

FREQUENCY REFERENCE GUIDE

Fairchild AFB

ATIS	257.625 UHF
Ground	123.6
Tower	120.35
Spokane Approach	123.75 / 133.35

Spokane International (Geiger Field)

ATIS	124.325
CLNC DEL	127.55
Ground	121.9
Tower	118.3
Approach (West)	123.75
Approach (East)	133.35

Felts Field

ATIS	120.55
Ground	121.7
Tower (CTAF)	132.5
Spokane Approach	133.35
Unicom	122.95
Mead CTAF	122.9
Deer Park CTAF	122.8

**92d AIR REFUELING WING
SAFETY OFFICE
FAIRCHILD AIR FORCE BASE
WASHINGTON
(509) 247-4736**

MID AIR



COLLISION AVOIDANCE

FLY SAFE

FLY SMART



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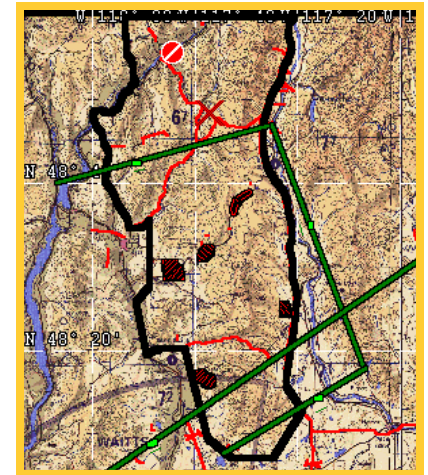
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LOW LEVEL AREAS

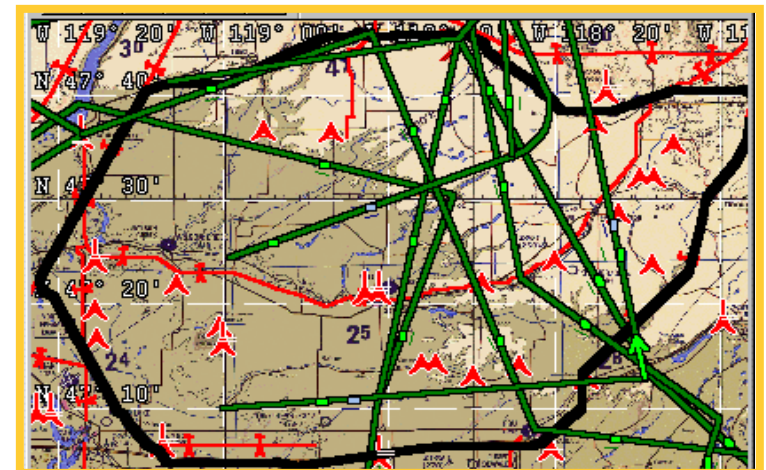
Normal UH-1N cruise altitude and airspeed is 500 ft AGL and 90 kts. The Huey can fly as high as 10,000 ft MSL, but this is mainly for parachute drops.

The 36 RQF has two Low Level Areas (LLA) where pilots fly as low as 50 ft AGL. These areas are depicted on the following maps by the thick black lines.

The Northern LLA is bounded by the Columbia River (West), Priest Lake (East), and Canada (North).



The Western LLA is bounded by Ephrata/Moses Lake (West), Wilbur/Creston/Davenport (North), and Highway 90



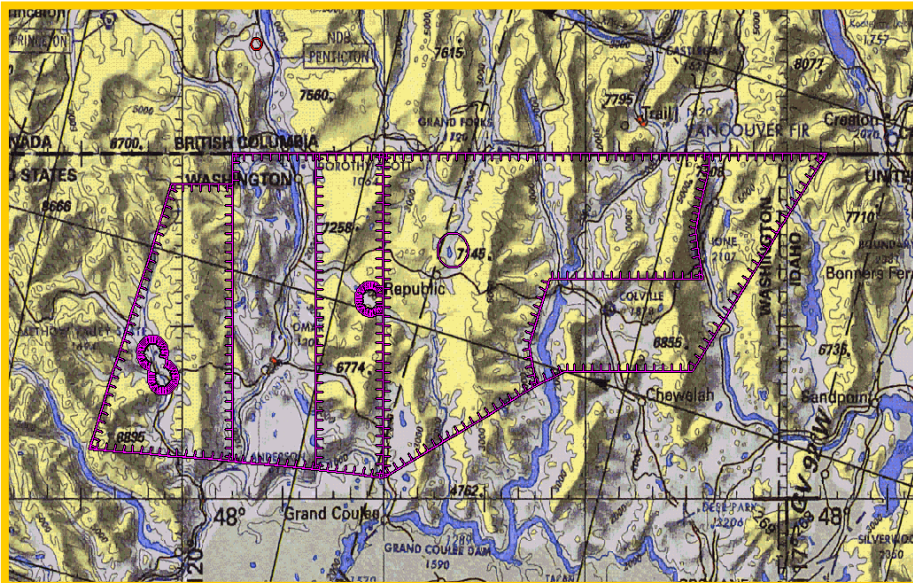
MILITARY OPERATING AREAS

Roosevelt & Okanogan MOAs

Military Operating Areas are established to facilitate specialized training. Examples of such training are air combat tactics, air intercepts, aerobatics, formation flying, low altitude tactics.

Military pilots flying in an active MOA are exempt from the provisions of 14CFR 91.303 which prohibits aerobatic flight within Class D and E airspace. The Department of Defense has issued an authorization to operate aircraft in excess of 250 KIAS below 10,000 feet MSL within an active MOA.

Pilots operating under VFR should exercise extreme caution while flying within a MOA while military activity is being conducted. Pilots should contact any FSS within 100 NM of the area to obtain real-time information concerning the MOA's hours of operation. Prior to entering an active MOA, pilots should contact the controlling agency for traffic advisories.



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 92D AIR REFUELING WING
(AMC)
FAIRCHILD AIR FORCE BASE WASHINGTON

MEMORANDUM FOR INLAND NORTHWEST AVIATORS

FROM: 92 ARW/CC

SUBJECT: Mid-Air Collision Avoidance

1. Safe mission accomplishment is my number one goal. The men and women of Fairchild Air Force Base are dedicated to honing their combat skills to meet the demands of current and future military challenges. We can only perform our mission by safely sharing the airspace in and around the Inland Northwest.
2. As fellow aviators, we have a duty to see and avoid each other while we enjoy the rewards of flight. We have all witnessed the increase in air traffic over the past several years. Information sharing, vigilant flight planning, and an open dialogue are our best defenses against flight mishaps, both military and civilian. This brochure highlights our high traffic operations areas and the military aircraft commonly operating in the local area. Please review this information and consider the potential impacts in your flight planning. It is our goal to ensure everyone departs and lands safely.
3. If you have any questions or comments, please contact the 92d Air Refueling Wing Flight Safety Office at (509) 247-4736. Fly Safe and Fly Smart.

//SIGNED//
PAUL H. GUEMMER
Colonel, USAF
Commander

INTRODUCTION

To All Fellow Aviators:

Fairchild AFB and the surrounding area is host to a variety of aviation activities. Military training, commercial airline operations, parachute jumping and general aviation all take place within a relatively small volume of airspace. It is every pilot's responsibility to be aware of the hazards that exist in this environment and to do all they can to minimize risks.

Please read through this guide and take a moment to think about the type of flying you do and how it fits into the "big picture" of air traffic operations in the Spokane area. The Fairchild AFB Flight Safety Office designed this guide to highlight potentially hazardous areas of operation and to provide both civil and military pilots a common knowledge base.

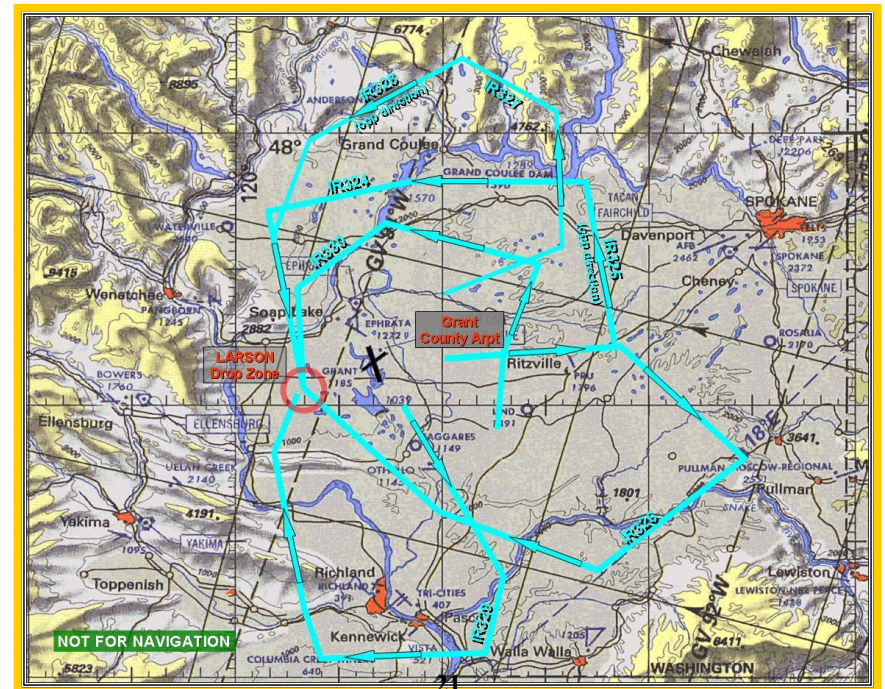
Please refer any questions or comments about the enclosed information to the Fairchild AFB Flight Safety Office at (509) 247-4736. The information contained in this guide is current as of February 2012. This pamphlet will be updated annually.

**This pamphlet is only for information.
It is not regulatory in nature.**

MILITARY TRAINING ROUTES

Military Training Routes (MTRs) are established below 10,000 ft MSL for operations at speeds in excess of 250 kts. On IR routes, flight operations are conducted in accordance with IFR regardless of weather conditions. On VR routes, flight operations are conducted in accordance with VFR except flight visibility shall be 5 miles or more. Flight on VR routes will not be conducted with a ceiling less than 3,000 feet AGL.

MTRs with no segment above 1,500 feet AGL have a four digit identification numbers. MTRs with one or more segments above 1,500 feet AGL have three digit identification numbers. Non-participating aircraft are not prohibited from flying within a MTR; however, extreme vigilance should be exercised. If you must cross an IR/VR route, cross directly perpendicular to the route path, minimizing your exposure time while maximizing your visibility to MTR aircraft. Common IR routes are shown below.



MILITARY AIRCRAFT CONTINUED

BELL UH-1 HUEY

- Up to 10,500 lbs Gross Weight
- Speed 0 to 120 KIAS
- Green Color Scheme
- Downwash in Hover
- No TCAS
- UHF Radio



UH-60 BLACKHAWK

- Up to 24,500 lbs Gross Weight
- Speed 0 to 159 KIAS
- Black Color Scheme
- Downwash in Hover
- No TCAS
- UHF Radio



P-3 ORION

- Up to 135,000 lbs Gross Weight
- Speed 120 to 330 KIAS
- Light Grey Color Scheme
- TCAS Equipped
- VHF/UHF Equipped

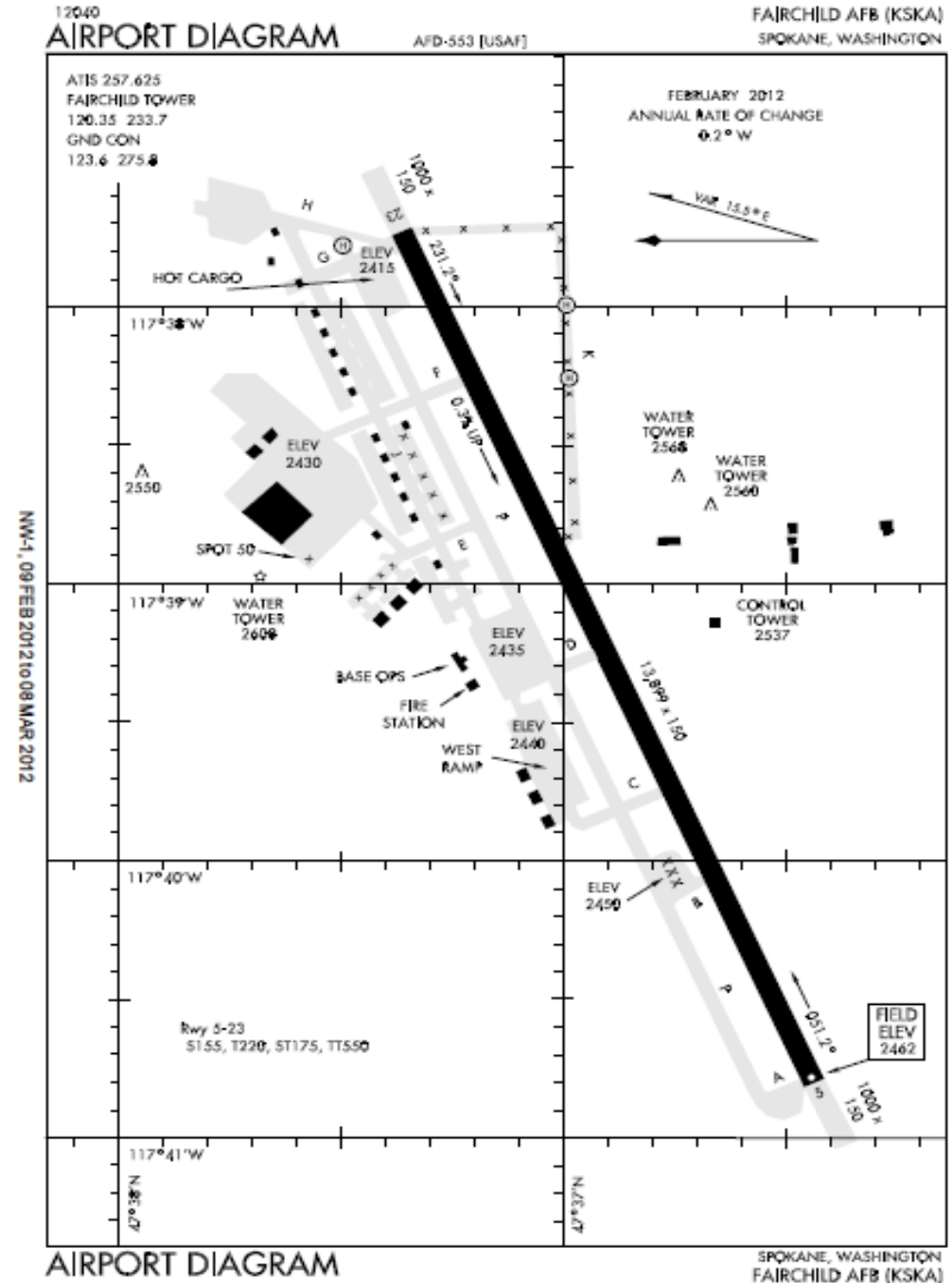


EF-18G GROWLER

- Up to 66,000 lbs Gross Weight
- Speed 120 to 450 KIAS, up to 1.8M+
- Light Grey Color Scheme
- No TCAS
- VHF/UHF Equipped



AIRFIELD DIAGRAM



FAIRCHILD AFB, WA

Fairchild Air Force Base is the home to the 92d Air Refueling Wing, the 141st Air Refueling Wing (Air National Guard), the 36th Rescue Flight and the Army Aviation Support Flight-2. Both wings operate the same versions of the Boeing KC-135 “Stratotanker.” The 36th Rescue Flight operates the Bell UH-1 “Huey” helicopter. The Army operates the UH-60. The 141st ARW also operates the Fairchild C-26B Metroliner.

Fairchild AFB is located in **CLASS C** airspace, shared with Spokane International Airport. Due to the close proximity of the two major airfields, aircraft movement into and out of these locations must be accomplished with extra vigilance. Fairchild AFB has a single runway measuring 13,899 feet long and 150 feet wide. It is designated with the markings 5 and 23. Operations are primarily conducted on Runway 23, to minimize exposure to traffic from Spokane International Airport.

Spokane Approach maintains radar control for IFR traffic from Fairchild AFB and Spokane International Airport. Fairchild AFB aircraft normally communicate with Spokane Approach and Fairchild Tower using VHF frequencies.

MILITARY AIRCRAFT COMMONLY OPERATING out of FAIRCHILD AFB

K/C-135R/T STRATO-TANKER

- Boeing 707 Variant
- Up to 320,000 lbs Gross Weight
- Designated “Heavy” Aircraft
- Speeds 150 to 350 KIAS
- Medium Grey Color Scheme
- VHF & UHF Radios
- TCAS Equipped



C-17 GLOBEMASTER III

- Up to 580,000 lbs Gross Weight
- Designated “Heavy” Aircraft
- Speeds 100 to 300 KIAS
- Medium Grey Color Scheme
- VHF & UHF Radios
- TCAS Equipped



EA-6B PROWLER

- Up to 61,000 lbs Gross Weight
- Speeds 150 KIAS to 0.98 Mach
- Medium Grey Color Scheme
- Travels in 2 to 4 Ship Formation
- Military Training Route Flight
 - 500 to 1500 ft AGL
 - 420 kts Ground Speed



C-26B METROLINER

- Up to 16,500 lbs Gross Weight
- Speeds 100 KIAS to 220 KIAS
- White Color Scheme
- Flies from Spokane IAP
- Flies from Fairchild AFB
- VHF/UHF Equipped

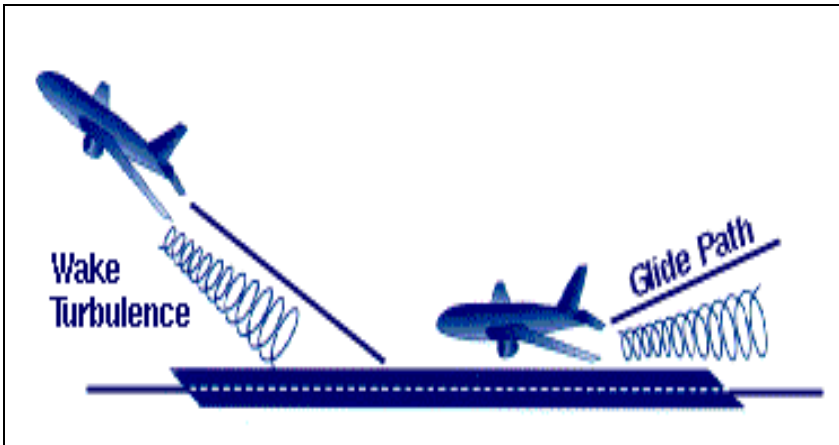


FAIRCHILD AFB CLASS C ZONE

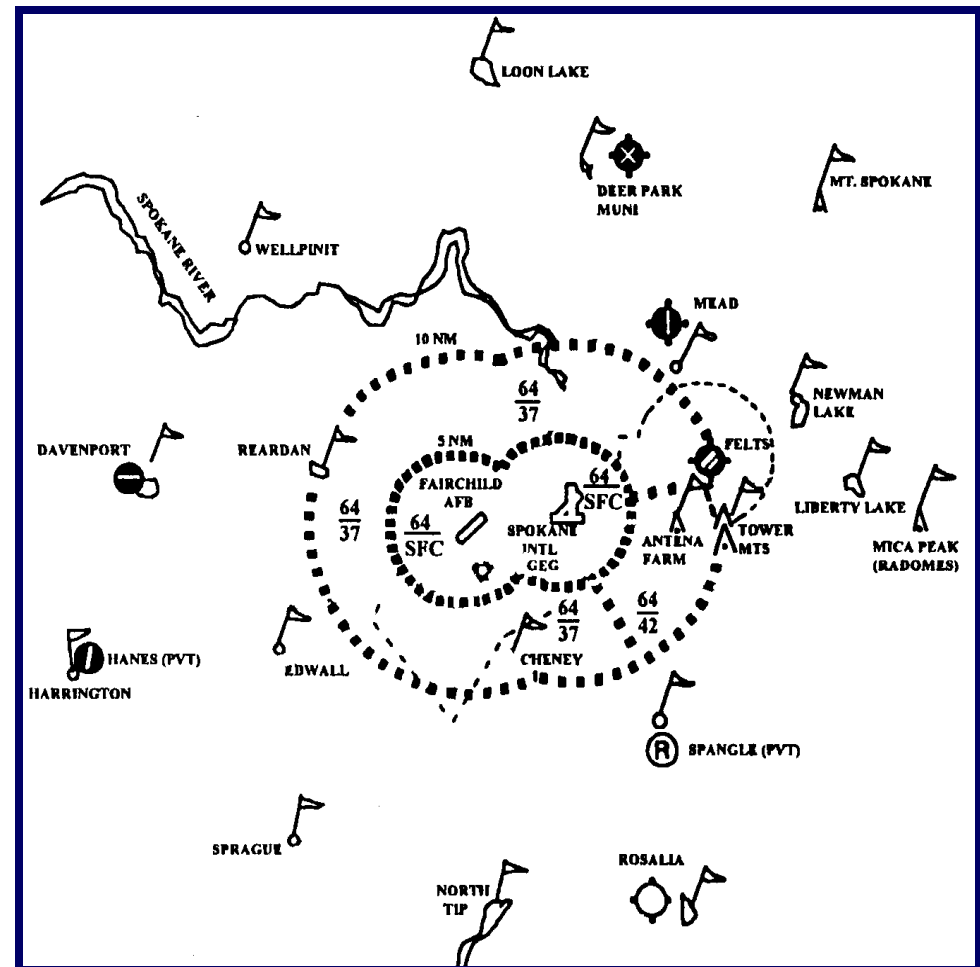
The following techniques will provide the safest wake turbulence avoidance when operating in the vicinity of large/heavy aircraft.

- **Landing behind a larger aircraft** - Stay at or above the larger aircraft's glide path and land beyond its touchdown point on the runway.
- **Landing behind a departing larger aircraft** - Land well prior to the larger aircraft's rotation point.

3. Departing behind a departing larger aircraft- Rotate prior to the larger aircraft's rotation point and climb out



- Surface to and including 6400' MSL within a 5 NM radius
- 3700' MSL up to and including 6400' MSL within a 10 NM radius
- Excludes Spokane International Airport Class C airspace
- Spokane Approach is the controlling agency for both Class C airspaces



FAIRCHILD AFB PATTERN INFORMATION

RADAR PATTERN

Radar pattern normally flown at 5,000 ft MSL.

Base turns are normally flown at 4,000 ft MSL until intercepting the glide path.

Radar pattern typically flown at 180-220 KIAS.

Radar pattern base legs tend to be tight.

VFR PATTERN

VFR pattern normally flown at 3,700 ft MSL.

VFR pattern is typically flown at 180 KIAS.

Break turn is Northwest regardless of active runway.

Aircraft maintain at or below 3,700 ft MSL until departure end of runway.

INITIAL

Initial altitude is 4,200 ft MSL.

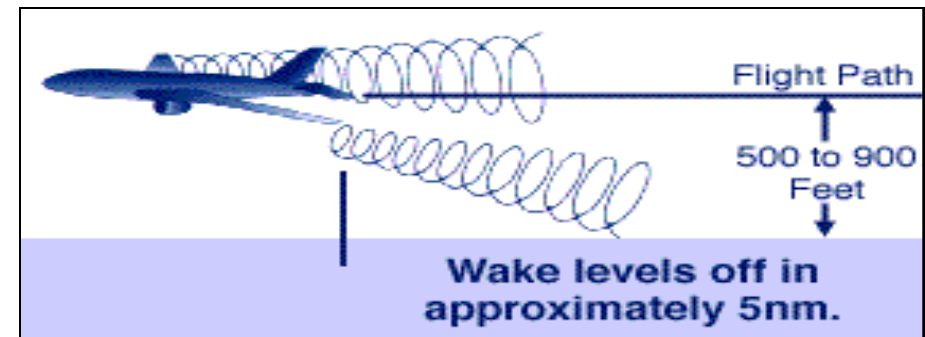
Initial is flown at 250 KIAS.

It is a VFR maneuver.

WAKE TURBULENCE

There is an area of potential disaster behind and below every commercial and military aircraft. Wake turbulence can be deadly, especially when it is encountered close to the ground. Remember that wake turbulence can be so severe as to cause loss of aircraft control or catastrophic structural failure. The KC-135 is designated a “Heavy” aircraft. The following time and distance intervals should be maintained to ensure safe flight.

- Takeoff behind a heavy from the same threshold or on a crossing runway where projected flight paths will cross:
2 minutes
- Takeoff behind a heavy from an intersection of the same runway or in the opposite direction on the same runway:
3 minutes
- When operating directly behind a heavy jet at the same altitude or less than 1000’ below:
Small/Large aircraft behind a heavy jet – 5 miles
- During the landing phase:
Small aircraft landing behind a heavy jet – 6 miles



TIPS FOR IMPROVING YOUR ABILITY TO BE SEEN

FLY WITH AN OPERABLE MODE 3

After a tragic accident, the FAA mandated Traffic Collision Avoidance Systems (TCAS) to be adopted by all air carriers. If you are flying VFR, squawk 1200. This allows other aircraft with TCAS to see you electronically.

INSURE AIRCRAFT LIGHTING IS ON

Anything you can do to enhance contrast and luminance, improves your ability to be seen. Strobe lights, normal lighting, and landing lights all will make your aircraft easier to see day or night.

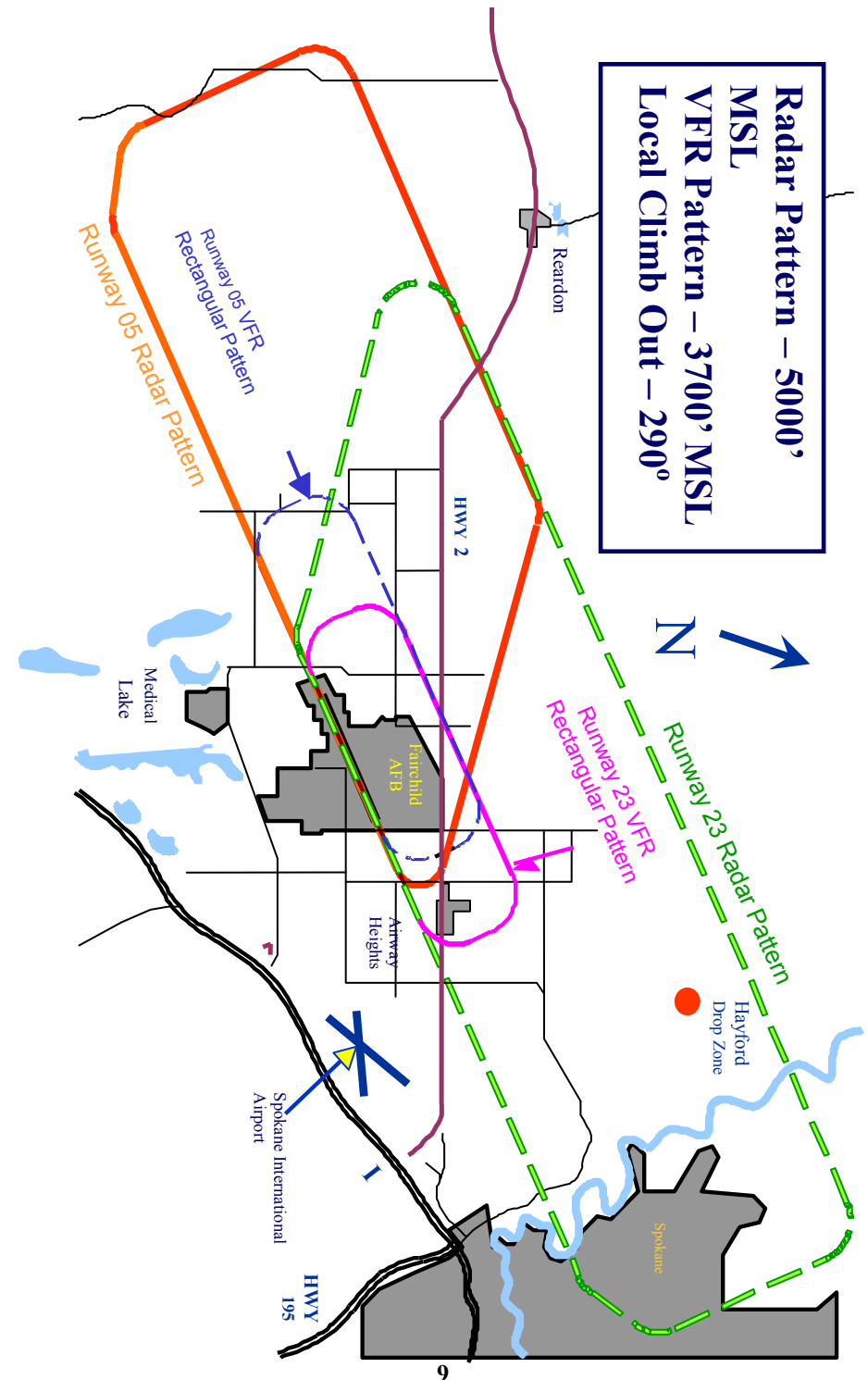
TALK TO ATC

By transmitting to Air Traffic Control, you are announcing your presence. Other aircraft will know to look for you and can help prevent a collision.

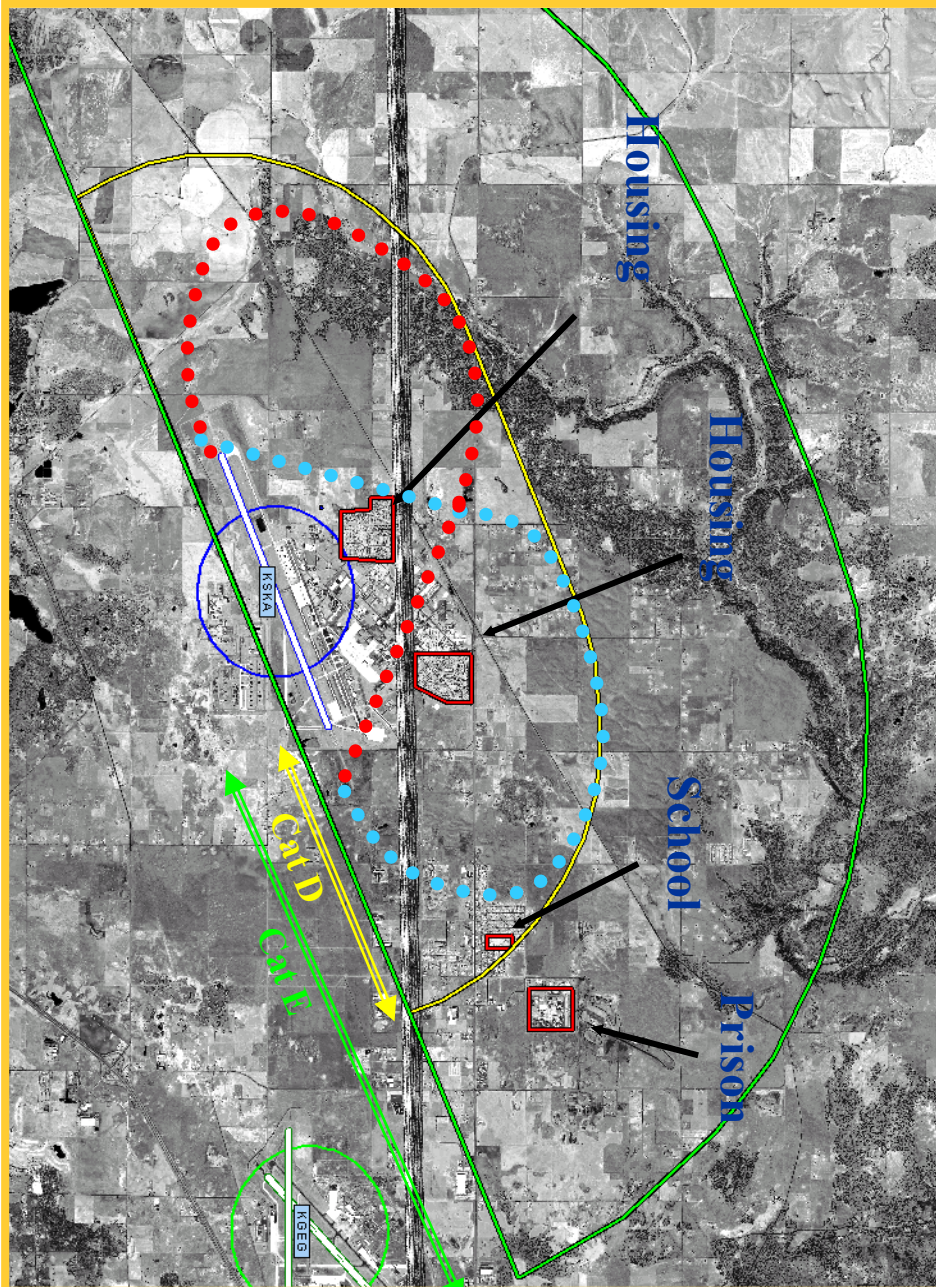
BLOCK SCAN TECHNIQUE

Break the total field of view into separate sectors of approx. 10° for each area. When you scan each individual area, move your eyes from left to right, just like reading. Your eyes and mind are conditioned to collect and analyze visual information in this manner. Fixate on each area for approx. 10 seconds. It takes your eyes 1-2 seconds to focus, giving you 8 seconds of usable scan. You also limit the scan to prevent fixation or having your eyes focus to infinity. If you feel your eyes are off focus, pick a visual reference outside the cockpit, focus your eyes on that and then start your scan again.

The greater the relative movement the easier it is to see a target. The less relative motion the harder it is to see. The problem is another aircraft that has NO relative motion, but getting bigger is on a collision course!



CIRCLING APPROACHES AT FAIRCHILD AIR FORCE BASE



TIPS FOR IMPROVING YOUR ABILITY TO SEE

CLEAN WINDOWS

While this might seem to be self-evident, ensuring an unobstructed field of view is critical to clearing. Foreign material on the windows can block visual cues, delay recognition and affect your eyes ability to focus on distant targets.

FIGHT COMPLACENCY

Just because you have flown the route of flight numerous times before, don't assume it will be the same as the previous sortie. Weather conditions, environmental conditions and traffic loads all will change. These will all impact your ability to clear and protect yourself from a hazardous situation.

DON'T USE WHITE LIGHTS AT NIGHT

It takes up to 30 minute for your eye to adjust to night time conditions. This adaptation can be ruined in a matter of seconds if exposed to white light.

UNDERSTAND EYE LIMITATIONS

In order to see effectively you must exploit the 6 factors for visual detection and understand each category's limitations. The eye senses objects differently during the day than at night.

MAKE CLEARING TURNS

One advantage of being a pilot is being able to turn the aircraft where you want it, in addition to moving your head. This has the added benefit of changing your aspect angle for other pilots, thus enhancing your ability to be seen.

LISTEN ON THE RADIO

Building situational awareness by listening on the radio is another avenue to "see" other traffic.

6 FACTORS FOR VISUAL DETECTION

MOTION

Against a stationary irregular background, an aircraft needs only a few minutes of arc-per-second motion to be detectable. Against a featureless background, like a cloudless sky, an object's perceived motion must be 10 times faster for visual acquisition.

EXPOSURE TIME

An aircraft that darts in and out of clouds presents a special challenge to the viewer. When not continuously exposed to view, the pilot has to judge speed and direction in order to track an object. Small, slow moving targets that present little contrast against its background can be easily lost during intermittent observation.

TIPS FOR IMPROVING YOUR ABILITY TO SEE

MISSION PLANNING

Taking time during mission planning to insure a complete route study, chart preparation, tagging approach plates, reviewing applicable NOTAMS and chair flying all reduce workload in the cockpit that frees up time for looking outside.

COCKPIT ORGANIZATION

This goes hand-in-hand with mission planning. An organized cockpit means you don't have to spend time heads down looking for charts, approach plates, programming GPS systems. This means you can spend time doing your job...flying and scanning!

FAIRCHILD AFB CIRCLING APPROACHES

The KC-135R is a Category D aircraft; however it may qualify for Category E minima. The circling ground tracks are shown on the adjacent page. The red track shows an approach to Runway 23, circling to land Runway 05. The blue track shows an approach to Runway 05, circling to land Runway 23.

HAYFORD DROP ZONE

Location: GEG 340/012
Size: 1/2 mile Diameter
Altitude: SFC to 10,000 ft MSL
Active: Wed 1530L to 1630L
Thu 1300L to 1500L
Activated by NOTAM

Check NOTAMS

Call Spokane Approach 123.75 or 133.35

Call Fairchild Tower 126.2

SPOKANE INTERNATIONAL AIRPORT

Spokane International Airport is approximately 5 miles northeast of Fairchild AFB. Instrument approaches are flown to both fields, day and night. Spokane Approach Control is the IFR controlling agency for both fields. KC-135 aircraft fly touch and go's to both runways. Spokane is used as an alternate airport when Fairchild's runway is closed. Be extra vigilant for traffic operating from 4,000 ft to 5,000 ft MSL in the radar pattern. Fairchild AFB is often mistaken for Spokane IAP. Although both fields have runway centerline lighting, Fairchild has the longer runway. Make sure you land where you are intending!

MID-AIR COLLISION AVOIDANCE



When do Mid-Air Collisions Occur?

(Source: AOPA Safety Advisor, Operations & Proficiency No. 4, 2004)

It occurs during all phases of flight.

The majority (75%) of mid-air events on approach, descent and final occur over or near the runway.

The vast majority (88%) of mid-air events occur in VMC conditions.

The leading cause according to the National Transportation Safety Board is “*Inattention on the part of the aircrews.*”

There has been no decrease in mid-air collisions over time, they occur, on average, 13 times a year.

MYTH-BUSTER FACTOID:

Head-on collisions are rare and have the *least* probability of occurrence.

6 FACTORS FOR VISUAL DETECTION

IMAGE SIZE

Aircraft detection is different depending on day or night. During the day, the further the object falls from the fovea (the center of the eye), the larger the image must be in order to be noticed. At night, detection is sometimes superior if the target is on the peripheral retina (i.e. off-center), rather than the Fovea.

LUMINANCE

The brightness of an object itself is one factor in determining whether or not an object is detectable. A neon-orange paint job has greater luminance than a dull grey paint job. Reflectivity is another way to think about luminance.

CONTRAST

While luminance is based on the object, contrast is the difference between the object and the background environment. A white Cessna might be easy to spot flying over evergreen forests. The same aircraft would be nearly invisible flying over ice or snow.

ADAPTATION

The eye requires at least 30 minutes to adjust to darkness. Even a brief exposure to white light can destroy your night vision. This will make it harder to acquire and track targets at night. Conversely, eyes need time to adjust to bright light too. Using appropriate vision aids (sunglasses for days, red lights for night) will help preserve your adaptation to the flight environment.