback! If you have any questions, suggestions, or concerns about flight safety in Alaska or would like to speak to our Flight Safety Officers, please contact the 3rd Wing Flight Safety Office at (907) 552-6858. We appreciate the opportunity to fly with you. Blue Skies!

NICHOLAS S. BURKE, Lt Col, USAF
Chief of Safety

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Updates:
Added Unmanned Aircraft Systems

THIS IS NOT A SOURCE DOCUMENT FOR FLIGHT OPERATIONS. ALL AIRCREWS ARE RESPONSIBLE FOR CHECKING CURRENT FLIGHT INFORMATION, PUBLICATIONS, DIRECTIVES, AND NOTAMS FOR CURRENT INFORMATION. CHARTS ARE NOT FOR NAVIGATION PURPOSES.

Mid-Air Collision Avoidance (MACA)

Why MACA?

Between 2013-2023 Elmendorf Flight Safety recorded 51 instances of Near Mid-Air Collisions, some between military aircraft and others between military and civilian traffic. Across the US, between 2011-2020, there were 1241 Near Mid-Air Collisions in the Critical or Potential Categories, with most aircraft closing to within 500 ft. The FAA was able to collect information on these NMACs through pilot reports which, in the past, have led to CTAF deconfliction and airspace adjustments. In the local area we can work together to highlight potential hotspots and avoid midair collisions and NMACs in the future.

Profile of a midair collision (NTSB)

- Most of the aircraft involved in collisions are engaged in recreational flying / not on any type of filed flight plan.
- 90% of midair collisions occur in VFR weather conditions with visibility greater than 3 miles
- Most accidents occurred at or near uncontrolled airports and at altitudes below 3,000' AGL.
- Pilots of all experience levels were involved in midair collisions; from pilots on first solo ride, to 20,000+ hours.
- Flight instructors were on board the aircraft during 37% of the accidents in the study.
- The majority were a result of a faster aircraft overtaking and hitting a slower aircraft

Our Role in Collision Avoidance

1. Plan Ahead. Review your intended route of flight prior to departure. Is there anything that can be done on the ground to reduce your workload in the air?
2. Task management. What needs to happen now? What can wait? How long will this keep your eyes inside the cockpit and heads down?
3. See and Avoid. Practice the see and avoid concept at all times regardless if flying VFR or in IMC using eyes/TCAS/call-outs.
4. Clear. Execute appropriate clearing techniques before climbs, descents, and other maneuvering. Consider the blind spots created by the design of your aircraft that may inhibit your line of sight during execution.
5. Be Seen. Have your lights on when practical and appropriate, fly as high as practical. Consider the contrast of your aircraft against its surroundings.
6. Communicate. Broadcast intentions frequently and when appropriate on CTAF.
7. Squawk. If you're equipped to, turn on and adjust your Mode 3/A and Mode C to enable TCAS indications.
8. Flight Following/IFR Flight Plans. Ask for flight following when available but don't forget that controllers can make mistakes, too!
9. Understand the limitations of your eyes. Studies show that on average, it takes up to 15 seconds to focus when clearing. Having a dirty windscreen is not going to improve those numbers.
10. AVOID COMPLACENY. No one is immune to a midair collision, by working together we can avoid it.

Near Mid-Air Collisions (NMAC)

A Near Mid-Air Collision is defined in the Aeronautical Information Manual (AIM): an incident associated with the operation of an aircraft in which a possibility of collision occurs 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 that a collision hazard existed between two or more aircraft.

U.S. Air Force AFMAN 91-223 defines a Near Mid-Air Collision: Aircrew took abrupt evasive action or would have taken such action if circumstance allowed, or another aircraft was within 500' or inside "well clear" and presented a hazard to flight safety.

How to Report It

If you have a NMAC, make an airborne report to the nearest air traffic control facility or flight service station as soon as possible and provide them with the following information:

- Your identification and call sign.
- Time and place (name of NAVAID, radial and distance) of the incident.
- Altitude or flight level.
- Description of the other aircraft.
- Advise the agency if you intend to file a written Near Mid-Air Collision Report and request that the controllers save all available data.

Anyone aware of an NMAC incident can report the incident on an Air Force Form 651, Hazardous Air Traffic Report (HATR). File the HATR within 24 hours if you are at the Air Force base where the incident occurred. If the incident occurred in flight, send the report to the nearest USAF safety office after landing. Normally, such a report should be filed with the local base operation's office at home base or as prescribed by MAJCOM. In any case, turn in a completed copy of the AF Form 651 to the wing safety office or provide the wing safety office with all available.

See and Avoid Techniques

Vision in Flight

The most advanced piece of flight equipment in any aircraft is the human eye, and since the number one cause of midair collisions is the failure to adhere to the see-and-avoid concept, efficient use of visual techniques and knowledge of the eye's limitations will help pilots avoid collisions. Your vision's clarity is influenced by some characteristics of the objects you are viewing, including:

- Your **distance** from the object
- The **size**, shape, and **movement** of the object
- The amount of **light** reflected by the object
- The object's **contrast** with the surrounding environment

You cannot see all objects in your field of vision with equal clarity. Visual acuity is best in a central area of about 10 to 15 degrees and decreases steadily toward the periphery of the visual field. A similar limitation of the eyes is binocular vision. For the brain to believe what is being seen, visual cues must be received from both eyes. The mind seldom believes that the object is really there if it is visible to one eye but obstructed from the other by a strut or windshield frame.

A visual limitation that few pilots are aware of is the time the eyes require to focus on an object. Focusing is an automatic reaction, but to change focus from a nearby object, such as an instrument panel, to an aircraft one mile away, may take two or more seconds.

Clearing/Scanning Techniques

An efficient scan pattern is paramount to visual collision avoidance procedures. In developing a proper scan technique, remember that when your head is in motion, vision is blurred and the brain will not be able to identify conflicting traffic. Therefore a constant motion scan across the windscreen is practically useless.

A proper scan technique is to divide your field of vision into blocks approximately 10 to 15 degrees wide. Examine each block individually using a system that you find comfortable, perhaps from left to right or starting from the left and moving to the right, then back to the left again. This method enables you to detect any movement in a single block. It takes only a few seconds to focus on a single block and detect conflicting traffic.

Remember to refocus your eyes on an object far from your aircraft (> 5 miles) after each check of your instruments… otherwise, your eyes will still be focused for close vision, making your visual lookout virtually useless.

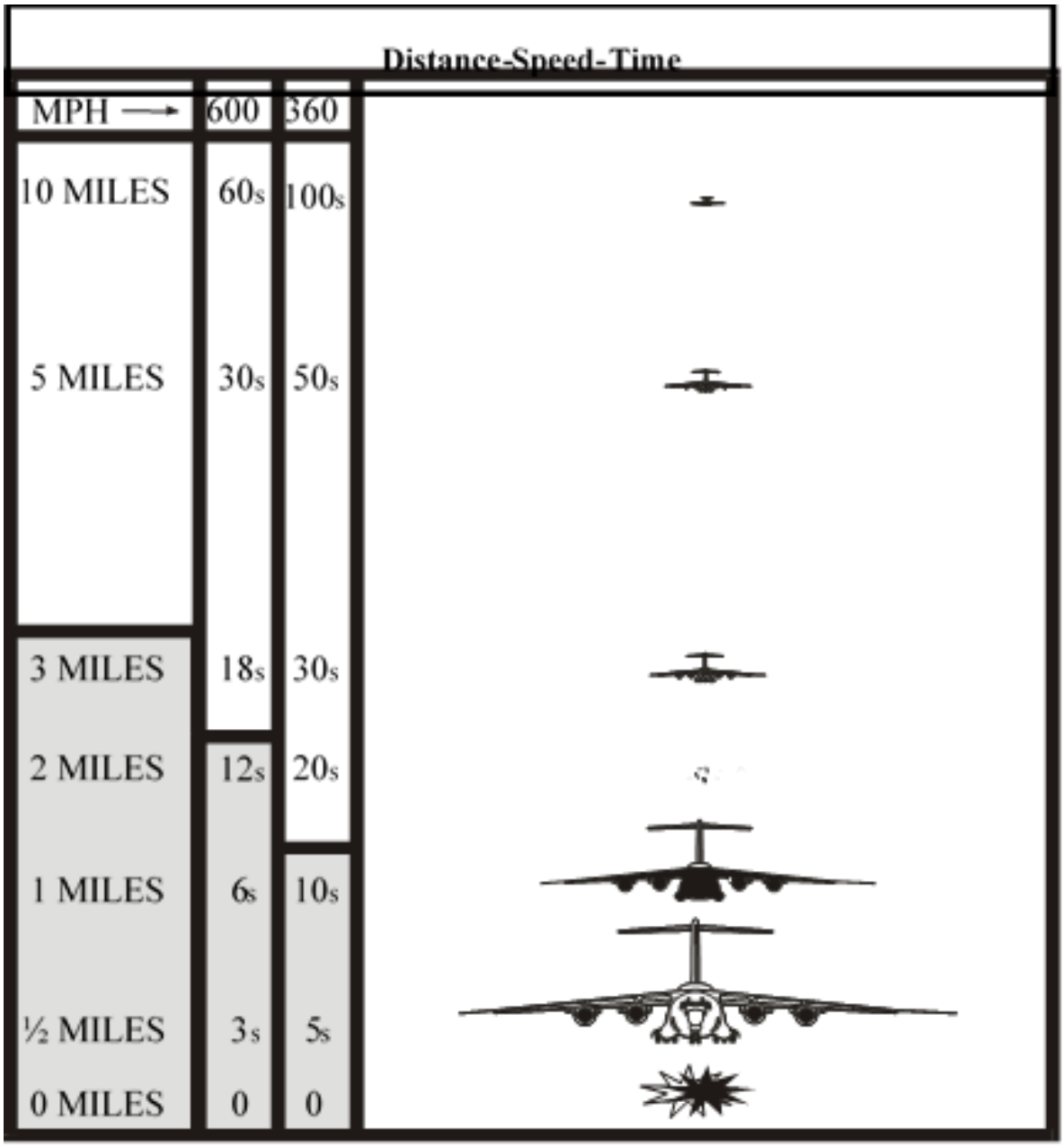
A moving target attracts attention and is relatively easy to see. A stationary target or one that is not moving in your windscreen is very difficult to detect and is the one that can result in a MIDAIR COLLISION.

The time to perceive and recognize an aircraft, become aware of a collision potential and decide on appropriate action, may vary from as little as 2 seconds to as much as 15 seconds or more depending on the pilot, type of aircraft and geometry of the closing situation. Aircraft reaction time must also be added. Any evasive maneuver contemplated should include maintaining visual contact with the other aircraft, if practical.

See and Avoid Techniques

Blossom Effect (FAA Safety)

This limitation is compounded by the fact that at a distance, an aircraft on a collision course with you will appear to be motionless. It will remain in a seemingly stationary position, without appearing either to move or to grow in size for a relatively long time, and then suddenly bloom into a huge mass filling one of your windows. This is known as "blossom effect." Since we need motion or contrast to attract our eyes' attention, this effect becomes a frightening factor when you realize that a large bug smear or dirty spot on the windshield can hide a converging plane until it is too close to be avoided.



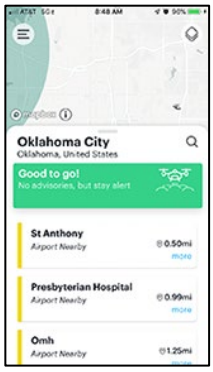
Based on the combined airspeed of the two aircraft, will you have enough time to react once you have seen the aircraft?

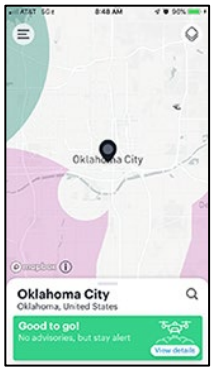
Unmanned Aircraft Systems (UAS)

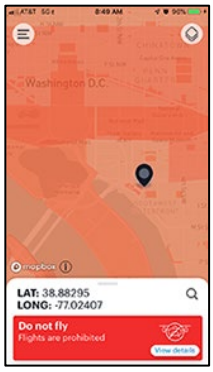
PILOT INFORMATION

There are requirements and processes to become a pilot. The website www.faa.gov/uas has all the information and links needed to walk you through the process, whether you're a first-time pilot or existing pilot.

B4UFLY is an easy-to-use free smartphone app that helps unmanned aircraft operators determine in real time whether there are any restrictions or requirements in effect at the location where they want to fly. Below are sample screen shots.

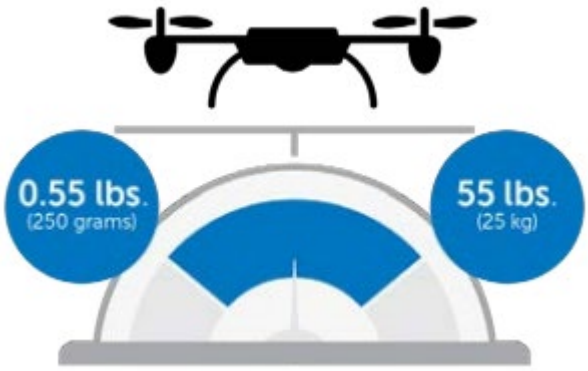






AIRCRAFT REQUIREMENTS

There are two options to fly your drone legally. Each option has different requirements depending on how you want to fly. To find out, visit www.faa.gov/uas/getting_started/



REGISTRATION

If your aircraft weighs more than 0.55 lbs. (250 grams) and less than 55 lbs. (25 kg) at https://faadronezone.faa.gov/#/

Preflight Checklist

DO read & understand all safety guidelines
DO register UAS if over 0.55 lbs. (& less than 55 lbs.) & label UAS w/registration number
DO contact the airport or control tower when flying within 5 miles of the airport
DO fly at or below 400 feet
DO fly a model aircraft/UAS at the local model aircraft club

DON'T fly near manned aircraft
DON'T fly beyond line of sight of the operator
DON'T fly an aircraft weighing more than 55 lbs. unless it's certified by an aeromodelling community-based organization
DON'T fly contrary to your aeromodelling community-based safety guidelines
DON'T fly model aircraft for payment or commercial purposes

Aviation Safety Reporting System (ASRS)

An aviation safety program funded by the FAA and administered by NASA that allows for hazard or incident reporting. The program is voluntary, confidential and non-punitive. The ASRS collects, analyzes, and responds to voluntarily submitted aviation safety incident reports in order to lessen the likelihood of aviation accidents. Recently the ASRS expanded to include Unmanned Aircraft Systems (UAS) built on the same concepts of increasing awareness through reporting.

Civilian or military aviators, air traffic controllers, flight attendants, mechanics, ground personnel, and others involved in aviation operations may submit reports to the ASRS when they are involved in, or observe, an incident or situation in which aviation safety was compromised. Additional categories for UAS include Lost Link, airspace incursions, and Equipment Issuse (hardware/software/automation).

HOW DO I REPORT a hazard or incident?

1. Go to the ASRS website
    a) Manned: https://asrs.arc.nasa.gov/
    b) UAS: https://asrs.arc.nasa.gov/uassafety.html
2. Click on the link for the appropriate form — your browser should start the free Adobe Acrobat Reader. (If not, download the form and start Acrobat Reader manually.) You have two choices for submitting an incident report.
3. You have two choices for submitting an incident report:
    a. Fill out the form on your computer or print it out and fill out the form by hand, then mail to the address below or
    b. Fill and submit the form online.
4. Mail your completed form to:

NASA AVIATION SAFETY REPORTING SYSTEM
POST OFFICE BOX 189
MOFFETT FIELD, CALIFORNIA 94035-0189

SCAN ME

The IMMUNITY Concept

The filing of a report with the National Aeronautics and Space Administration (NASA) is considered by the FAA to be indicative of a constructive attitude. Such an attitude will tend to prevent future violations. Accordingly, although a finding of a violation may be made, neither a civil penalty nor certificate suspension will be imposed if:

1. The violation was **inadvertent** and not deliberate;
2. The violation did not involve a **criminal** offense, accident, or action showing lack of competence or qualification;
3. The person has not been found in any prior FAA enforcement action for a period of 5 years prior to the date of the occurrence;
4. The person proves that, within **10** days after the violation, he or she completed and delivered or mailed a **written report** of the incident or occurrence to NASA under ASRS.

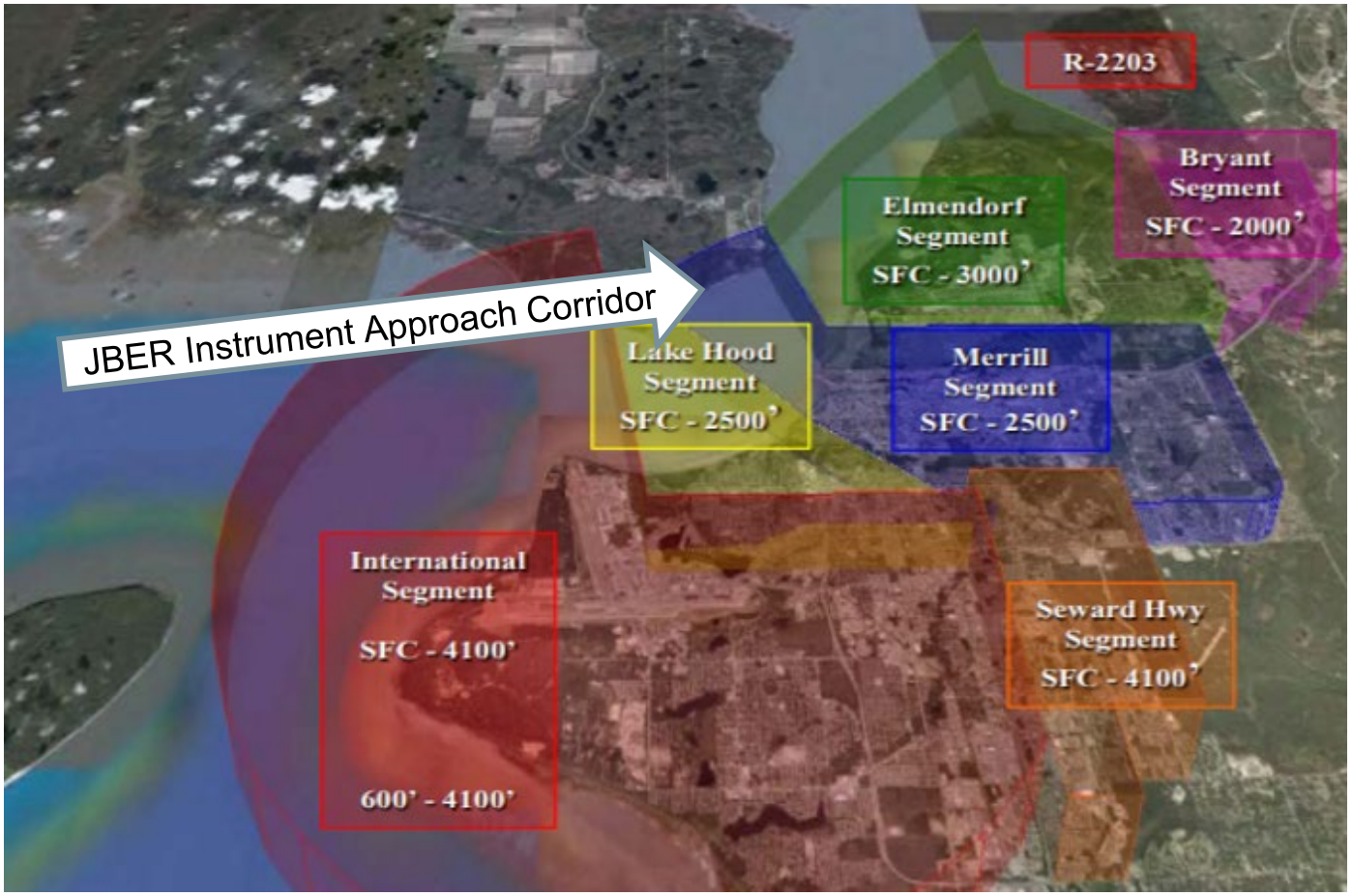
NOTE: For air traffic controllers the immunity rules are not the same. For exact regulation details, see FAA Advisory Circular Number 00-46E and Facility Operation and Administration Handbook, 7210.3Z.

14 CFR Part 93 Airspace

Anchorage Terminal Area

All aircraft operating in the Anchorage terminal area are required to adhere to Title 14 CFR 93 Subpart D restrictions. VFR procedures have been established for each field and must be reviewed prior to operation. These procedures are now available in the NOTICES section of the Alaska Chart Supplement.

A graphical depiction of the Anchorage Terminal Area Segments is below, but for a full description visit: https://www.ecfr.gov/current/title-14/chapter-I/subchapter-F/part-93



See opposite page for vertical representation of the Instrument Approach corridor through Lake hood and Merrill Segment

DID YOU KNOW???

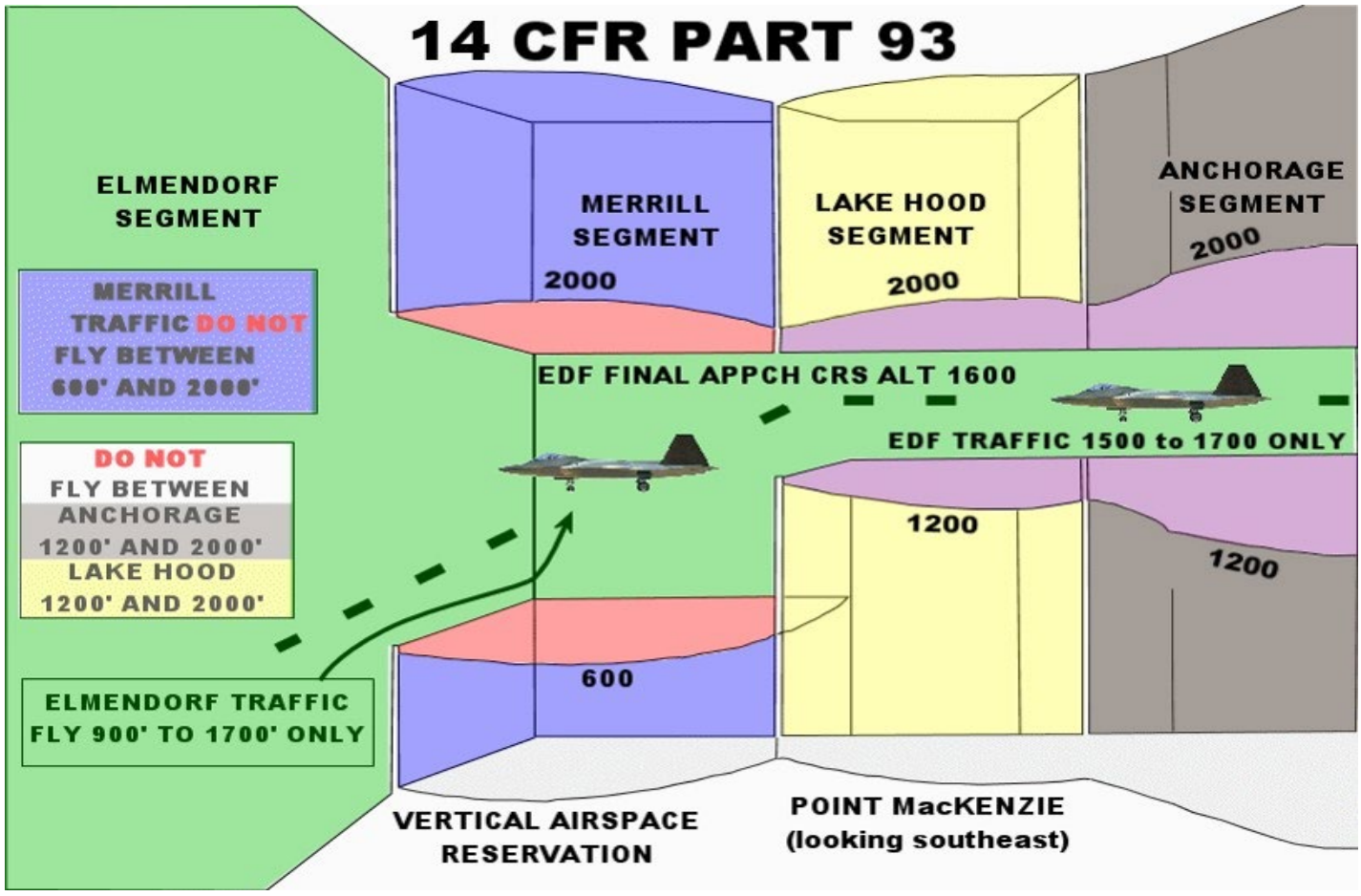
Ted Stevens International Airport Statistics:

- >96,000 passenger and cargo aircraft arrivals in 2022 – approximately 263 per day
- 2nd largest airport in the US for landed weight of cargo aircraft (2019)
- 4th largest airport in the world by cargo throughput (2019)
- Within 9.5 hours of 90% of the industrialized world

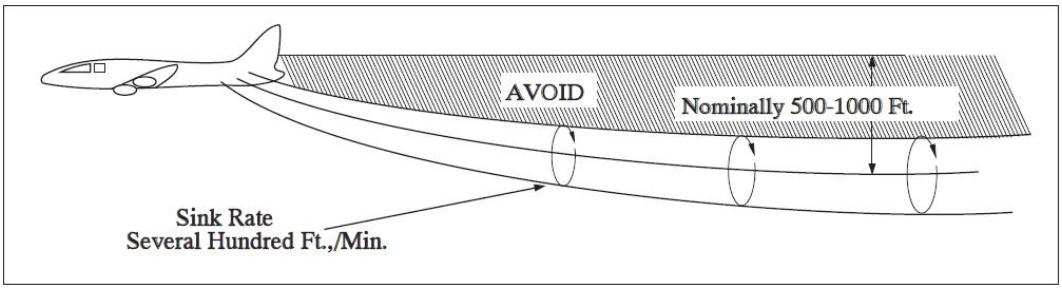
WITHIN 12 MILES OF 3 CLASS D AIRSPACES!!!!!

14 CFR Part 93 Airspace

Elmendorf Instrument Approach Corridor Breakout



Elmendorf (EDF) traffic and Merrill/Lake Hood traffic are at times separated by only 300'. Wake turbulence from heavy aircraft has been experienced and a collision potential exists between VFR traffic and aircraft in the final approach corridor to JBER, most recent event occurred in February 2023. It is vital that all pilots fly at their assigned altitudes for midair collision avoidance.



Prior to entering or departing the Terminal Airspace surrounding Anchorage is an excellent time to ensure your TCAS and ADS-B (as equipped) are functioning. These are great tools for helping spot other aircraft operating in the vicinity (looking down at white aircraft against snow or up at gray aircraft against a cloud deck for example) but are no replacement for See and Avoid.

JBER Procedures and Airspace

General Operations

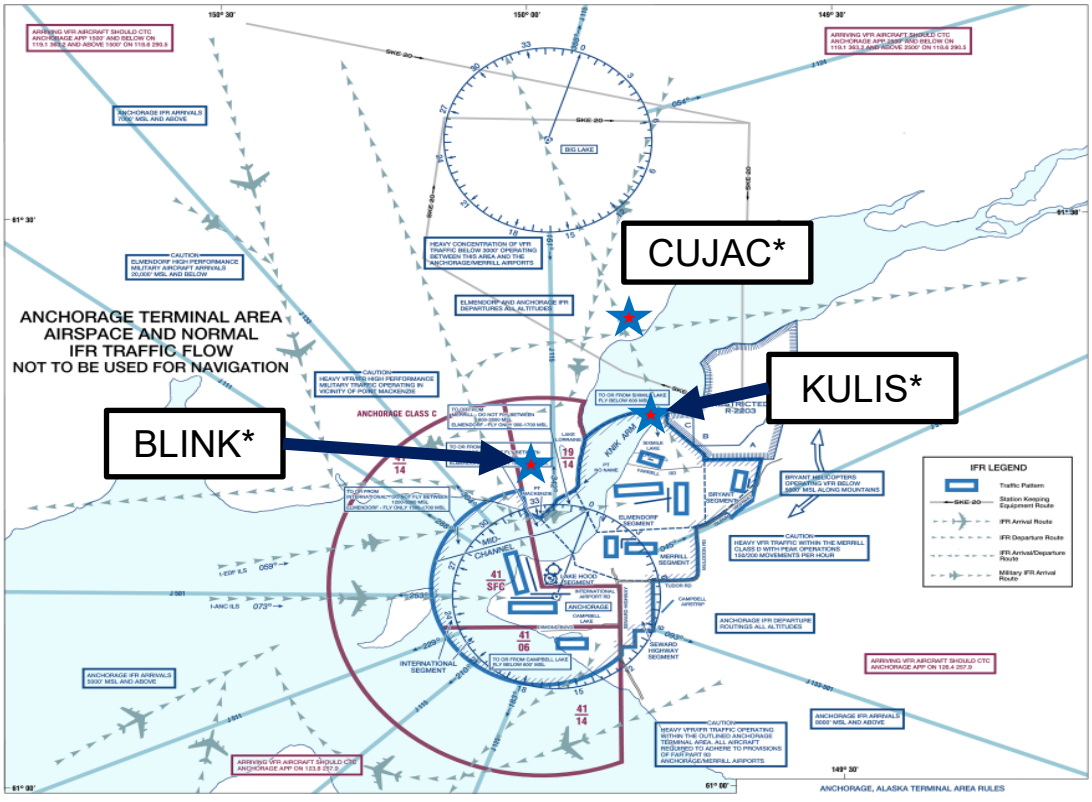
The primary Runway is 06/24 due to the length and available recovery options including multiple precision approaches. Runway 16/34 is also used to a lesser extent, primarily in VMC conditions or when weather dictates. Rectangular pattern altitudes are 1700'MSL for fighter aircraft and 1200'MSL for heavy aircraft. During IMC, Runway 16/34 may be used for instrument recovery using circling procedures from Runway 06, or from a TACAN approach to runway 16. You can expect additional traffic to runway 16/34 when runway 06/24 is operating at reduced length or when closed. Additionally, you can expect Cartee Airspace to be requested by heavy aircraft recovering to runway 34 at Elmendorf.

Cartee Airspace

The Cartee airspace begins at the surface and extends to 2,500' MSL. The Cartee Airspace is defined in the Alaska Chart Supplement by nearby landmarks and off the EDF TACAN (depiction on next page). Anchorage Approach (IFR) or Elmendorft Tower (VFR) coordinates with Merrill Tower to clear the airspace when required.

Restricted Areas

R-2203 is a three-part restricted area established on the Fort Richardson complex. It's used for weapons and live artillery training; pattern and landing work; and HC-130J, C-17 and HH-60 personnel and equipment airdrops. Run-ins to the Drop Zone are normally flown from the north, starting west of the Wasilla airport southbound into R-2203. Occasionally, a westerly run-in into R2203 is flown. Aircraft operating on the Landing Zone and Drop Zones within R-2203 will normally exit the area to the west toward Goose Bay, setting up for landings at either Elmendorf AFB or Anchorage International. C-17s may spend an hour or more conducting multiple drops via oval "racetrack" patterns. R-2203 is very active, do not overfly when status is "HOT." Status can also be obtained from Anchorage Approach (118.6/119.1), Elmendorf Tower (127.2), or EDF ATIS (124.3).



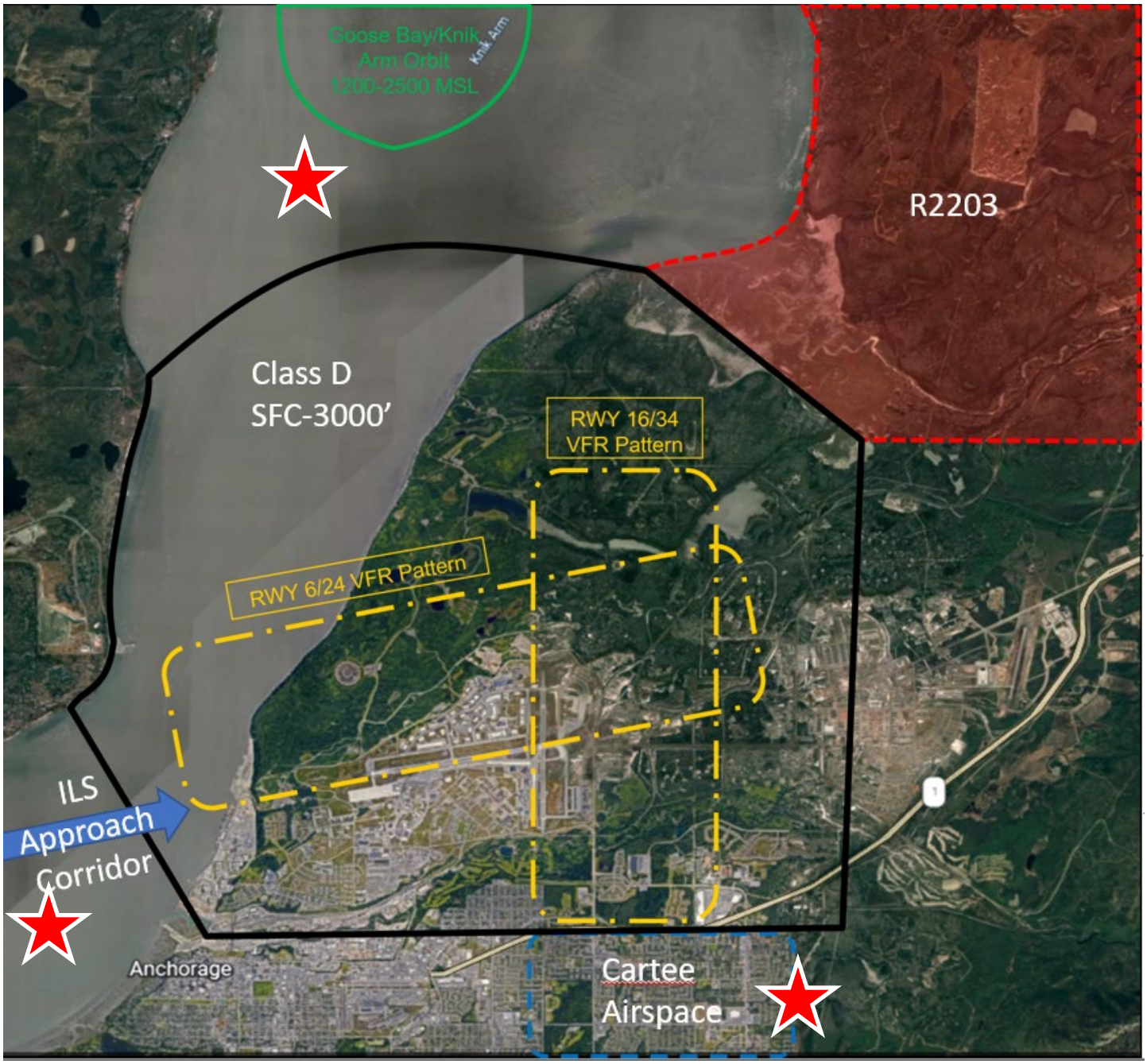
Where to look for military aircraft returning VFR to EDF

Normally fighter (F-22/F-16 type) and cargo aircraft (C-17/C-130 types) recovering VFR will fly to point CUJAC and from there due south to KULIS or southwest to BLINK. In both cases you can expect aircraft to cross the Knik Arm south of Goose Bay.

*Approximate locations

- CUJAC EDF335009
- KULIS EDF321004
- BLINK EDF267006

JBER Procedures and Airspace



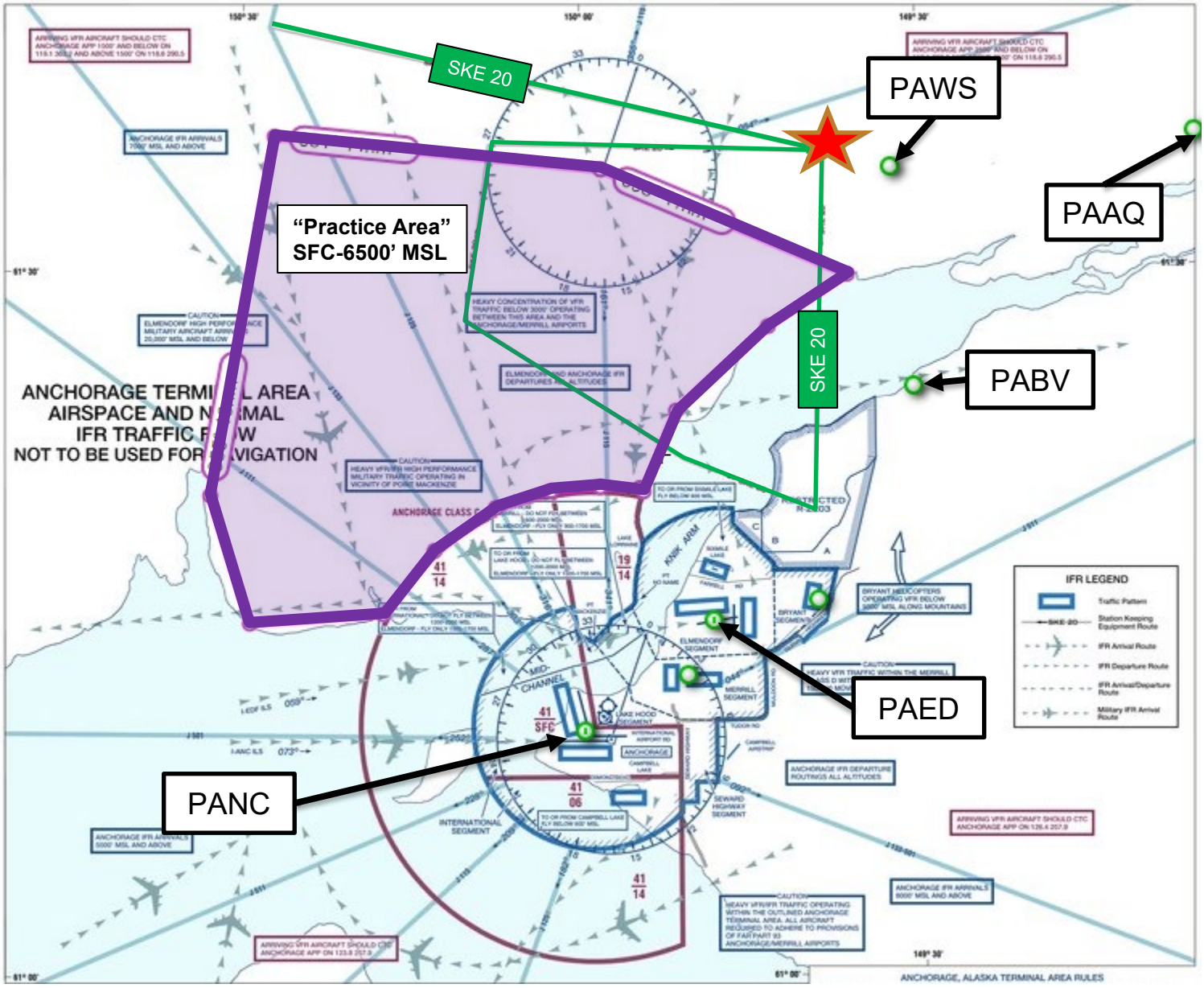
★ Hotspots with high potential of NMACs

Visual Pattern: The visual pattern is busy with numerous aircraft from sunrise to early evening hours, Monday through Friday. Primary pattern altitudes are 1,200' MSL and 1,700' MSL (800' MSL for light planes and helicopters), but local aircraft can be anywhere from surface to 4,500' MSL.

Knik Arm: Used by Elmendorf aircraft for VFR holding and traffic sequencing. C-130s, C-17s, and E-3s may be seen holding between 1,200' MSL and 2,500' MSL over the Knik Arm and will remain over water. This may be only 100' above the Goose Bay airport traffic pattern of 1100 MSL! Elmendorf Aero Club aircraft normally cross the Knik Arm at 2500' MSL.

Generally Accepted G.A. Practice Area

3 WG Safety with the help of Eleventh Air Force gathered with leaders in the General Aviation community to discuss airspace that could use more focus. The Generally Accepted Practice Area was brought to table as a high interest area. Military pilots are generally unaware that this is an area with a high density of aircraft operating from the surface up to 6500' MSL. The 3 WG Safety office is changing this narrative to provide heightened awareness to our pilots and bolster a safe operating airspace. Below is a visual depiction of the "Practice Area" overlayed on the Anchorage Terminal Area map showing one of the SKE routes that pass through the area.



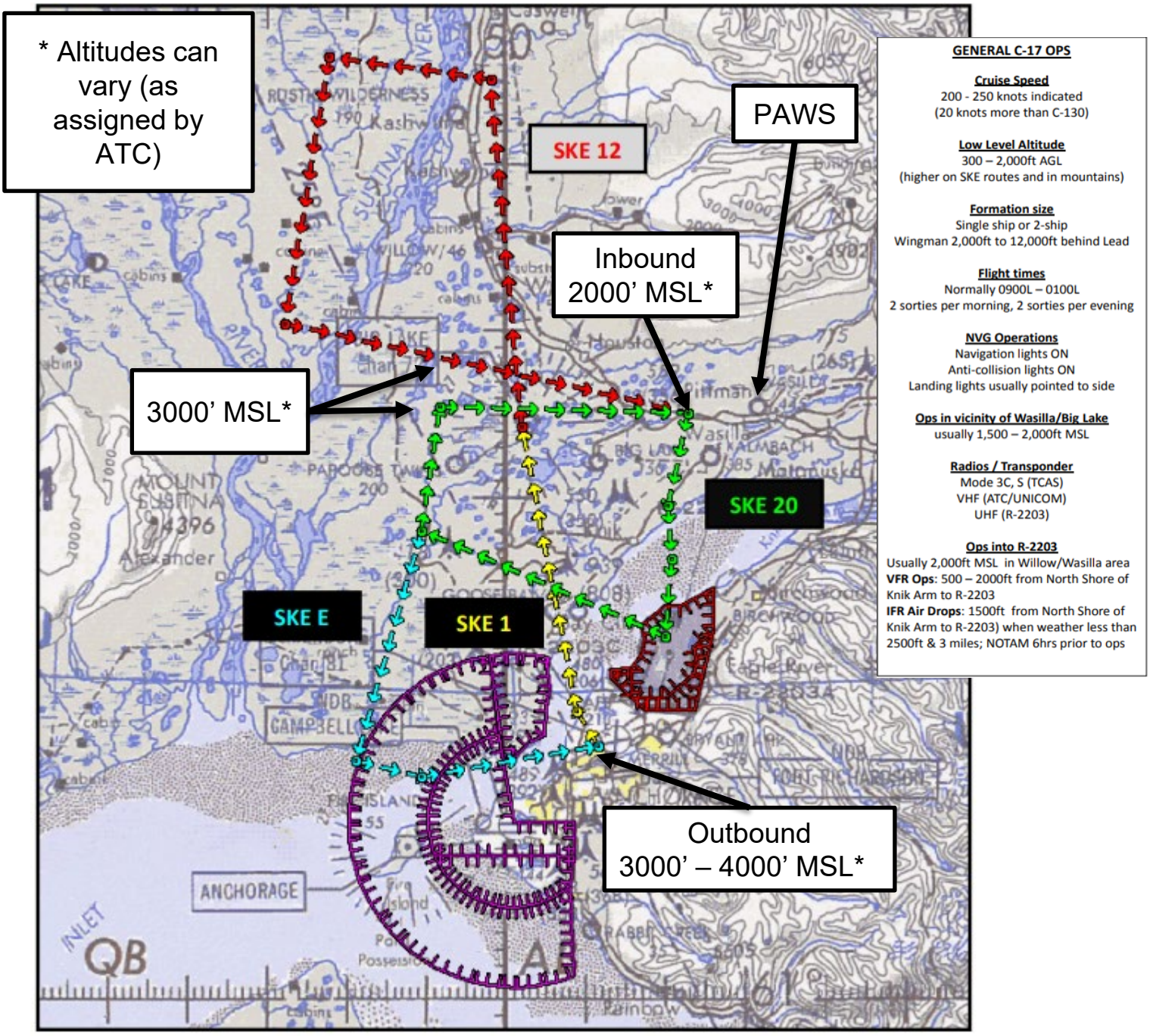
SKE 20 Initial Point – High potential for traffic, look for aircraft at 2000' MSL starting an airdrop run into R-2203

SKE Routes (C-17/C-130)

Station Keeping Equipment (SKE) routes are primarily used by JBER's cargo aircraft. SKE allow the operating aircrews to train as formations in airdrop, ingress, and egress operations. The route of flight for some of the SKE routes transition through the generally accepted practice area for General Aviation (GA) aircraft conducting practice operations.

It is imperative that pilots and aircrew are on high alert for inbound and outbound traffic. To increase awareness, when an aircraft is planned to fly a SKE route it will be published in PAED NOTAMs. Additionally, Kenai Flight Service Station (FSS) will publish the NOTAM with PAZA (Anchorage Center). Through a letter of agreement (LOA), Kenai FSS will also publish a "pointer" NOTAM at Wasilla, Palmer, Birchwood and Big Lake airfields directing aviators to view the PAZA NOTAM.

SKE ROUTES ARE NOT PUBLISHED ON VFR CHARTS
Please see the JBER Airspace Page for additional details



Military Training Routes (MTRs)

MTRs are utilized by JBER fighter, cargo, and rotary aircraft for low-level flight operations. MTRs are regularly surveyed routes, with a defined corridor area, and a set series of altitudes that can be operated within.. The surveys include threats to safety of flight (towers, obstacles, etc.), known airfields and specific operating instructions around those fields, no-fly zones, mandatory radio calls and frequencies, etc. It is the responsibility of the military aircrew to plan for all these restrictions and follow them. These MTRs allow for high-speed operation exemption from standard FAA speed restrictions but only within the surveyed corridor and altitude block of the MTR.

MTR route centerlines are depicted on all VFR Sectionals with the MTR number and traffic flow. However, these are only the centerline of the surveyed MTR points. Military aircraft may be operating anywhere within the surveyed corridor of the MTR (normally five nautical miles on either side of centerline), which is not depicted on the Sectional. General Aviation Aircraft should utilize extreme caution anywhere within five nautical miles of an MTR centerline due to the high speed and low-level tactical training being conducted when the route is active.

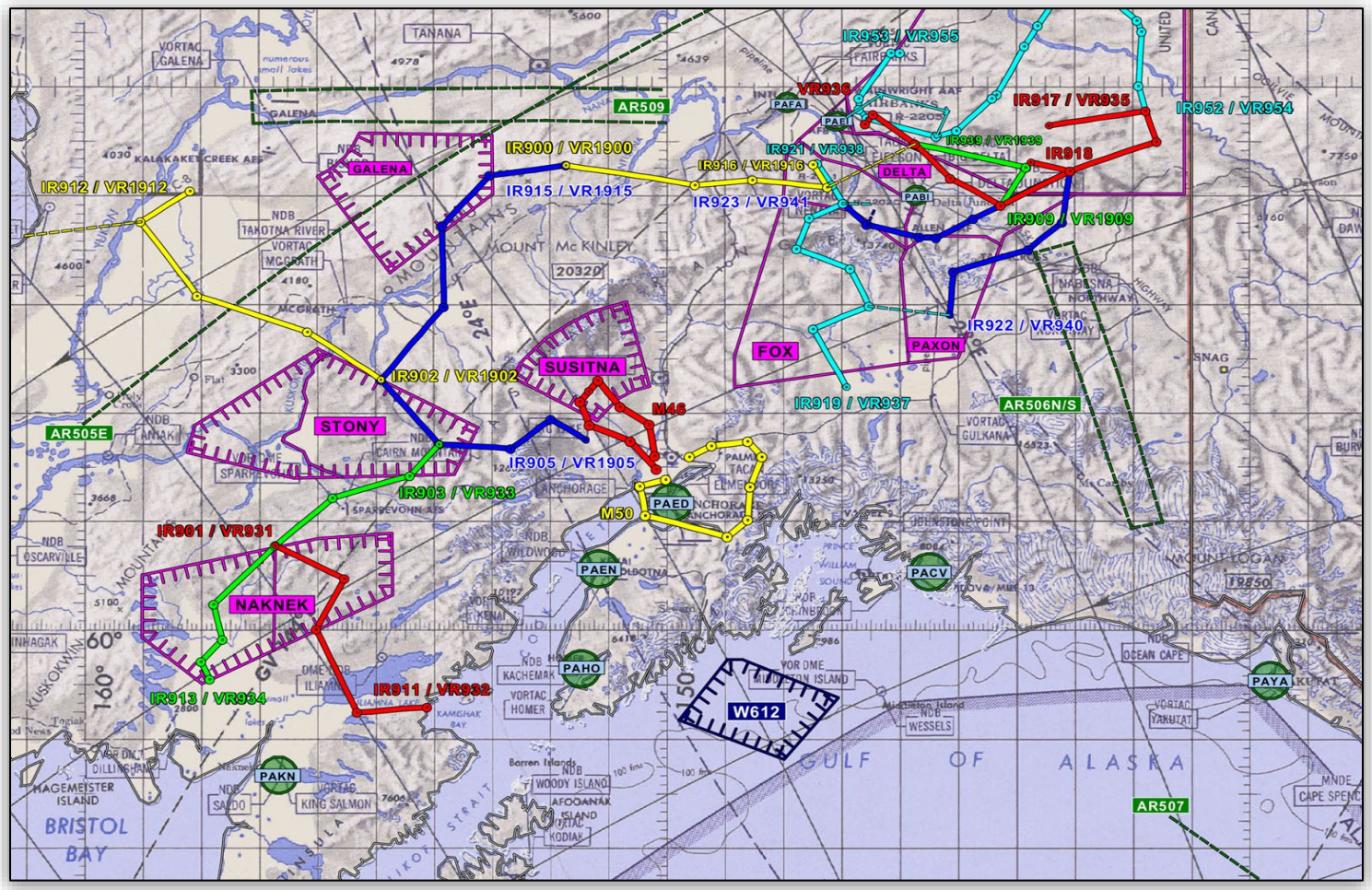
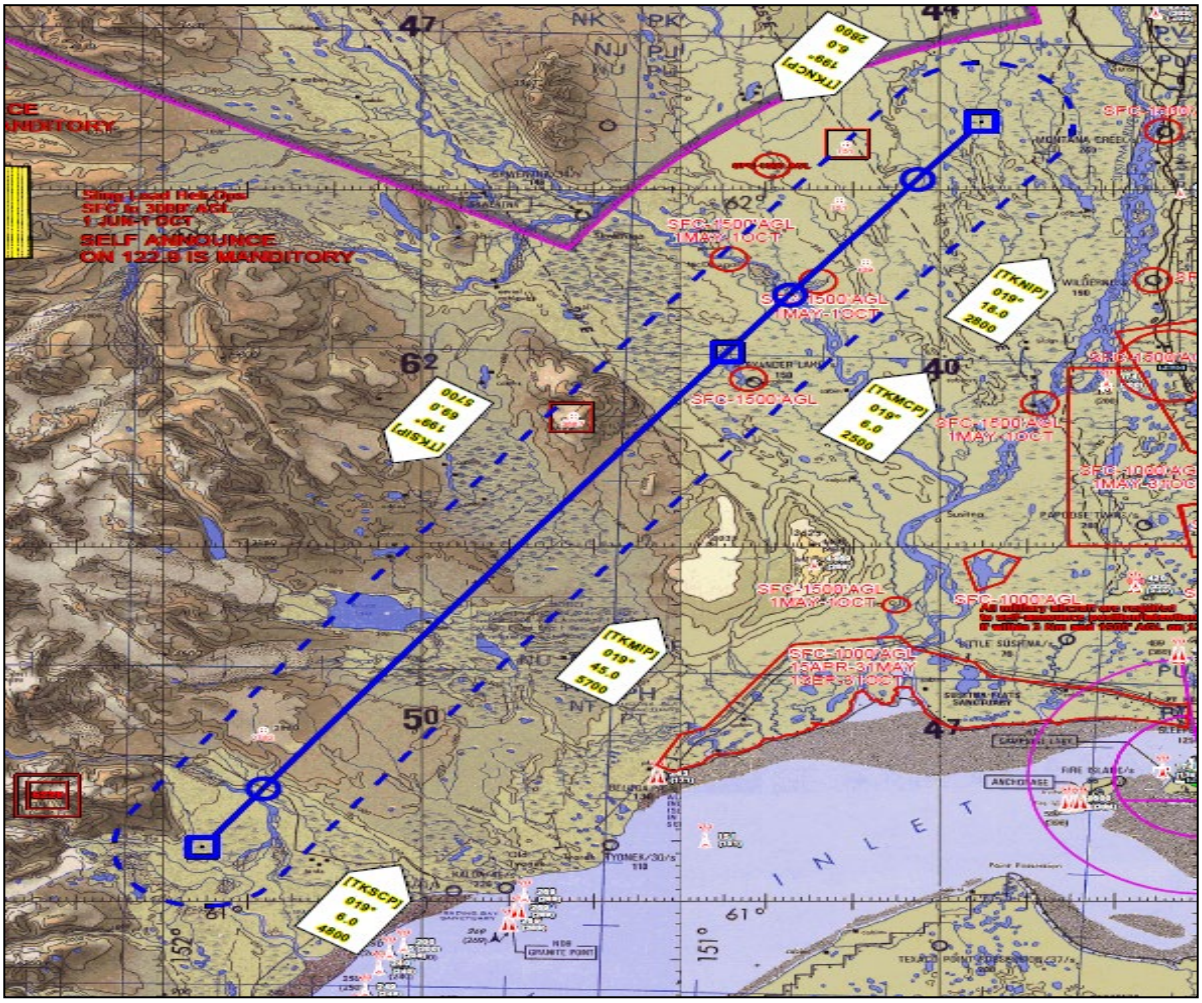


Chart showing the most common MTRs utilized by JBER aircraft in Alaska.
See the contacts page at the end for details on how to determine an MTR is scheduled for use.

Other Local Training Routes

Talkeetna One Helicopter Air-To-Air Refueling Route



Note that the north-east end of the track is near the edge the accepted practice area. Aircraft on this track will be conducting air to air refueling at low altitudes (2000-4000' MSL). You can expect to see a C-130 type aircraft refueling one or more HH-60s along this route.

For more data on Military Training Routes and Military Aerial Refueling Routes, see the Alaska Chart Supplement, Page 452. There are five additional aerial refueling routes below 10,000' MSL throughout the Alaska region.

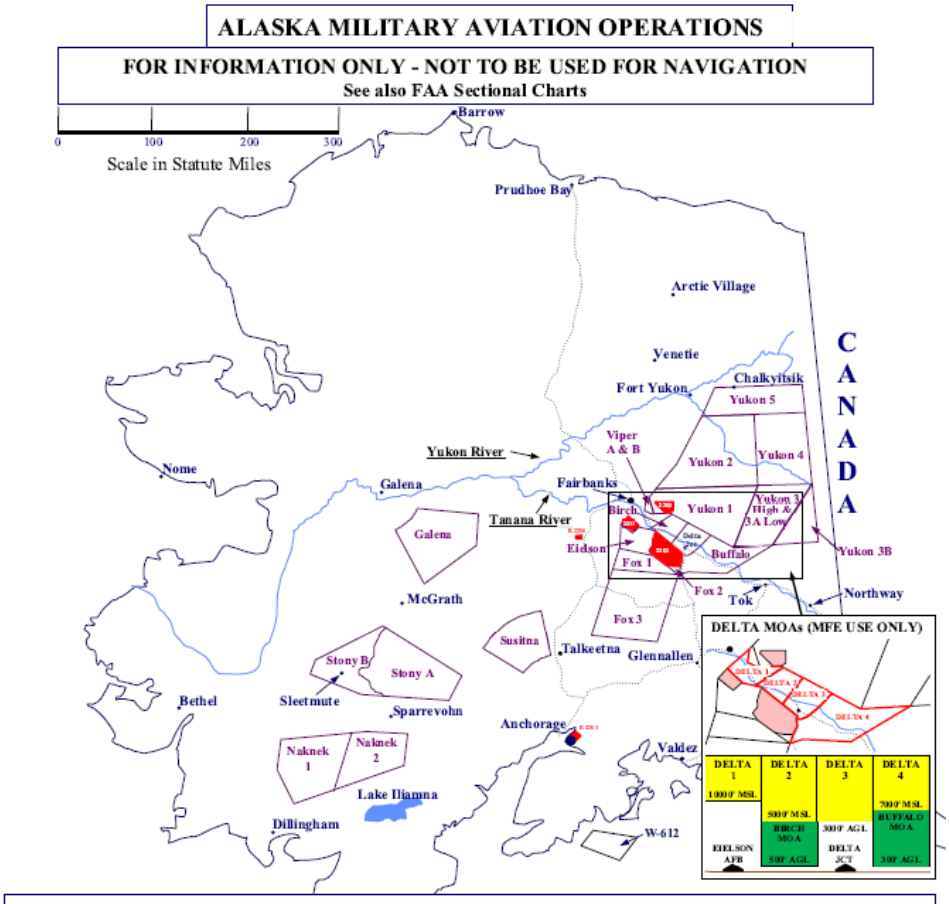
HC-130 refueling an HH-60G

Military Operating Areas (MOAs)

Military Operations Areas (MOAs) are used by military aircraft for air-to-air and air-to-ground training. According to the Aeronautical Information Manual, "Pilots operating under VFR should exercise extreme caution while flying within a MOA when military activity is being conducted. The activity status (active/inactive) of MOA's may change frequently. Therefore, pilots should contact any FSS within 100 miles of the area to obtain accurate real-time information concerning the MOA hours of operation."

If you choose to fly through a MOA, we highly recommend you consult Anchorage Center to determine if the MOA is active and the general location of the military aircraft. If possible, de-conflict laterally or vertically from the military aircraft in the MOA. Be aware that fighter aircraft can transit from one end of the MOA to the other in a matter of minutes and regularly change altitudes in excess of tens-of-thousands of feet.

When flying in and near the central Alaskan MOAs (near Fairbanks and Delta Junction) you can receive Special Use Airspace Information Service (SUAIS) from Eielson Range Control on VHF 125.3 or 126.3. When calling 1-800-WX-BRIEF, you must ASK the briefer for NOTAM information on each MOA you plan to transit.



SPECIAL USE AIRSPACE LIMITS

MILITARY OPERATIONS AREAS (MOA):			
BIRCH	500' AGL - 4,999' MSL	FOX 1	5,000' AGL - 17,999' MSL
BUFFALO	300' AGL - 6,999' MSL	FOX 2	7,000' MSL - 17,999' MSL
EIELSON	100' AGL - 17,999' MSL	FOX 3	5,000' AGL - 17,999' MSL
YUKON 1	100' AGL - 17,999' MSL	GALENA	1,000' AGL - 17,999' MSL
YUKON 2	100' AGL - 17,999' MSL	NAKNEK 1	3,000' AGL - 17,999' MSL
YUKON 3 HIGH	10,000' MSL - 17,999' MSL	NAKNEK 2	3,000' AGL - 17,999' MSL
YUKON 3A LOW	100' AGL - 9,999' MSL	STONY A	100' AGL - 17,999' MSL
YUKON 3B	2,000' AGL - 17,999' MSL	STONY B	2,000' AGL - 17,999' MSL
YUKON 4	100' AGL - 17,999' MSL	SUSITNA	** - 17,999' MSL
YUKON 5	5,000' AGL - 17,999' MSL	** FOR SUSITNA, FLOOR OF 5,000' AGL OR 10,000' MSL, WHICHEVER IS HIGHER	
VIPER A	500' AGL - 10,000' MSL		
VIPER B	10,000' MSL - 17,999' MSL	DELTA 1-4	See Cutout

RESTRICTED AREAS:			
R-2202A/B	SURF	-	9,999' MSL
R-2202C	10,000' MSL	-	FL 310
R-2202D	FL 310	-	UNLIMITED
R-2203A/B	SURF	-	11,000' MSL
R-2203C	SURF	-	5,000' MSL
R-2205	SURF	-	20,000' MSL
R-2206	SURF	-	8,800' MSL
R-2211	SURF	-	FL 310
WARNING AREA:			
W-612	SURF	-	FL 290

Lights Out

The FAA has approved military aircraft to operate with no external lighting in Alaska's MOAs and Air Traffic Control Assigned Airspace. These operations are necessary for realistic training at night using Night Vision Devices (NVDs). It is imperative that all users of Alaskan airspace be familiar with the areas where this training occurs. There are two types of reduced-light training:

Reduced Lighting – Aircraft anti-collision lights (strobes) off, but position lights on. This may occur in any special-use airspace (such as MOAs) without a NOTAM or in the case of the HH-60G helicopter, in any airspace.

Lights-out – Anti-collision and position lights off. These operations will be announced at least 48 hours in advance via Anchorage Center (PAZA) NOTAM, are authorized in MOAs ATCAAs and restricted areas, and will be carried out with public safety in mind.

Major Flying Exercises

Major Flying Exercises (MFEs) such as RED FLAG Alaska and NORTHERN EDGE are two/three-week, large flying exercises that are primarily based out of Elmendorf Airfield and Eielson AFB. They consist of joint military flying operations by units from around the world. MFEs significantly increase the volume and intensity of military air traffic in the Elmendorf and Anchorage areas. During MFE operations, as many as 30 aircraft can be departing simultaneously from Elmendorf for the Fox and Yukon Military Operating Areas (MOA) and Air Traffic Control Assigned Airspaces (ATCAAs) and the Restricted Areas near the Fox and Yukon airspaces depicted on the previous page.

These exercises bring an enormous number of aircraft and pilots unfamiliar with the challenges of Alaska aviation. This includes pilots, aircraft, and personnel from foreign militaries. During these times, military and GA traffic should exercise increased vigilance in all areas of Alaskan Airspace. Local Safety Agencies conduct briefings and training to incoming pilots and aircrew to increase awareness of local flying operations. This understanding helps mitigate the possibility of midair collisions between GA and military aircraft conducting operations in the densely populated airspace. The Friday prior to a MFE is normally an area familiarzation day, you can expect increased air traffic those days in addition to the dates below.

Upcoming Major Flying Exercises:
Northern Edge: May 4 –19, 2023
Red Flag Alaska 23-2 June 8–23, 2023
Red Flag Alaska 23-3 August 10–25, 2023

Visiting aircraft you may see during the MFEs:

F-16

F-35

F-18

KC-46

KC-135

JBER Aircraft

C-12F Huron
Primary Function: passenger and cargo lift
Wingspan: 54 feet, 6 inch (16.61 meters)
Length: 57 feet, 10 inches (17.63 meters)
Height: 14 feet, 11 inches (4.55 meters)
Speed: 284 mph (457 km/hr)

C-17 Globemaster III
Primary Function: cargo and troop transport
Wingspan: 169 feet 10 inches (to winglet tips) (51.75 meters)
Length: 174 feet (53 meters)
Height: 55 feet 1 inch (16.79 meters)
Speed: 450 knots at 28,000 feet (Mach .74)
Formation: 2-Ship throughout mission profile

HC-130J Combat King II
Primary Function: fixed-wing Personnel Recovery Platform
Wingspan: 132 feet, 7 inches (40.4 meters)
Length: 97 feet, 9 inches (29.57 meters)
Height: 38 feet, 9 inches (11.58 meters)
Speed: 316 KIAS at sea level
Formations: Air to air refueling capable with HH-60G

E-3G AWACS
Primary function: airborne battle management, command and control
Wingspan: 145 feet, 9 inches (44.4 meters)
Length: 152 feet, 11 inches (46.6 meters)
Height: 41 feet, 9 inches (13 meters)
Rotodome: 30 feet in diameter (9.1 meters), 6 feet thick (1.8 meters), mounted 11 feet (3.3 meters) above fuselage
Speed: optimum cruise 360 mph (Mach 0.48)

JBER Aircraft

F-22 Raptor
Primary Function: air dominance, multi-role fighter
Wingspan: 44 feet, 6 inches (13.6 meters)
Length: 62 feet, 1 inch (18.9 meters)
Height: 16 feet, 8 inches (5.1 meters)
Speed: Mach two class with super cruise capability
Formations: 2-4 ship in transit to working airspace

HH-60G Pave Hawk
Primary Function: Personnel recovery in hostile conditions and military operations other than war in day, night or marginal weather
Thrust: 1,560-1,940 shaft horsepower, each engine
Rotor Diameter: 53 feet, 7 inches (14.1 meters)
Length: 64 feet, 8 inches (17.1 meters)
Height: 16 feet, 8 inches (4.4 meters)
Speed: 184 mph (159 knots)
Formations: Normally 2 ship, can refuel from HC-130J

X-165B Loose Leaf
Primary Function: Air Superiority w/ in office environment, antics and shenanigans.
Wingspan: 5.6 inches (14.2 centimeters)
Length: 6.8 inches (17.2 centimeters)
Height: .75 inches (1.9 centimeters)
Speed: 2.3 mph (2 knots)

General Flight Planning

Alaska Military Airspace

- https://www.jber.jb.mil/Info/Alaskan-Airspace-Info/

SCAN ME

Aeronautical Information Services (Digital Products)

- https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/

Flight Mission Planning

- https://skyvector.com/

Aviation Weather Center

- https://aviationweather.gov/

Unmanned Aerial Systems

- www.faa.gov/uas/getting_started/

Aviation Safety Reporting

- https://asrs.arc.nasa.gov/

Below are points of contact for the different Military Training Routes used in Alaska. Additional routes and POCs can be found in Area Planning 1B.

JBER Scheduling
(907)552-0410/2406

- IR901/IR911
- VR1901/VR1911
- IR903/IR913
- VR933/VR9934
- IR905/IR915
- VR1905/VR1915

Eielson Scheduling
(907)377-2725/2684

- IR919/IR921
- VR937/VR938
- IR922/IR923
- VR940/VR941

WANTS Check

- ❑ Weather
- ❑ Activated – flight plan
- ❑ NOTAMs
- ❑ Take off/landing data
- ❑ Self/Sunglasses

Contact Information

One of our goals with this pamphlet is to open a line of communication between General Aviation operators and military operators in the area. Is there a hot spot you've noticed, or do you have other recommendations on how we can deconflict? Please let us know! If you have questions, comments, or concerns regarding safety of flight and military flight operations you can reach us at:

3 Wing Flight Safety
3wg.sef@us.af.mil
907-552-6858

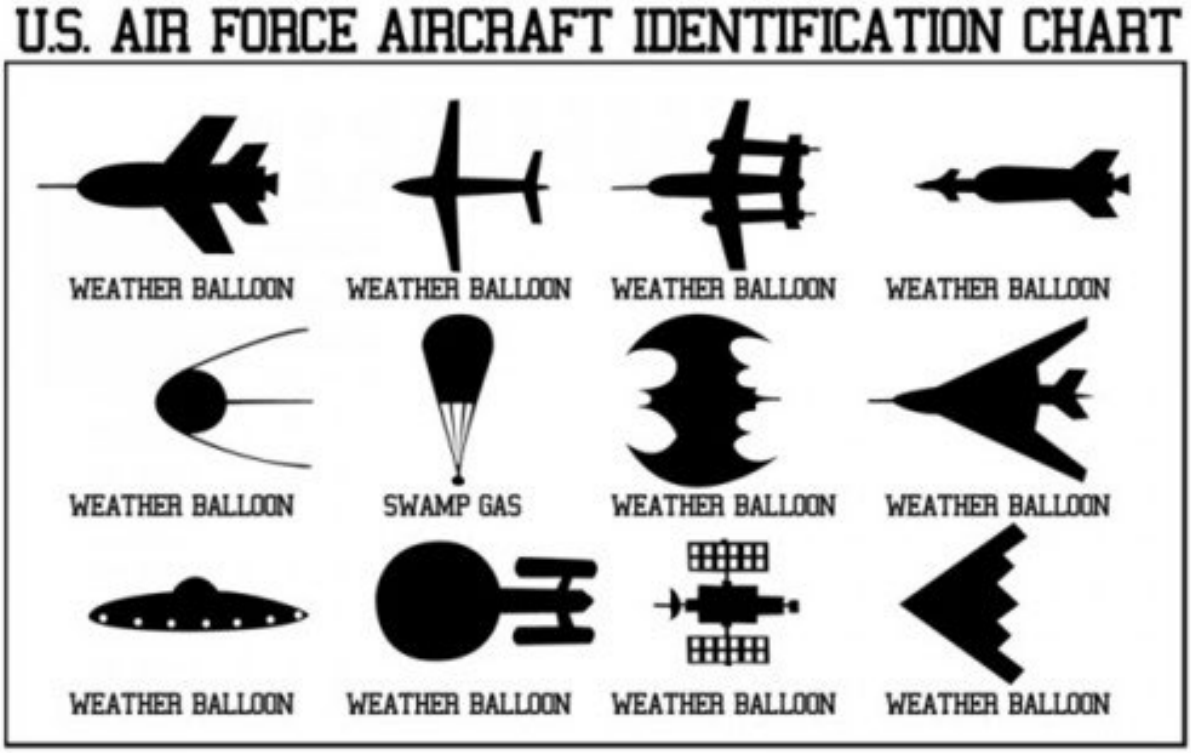
Additional reading regarding Mid-Air Collision Avoidance and flight safety:

- AOPA
  - https://www.aopa.org/training-and-safety/students/presolo/skills/avoiding-midair-collisions
- FAA Advisory Circular
  - https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_90-48E.pdf
- FAA Safety Team
  - https://www.faasafety.gov/default.aspx
- FAA Outreach Program
  - https://www.faa.gov/about/initiatives/gasafetyoutreach

THIS IS NOT A SOURCE DOCUMENT FOR FLIGHT OPERATIONS. ALL AIRCREWS ARE RESPONSIBLE FOR CHECKING CURRENT FLIGHT INFORMATION, PUBLICATIONS, DIRECTIVES, AND NOTAMS FOR CURRENT INFORMATION. CHARTS ARE NOT FOR NAVIGATION PURPOSES.

Fly Safe!

Joint Base Elmendorf-Richardson



U.S. AIR FORCE