Nevada Air National Guard

MID-AIR COLLISION AVOIDANCE (MACA)

APR 2014

Let's Not Meet By Accident!

INTRODUCTION

Midair Collision Avoidance (MACA) is an extremely important topic with military and civilian aviation. The U.S. Air Force is committed to working with the civilian aviation community to make our skies safe. This pamphlet was created as a source of information to inform civil aviation pilots about the mission of the Nevada Air National Guard C-130's operating out of the Reno/Tahoe IAP, our training routes, traffic patterns, and arrival/departure routes. It should also serve as a guide to advise civil aviators about military air operations at Reno/Tahoe IAP and our local area. We hope to heighten awareness and reduce the potential for midair collisions in our busy sky. 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.

AIRCRAFT

The Nevada Air National Guard flies the C130H usually under the call sign "Roler". The C130 dimensions are; 97 feet long, 132 foot wing span, four 4000 horsepower turbo-prop engines, weighing from 100,000 to 150,000 pounds.

MISSION

Part of our mission is training and maintaining currency, allowing us to provide combat theater airlift in support of U.S. interests worldwide. We do this by flying VFR low-level (300-500 feet AGL) routes. This is necessary to keep our aircrews trained in the event we are called upon for combat operations. We fly low to minimize our radar signature and avoid unfriendly aircraft.

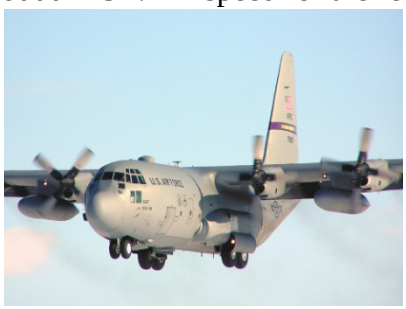
GROUND FACILITIES AND OPERATIONS

The Nevada ANG is located on the West side of the Reno Tahoe International Airport. Because of the proximity to numerous small aircraft, taxi operations should be conducted with extreme caution. C-130 run-ups present a potential hazard to light aircraft. The diagram on the following pages indicates danger areas associated with the C-130 and the velocity of the prop blast associated with an aircraft under power. Occasionally, up to 6 aircraft will be taxiing in formation. The wake from this formation could prove hazardous and should be avoided.

AIRPORT OPERATIONS

Although the Nevada ANG conducts most of its training away from the Reno Tahoe International Airport, several items pertaining to local area operations might prove helpful to general aviation operators. Tactical VFR recoveries are normally conducted when returning as a formation to Reno Tahoe International Airport. This recovery requires an overhead approach. Initial is generally set up approximately 5 miles from the field at 8500 MSL and descending to

6000 MSL. Airspeed for the formation is 200 Kts IAS. As each aircraft passes over the approach end of the landing runway, the pilot will establish a 45 degree left or right bank and complete an overhead approach and landing. Regulations require that all aircraft use the entire length of the runway for stopping. The C-130 and especially a large formation of C-130s leave a great deal of prop wash in the vicinity of the runway, so beware. During normal landings, the C-130 can slow its approach speed to almost 125 KIAS (depending on gross



weight) so as to fit into the flow of traffic. Formation departures are conducted from Reno Tahoe International Airport. All aircraft in the formation will position on the runway prior to any aircraft taking off. Takeoff interval is 15 seconds. Again, light aircraft operators should be cautious of wake turbulence generated by the C-130s.

TACTICAL OPERATIONS

As an airlift wing, the Nevada ANG conducts, on a regular basis, tactical low level training. This training is conducted on low level routes in Nevada, and in Northern California. Aircraft depart Reno Tahoe International Airport generally to the South East at 9,500 Ft MSL and 210 Kts. The particular routing is either to Wagge intersection (which is over Washoe Lake) then an eastbound turn to Chime intersection (which is over the Silver Springs area) , or to the South on a 164 degree heading until 7200 feet MSL then a left turn to the east towards Wadsworth at which time the aircraft stay at 9,500 Ft MSL or descend to their enroute altitude and maintain 210 Kts (plus or minus 10-15 kts for timing control). The enroute altitude varies from 300 AGL to 9,500 Ft MSL. The route is continued until arriving at the Herlong Drop Zone at Amedee Army Airfield, Herlong, CA, at which time they will slow to approximately 130 Kts to complete their "air drops". After the drops are completed, the aircraft will either recover at Amedee Army Airfield using tactical recovery procedures as described above or return to Reno Tahoe International Airport. Throughout these tactical VFR missions, C-130 aircraft will be monitoring 292.3 UHF or the appropriate traffic advisory VHF frequency. The map attached shows the local flying area and the red arrows indicate the low altitude high traffic areas.

WAKE TURBULENCE

Wake turbulence is produced to some degree by all airplanes. A wing's lift causes a whirlpool or vortex to form behind the tip of each wing. The intensity of these vortices depends on the amount of lift being generated. When an aircraft is heavy, slow and clean (flaps and gear up), it generates the most wake turbulence. Tests have shown wake turbulence can reach vortex velocities of over 130 Kts. The vortex sinks 400-500 FPM until leveling off about 800-1000 Ft

below the airplane. At the present time, the only safe way to combat wake turbulence is to know and avoid areas where it is likely to be encountered. You should, therefore, avoid the area directly behind and below generating aircraft. Try to stay two or three minutes behind C-130's if you share the same traffic pattern and avoid the area 1 to 2 miles behind and 100 to 1500 feet below them.

COLLISION AVOIDANCE TIPS

1. Clear constantly for other aircraft, both visually and over the radios.
2. Know where high-density traffic areas are.
3. Obtain an IFR clearance or participate in radar flight following whenever possible and continue to practice “see and avoid” at all times.
4. Use landing lights at lower altitudes, especially when near airports.
5. Announce your intentions on UNICOM and use standard traffic pattern procedures at uncontrolled airfields… Be predictable!
6. Always use your Mode C transponder.
7. Use the appropriate hemispherical altitudes and don’t let your altitude “wander.”
8. Fly as high as possible.
9. Keep your windscreen clean. A bug on the windscreen can obstruct other airborne aircraft coming your way.
10. Don’t get complacent during instruction. Instructors make mistakes too. Many mid-air collisions occur during periods of instruction or supervision.
11. When flying at night, avoid white light in the cockpit. White light disrupts your night vision, even when used momentarily.
12. Beware of wake turbulence.
13. Understand the limitations of your eyes and use proper visual scanning techniques. If an aircraft appears too have no relative motion but is increasing in size, you are on a collision course.
14. Practice appropriate clearing procedures before and during all climbs, descents and turns.
15. Avoid complacency. SEE AND BE SEEN!

POINT OF CONTACT INFORMATION

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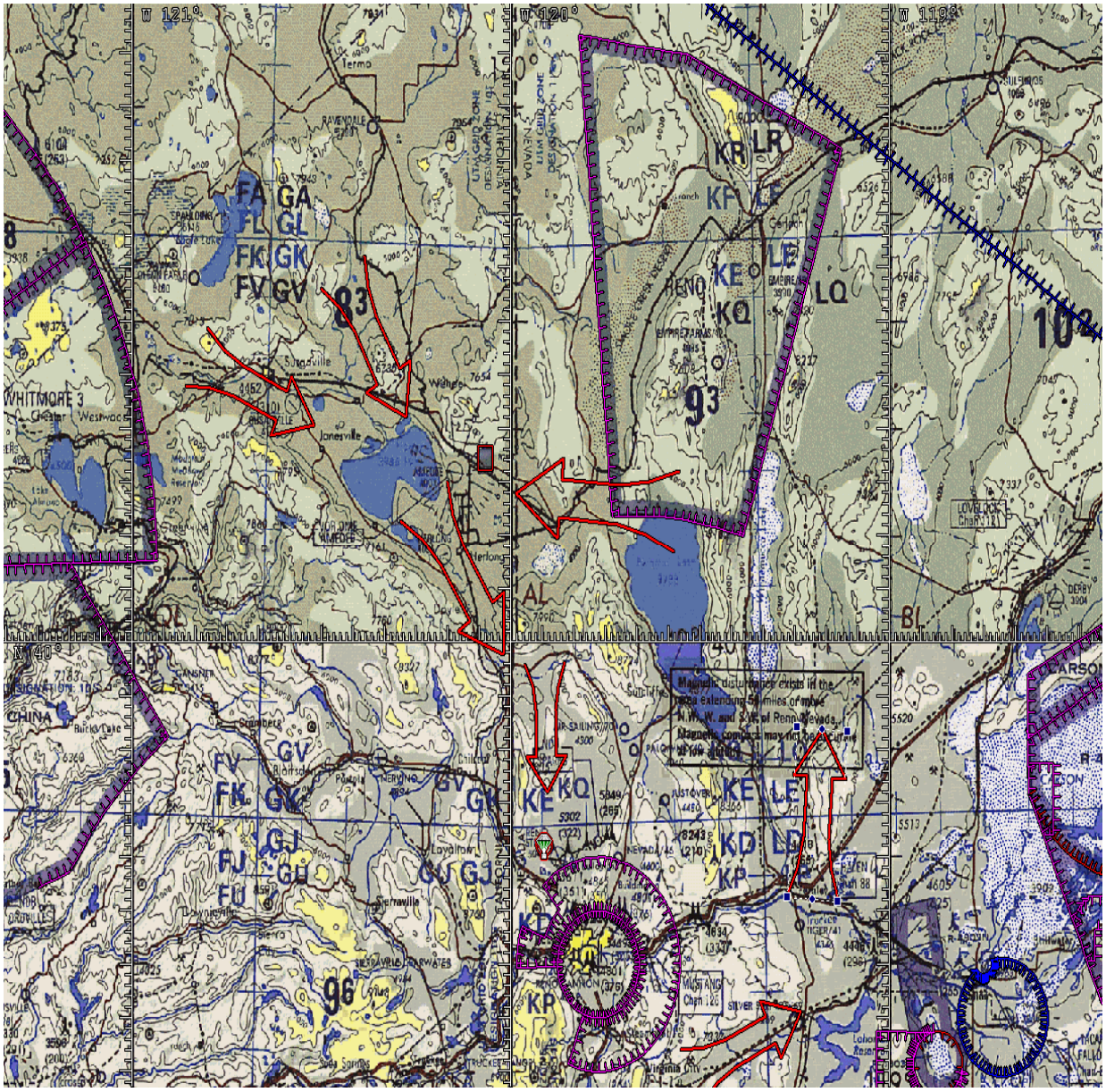
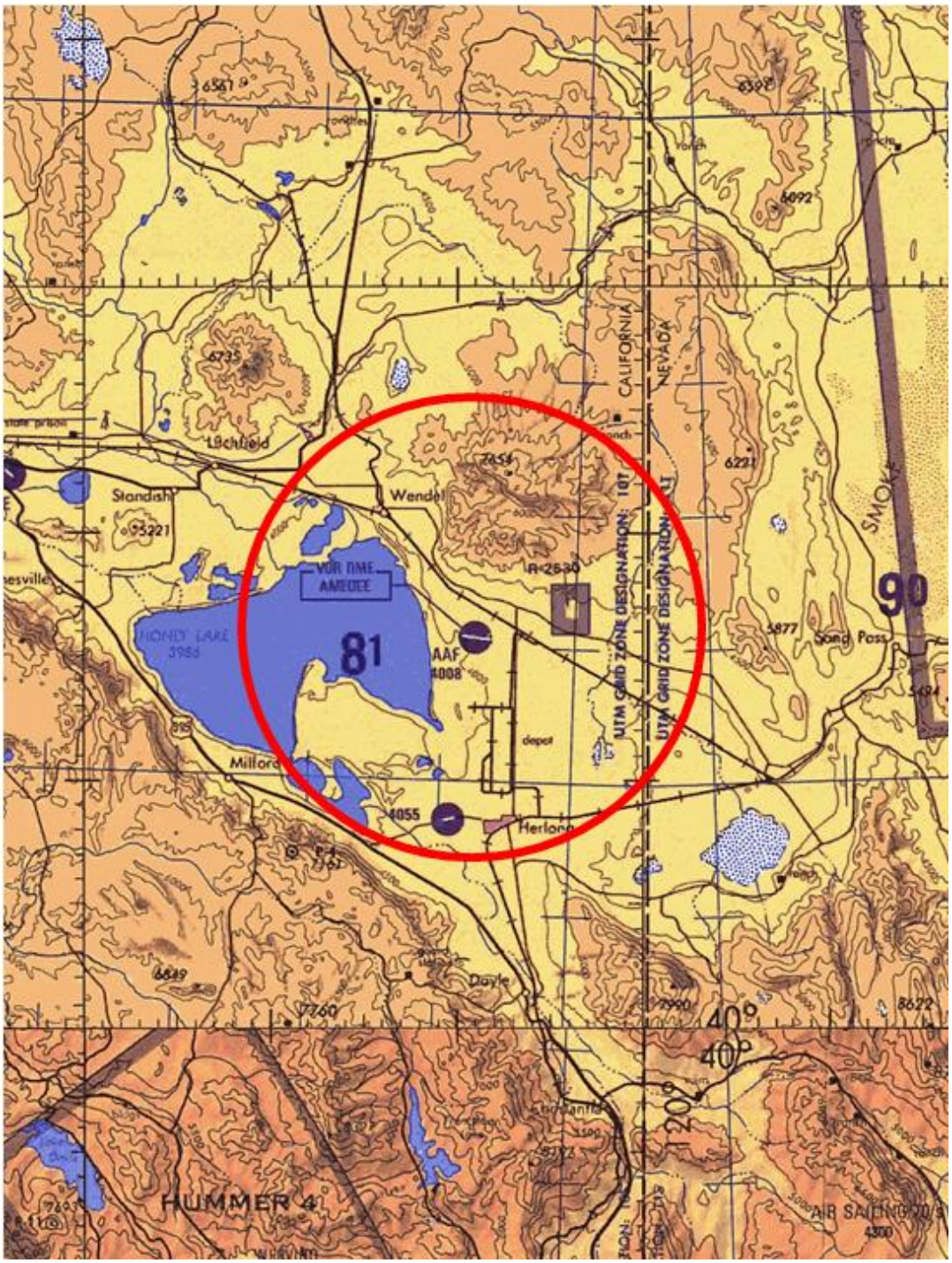


Low Altitude High Traffic areas



Amedee Drop Zone/Landing Zone
Herlong, California