Stan/Eval Newsletter

CIVIL AIR PATROL
UNITED STATES AIR FORCE AUXILIARY
105 S. Hansell Street
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Table of Contents

Why All Pilots Should Monitor 121.5 MHz (LtCol P. Kerr LAWG)
The aviation frequency 121.5 MHz, often referred to as the “Guard” frequency, is a critical tool for safety, communication, and emergency response in the skies. Despite the transition of emergency locator transmitter (ELT) distress signals to 406 MHz, 121.5 MHz remains an essential channel that all pilots should monitor.

Here’s why:

1. Emergency Assistance and Alerts
121.5 MHz is the designated international emergency frequency, used by pilots in distress to call for help. By monitoring this frequency, pilots can provide immediate assistance if they hear a distress call, relaying vital information to air traffic control (ATC) and search-and-rescue teams. In remote areas or non-radar environments, this can mean the difference between a successful rescue and a tragic outcome.

2. Lost or Misrouted Aircraft
Aviators occasionally find themselves lost or deviating from their intended flight path. ATC often attempts to contact these aircraft on their assigned frequency, but if unsuccessful, they will transmit on 121.5 MHz. Pilots monitoring the channel can relay instructions to the lost aircraft or notify ATC of their location, helping prevent airspace violations or potential collisions.

3. Unintended Radio Silence
When a pilot inadvertently switches to the wrong frequency, forgets to check in with ATC, or experiences a radio failure, 121.5 MHz serves as a backup. ATC will often try to reach a non-responsive aircraft on Guard, and monitoring pilots can help relay messages if needed.

4. Intercept Warnings and National Security
Aircraft that stray into restricted or controlled airspace may be intercepted by military or law enforcement aircraft. The first attempt to contact them is usually on 121.5 MHz. Pilots who fail to monitor Guard might miss these warnings, potentially escalating the situation. Keeping an ear on the frequency ensures that pilots can respond immediately to avoid a serious incident.

5. ELT Signals and Search-and-Rescue Support
Many aircraft still only have a 121.5 ELT. Although modern ELTs transmit on 406 MHz, they also transmit an auxiliary distress signal on 121.5 MHz. Pilots who monitor Guard can detect these signals, helping pinpoint the location of a crashed aircraft before search-and-rescue teams arrive. Reporting an ELT signal can save valuable time in an emergency.

6. Situational Awareness and Community Support
In addition to emergencies, monitoring 121.5 MHz allows pilots to stay connected to the broader aviation community. Hearing distress calls, intercept warnings, or lost aircraft communications can enhance situational awareness, improving overall flight safety. Pilots can also act as a relay between ATC and aircraft flying at lower altitudes or in areas with poor radio coverage.

Best Practices for Monitoring 121.5 MHz
• Use a secondary radio: If your aircraft has dual radios, dedicate one to 121.5 MHz while keeping the primary tuned to ATC or your operational frequency. My practice is to use the second radio ONLY to listen to AWOS/ATIS. When I've heard enough, if flip the frequency to Guard. This way I am always monitoring 121.5 or getting other critical information.
• Listen discreetly: Keep the volume low enough to avoid distraction but loud enough to hear potential emergency transmissions.
• Respond appropriately: If you hear a distress call or an ATC broadcast looking for an aircraft, assess whether you can assist. Do not transmit unless you can provide useful information.

Flight Discipline (LtCol J. Vallone NVWG)
Flight discipline is at the core of every Civil Air Patrol flying operation. It begins with mission preparation, knowing now the regs and procedures, studying the profiles, and showing up prepared to fly. One unprepared crewmember can jeopardize the success of the mission and risk loss of life.

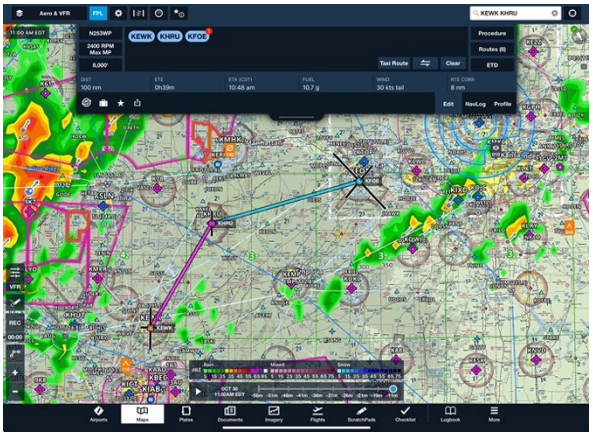
Flight discipline continues with the briefing. Be on time, be ready to discuss the mission and be ready to brief. Ensure all questions are answered and mission requirements are understood by everyone before the aircrew steps into the aircraft.

Flight discipline is demonstrated in the air by executing the mission as briefed according to CAP policies, regs and procedures from engine start to engine shutdown. No exceptions.

CAP flight discipline should be evaluated and specifically addressed during every mission debrief. Debriefs are a learning process for aircrews and mission base personnel.

All mission personnel contribute to the success of CAP missions. Remember safety and discipline are essential elements of our organization.

CAP and ForeFlight Useful Tips (B. Mouat, NHQ)
As most of you know, any CAP VFR Pilot (plus some others) may be entitled to request a CAP (USAF) funded subscription to ForeFlight. CAP uses the Military Flight Bag Performance plus version. This very powerful tool is ubiquitous across CAP and aviation in the US, and we now have over 5000 iPad/iPhone users in CAP.



The ForeFlight App is preloaded with all the CAP aircraft profiles (including weight and balance data) and a massive amount of other data, documents, training materials, etc. If you are going to fly a CAP aircraft, there is no need to build an aircraft profile. It's already there! And they are updated when needed.

If you are unsure of whether you qualify for a free subscription, just go to eServices and use the "What do I need" feature and search for VFR Pilot qualification - you will need your CAPID. This feature will list all the qualifications you need to complete to be eligible. Once you are a valid VFR pilot, you are eligible!

To request a ForeFlight account or to get information, go to the following link. Note that ForeFlight requires an iPad or iPhone but can also be accessed on a laptop or PC. No androids (yet).
https://www.gocivilairpatrol.com/programs/emergency-services/aircraft-operations/cap-foreflight

The following contacts may be useful to you:

- For adding, deleting or updating User Accounts and Aircraft Profiles use ForeFlight@capnhq.gov

- For adding, deleting or updating Aircraft Weight and Balance information use aircraftdata@capnhq.gov

For a list of frequently asked questions, just go to:
https://www.gocivilairpatrol.com/media/cms/FF_QandA_v1_f8f19854e0883.pdf

Enjoy the app!

Fasten your seatbelt!
All of us ensure we do a safety briefing before every flight. This is part of the CAP checklist found in every CAP aircraft. Many of us of us use the SAFETY acronym where the S reminds us to fasten our seatbelts. All that is good. But too often I've seen seat belts buckled but not tightened. Most flights, you don't notice. But if you hit turbulence, you quickly learn as your head hits the ceiling that just fastening your seatbelt isn't enough. You really need to pull it tight. This will greatly lessen your chances of you having a collision with the interior. I jokingly remind my crew that if you can still breathe, your seat belt is not tight enough.

An experienced pilot once told me of an experience he had near Andrews AFB when he was flying a C172. He hit some wake turbulence from an F16. It was bad enough that it deformed one of the wings slightly (yeah, a C172 is tougher than you think). But the airplane was completely controllable if a bit out of trim. What almost killed him however was his head hitting the interior of the aircraft rendering him semi-conscious. He was lucky and remained somewhat conscious although a bit groggy. I don't know how tight his seatbelt was, but you just don't know when you might hit some bad turbulence.

For those of you who do aerobatics, you may have had seatbelts where you have a ratchet to tighten up the seatbelt. We don't fly any aircraft with ratchets but make sure you and your crew are not just buckled but securely fastened. There will be time to breathe at the end of the flight.

Adjusting airspeeds for actual weight
Many airspeeds such as stall speed, maneuvering speed, and best glide are dependent on the weight of the aircraft. The POH will have these speeds for the maximum gross weight but not always for weights less than maximum. For example, if your checklist has an approach speed of 65 knots, it is probably only valid at gross weight or maximum landing weight. Using that speed when you are under gross (and most of the time you will be) results in excessive float and a longer landing distance than necessary. These airspeeds can be adjusted for the actual weight by multiplying them by the quantity SQRT [actual weight/gross weight] affectionately known as alpha. If you are computing landing speeds, replace gross weight with max landing weight. This multiplication must be done using calibrated airspeed (CAS) and not indicated airspeed (IAS). The procedure would be to take the particular airspeed of interest and convert it from IAS to CAS. Then multiply by alpha and convert the resulting airspeed back to IAS.

Alternate Static and Alternate Air
These are two terms you should be familiar with and understand for each aircraft you fly. They are excellent topics to review in preparation for a Form 5. They refer to two very different systems. An alternate static source refers to an alternate source of static pressure for the altimeter, airspeed indicator, and rate of climb indicator. It should be used if the primary static source becomes blocked for some reason (icing, clogged static port due to waxing of the a/c, or other cause). All of our Cessna aircraft have an alternate static source. Using an alternate static source usually means that the altimeter will read slightly higher than it should as the alternate source is in the cockpit which will have a slightly lower ambient pressure than the outside (and of course, we all know why?). Check your POH to see what correction factors should be applied to both altitude and airspeed. In a famous accident, a Boeing 757 was lost as all the static ports were covered

with tape for a wash and wax and not removed for flight. It was missed on preflight. As a result, the crew did not have reliable indications of either airspeed or altitude with fatal results.

Alternate air refers to a second source of air for the engine should the primary source become blocked (clogged air filter, induction icing, or a bird strike in the induction system). Our carbureted C172 and carbureted C182 aircraft do not have an alternate air system per se, but pulling the carb heat control provides an alternate source of air to the engine. Our fuel injected C172S and C182T aircraft have an alternate air system which will activate without pilot action. The C182T manual describes this as follows:

"CESSNA SECTION 7
MODEL 182T NAV III AIRPLANE AND SYSTEMS DESCRIPTION

AIR INDUCTION SYSTEM
The engine air induction system receives ram air through an intake on the lower front portion of the engine cowling. The intake is covered by an air filter which removes dust and other foreign matter from the induction air. Airflow passing through the filter enters an air box. The air box has one spring-loaded alternate air door. If the air induction filter should become blocked, suction created by the engine will open the door and draw unfiltered air from inside the lower cowl area. An open alternate air door will result in an approximate 10% power loss at full throttle. After passing through the air box, induction air enters a fuel lair control unit under the engine and is then ducted to the engine cylinders through intake manifold tubes."

Articles for the National Stan Eval Newsletter
These articles have been written to present ideas, techniques, and concepts of interest to CAP aircrews rather than provide any direction. The articles in this newsletter should in no way be considered CAP policy. We are always looking for brief articles of interest to CAP aircrews to include in this newsletter. CAP has many very experienced pilots and aircrew who have useful techniques, experiences, and tips to share. Please send your contribution to stephen.hertz@vawg.cap.gov You can view past issues here.