



STAN-EVAL NOTES
CIVIL AIR PATROL VIRGINIA WING
UNITED STATES AIR FORCE AUXILIARY
 7401 Airfield Drive
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Filing ICAO Flight Plans: Many pilots are questioning whether or not they need to file ICAO vice domestic flight plans based on some recent announcements by the FAA and various articles written in response to those announcements. The short answer is that for VAWG we should continue to file flight plans as before. ICAO flight plans are really only required for international flights and perhaps if using RVSM airspace, neither of which we do. There is also some confusion about access to RNAV DPs and arrivals. You will not be denied that service if you file a domestic flight plan.

ICAO flight plans differ from domestic flight plans in the level of detail. Even if you go to the trouble of filling out an ICAO flight plan for a domestic flight not using RSVM, most of that added detail won't even be transmitted to ATC. So for VAWG, filing an ICAO flight plan might be instructive, but it provides no real value added. If you just gotta file an ICAO flight plan, the complete instructions may be found at:

http://www.faa.gov/air_traffic/publications/atpubs/FSS/AppendixA.htm

Department of Transportation Federal Aviation Administration		International Flight Plan	
1 PRIORITY FF		2 ADDRESSES EHAZQEX EBURZQX EDDYZQX LFFFZQX LFRKZQX LFBBZQX LECMZQX LPCCZQX	
3 PLANS TIME 190836		4 ORIGINATOR EHAMZZX	
5 SPECIFIC IDENTIFICATION OF ADDRESSES AND/OR ORIGINATOR			
6 MESSAGE FPL	7 AIRCRAFT IDENTIFICATION ACF402	8 FLIGHT RULES I	9 TYPE OF FLIGHT N
10 NUMBER E1A30	11 TYPE OF AIRCRAFT E1A30	12 WAKE TURBULENCE CAT H	13 TO EQUIPMENT S/C
14 DEPARTURE AERODROME EHAM		15 TIME 0940	16 LEVEL 0830
17 GROUND SPEED F2901		18 ROUTE LEK 2B LEK UA6 XMM/MO78F330 UA6 PON URION CHW UAS NTS DCT 4611N00412W DCT STG UAS FTM FATIMIA	
19 DESTINATION AERODROME LPTT		20 TOTAL SET 0230	21 ALTR AERODROME LPRR
22 OTHER INFORMATION REG / FBVGA SEL / EJPL EET / LPCC0158			
23 SUPPLEMENTARY INFORMATION (NOT TO BE TRANSMITTED IN FPL MESSAGE)			
24 ENDURANCE 0345	25 PERSONS ON BOARD P300	26 EMERGENCY RADIO R/U V E	
27 SURVIVAL EQUIPMENT S / X	28 DITCHING D / J	29 LIGHT J / L	30 FLOODED F / X
31 CAPACITY J / J	32 COVER C / C	33 COLOUR YELLOW	
34 AIRCRAFT COLOUR AND MARKINGS A / WHITE			
35 REMARKS C / DENKE			
36 FILED BY AIR CHARTER INT.	37 ACCEPTED BY	38 ADDITIONAL INFORMATION	

Both DUAT and DUATS offer the ICAO format when filing a flight plan. FitPlan.com also offers an ICAO flight plan option but you will find that when you select ICAO, it defaults to the domestic flight plan unless you are going international.

Winter is Coming: Summer has ended and fall will soon be over. It's time to think about winter flying. Winter flying can bring enhanced performance to our fleet because of the very low density altitude. Takeoff runs will be shorter and climbs will be faster. Here are some points to consider when flying in cold weather.

- Trying to do a leisurely and careful preflight in the biting wind and cold is a challenge. Dress warmly and take no shortcuts. It's also important to dress warmly in case of an off-airport landing ("dress to egress!"). Pilots often assume the trip will be in a nice warm airplane only to find they are facing a long freezing hike through inhospitable terrain. Make sure your crew dresses warmly as well.
- Although we should always do a thorough preflight, cold weather means that some items get special attention. Checking that the pitot heat works in the middle of summer is probably not important unless you fly in the flight levels, but it's critical during cold weather. Because the days are short, ensuring that lights work is also important. Check to be sure that the CO₂ detectors are not expired. Look for any signs of cracking or leaks in the exhaust system.
- In flight it's important to check for any signs of CO₂ poisoning. All VAWG aircraft have CO₂ detectors that should be checked and monitored in flight. But sometimes your body can detect CO₂ poisoning before any detector. Be alert for signs of poisoning in any of your crew. Headaches, nausea, and general feelings of ill health are a possible sign of CO₂ poisoning. Open a window and turn off the heat to see if the symptoms go away.
- When the temperature is below freezing you need to pre-heat the engine unless the engine is already warm (from a previous flight, or the airplane was just in a hangar). Preheat doesn't heat everything so starting will strain the starter. Be vigilant for any signs of starter stress. Cold weather also saps battery strength. So you usually are not only trying to turn over an engine with very thick oil but you are doing it with fewer amps available. Pre-heating doesn't do anything for your electronics so expect them to come up slowly. Engine pre-heats and deicing can be expensive. If you are fortunate to be on a funded mission, both of these items are legitimate expenses that can go on the VAWG credit card. If this is a self funded flight, there is no reimbursement so consider that before heading out to the airport.
- Frost must be removed from all flying surfaces before flight. Previously, the FAA advised that it was okay to fly a plane with frost as long as the surface was polished. Not anymore. Experience has shown that any frost on flying surfaces is a safety hazard and must be removed. Here in Virginia, frost can be an early morning problem but gone once the sun comes up. In that case, removing frost just takes some waiting. It can also help to reposition the aircraft so that the sunlight is most effective. For days where waiting isn't going to remove the frost, one needs deicing to get rid of it. If it's light frost, you can get a can of deicer from you local auto store and spray it on. But be sure the frost is really gone. The auto deicing fluid is ineffective for anything other than light frost.
- Soft snow can be brushed off with a broom or other soft apparatus. But be careful as carelessness can scratch paint. Even with the snow removed, it may take some time in the sun to remove all traces of snow. It's a good practice to brush snow off right after it accumulates even if you are not going flying soon. This takes the weight off the tail and allows more time for the sun to do its work. Check carefully to make sure that snow was not brushed into mechanical assemblies that could cause controllability problems. If the snow is heavy and icy, you will risk damaging the paint or even mechanical assemblies if you try to remove it. You could order deice or just go home.
- Ice is not just a problem on flying surfaces. Frozen water in control linkages or other mechanical assemblies is an accident waiting to happen. Ice can get into enclosures that you can't see. Recently some Citation jets had controllability problems when ice built up in the tail cone and started interfering with elevator control. The best way to get rid of ice is to get the a/c somewhere warm so it will melt. But be sure everything is dry before you take the aircraft out again or you will have just refrozen water in hard-to-get places. If you don't have access to a warm hangar, deicing is your only option.
- Turn on your pitot heat anytime the outside temperature is below 40 degrees Fahrenheit. This ensures that you don't lose your airspeed indicator. This is especially critical if you are IMC but it's good practice in VFR as well as there could be moisture already in the pitot tube.
- Taxing, takeoff, and landing on icy surfaces can be challenging or even impossible. Snow or ice on taxiways and runways may mean cancelling a flight even after the snowplows do their job. For taxiing,

takeoff, and landing in a cross wind can cause loss of control due to the slick conditions. Make sure your controls are set to counteract the wind. Your tires may not provide much tracking at all. Landing can be problematic as there may be little or no braking. Even if flight is possible, you will find that the ordinarily smooth runway is now very rough due to the snow and ice. The cross wind limit on most of our aircraft is 15 knots, but that is not achievable on slippery surfaces. The published cross wind limit assumes dry pavement.

- Our CAP airplanes are not certified for flight in icing conditions and your preflight planning should ensure you don't go there. The best way to avoid icing is to stay in above freezing temperatures. That's not always practical but should be the objective. The ADDS website has some excellent resources to predict and avoid icing. And of course PIREPs can be helpful as well. But if in doubt, don't go! No CAP pilot should ever consider launching if there is any reasonable chance of icing in flight. If you do encounter unforeseen icing in the air, you need to deal with it immediately by exiting the icing conditions as quickly as possible (easier said than done). Anything more than trace icing is hazardous and trace icing may be a warning of things to come. Keep your airspeed up, don't use flaps, and ensure your pitot heat on. Turn the heat/defrost on full to keep your windscreen clear if possible. Consider carb heat if you suspect induction icing. Let ATC know and don't hesitate to declare an emergency. But remember, ATC can't fly the airplane, so aviate first. Inflight icing is extremely hazardous to small GA aircraft so the only approach is to ensure before you take off that there is no chance of icing. Otherwise, stay home.
- Your preflight planning should ensure you never encounter snow in flight. Flying in snow is IFR and poses a serious safety hazard. If the snow is dry, chances are you will not accumulate any ice but you need to exit the conditions as quickly as possible. If the snow is wet, you risk in-flight icing.
- In extremely cold conditions, your altimeter will be in error even if set properly. This is more of an issue in Canada than Virginia but when the temperature gets below zero degrees Fahrenheit, it is an issue. The following table indicates changes to approach minimums versus temperature.

Table 7-2-3
ICAO Cold Temperature Error Table

		Height Above Airport in Feet													
		200	300	400	500	600	700	800	900	1000	1500	2000	3000	4000	5000
Reported Temp °C	+10	10	10	10	10	20	20	20	20	20	30	40	60	80	90
	0	20	20	30	30	40	40	50	50	60	90	120	170	230	280
	-10	20	30	40	50	60	70	80	90	100	150	200	290	390	490
	-20	30	50	60	70	90	100	120	130	140	210	280	420	570	710
	-30	40	60	80	100	120	140	150	170	190	280	380	570	760	950
	-40	50	80	100	120	150	170	190	220	240	360	480	720	970	1210
	-50	60	90	120	150	180	210	240	270	300	450	590	890	1190	1500

Example: Temperature - 10 degrees Celsius, and the aircraft altitude is 1,000 feet above the airport elevation. The chart shows that the reported current altimeter setting may place the aircraft as much as 100 feet below the altitude indicated by the altimeter.

NOTE: Values are to be added to published altitudes.

Types of Altitudes: In our primary training we learned about different altitudes including absolute altitude and indicated altitudes. Absolute altitude above sea level is the altitude we are actually flying and can only really be

determined by getting out a measuring tape and measuring the height of the airplane from sea level (a little impractical). Indicated altitude is the altitude that our altimeter provides. In almost all cases indicated altitude is never equal to absolute (or true) altitude. The reason for this is that altimeters don't measure altitude but rather they measure barometric pressure. There is a relationship between barometric pressure and altitude if you know what the sea level barometric pressure is and the temperature. The Kollsman window allows us to compensate for different barometric pressures but there is no correction for temperature. Thus the difference.

In the world of GPS, we can actually come close to determining absolute altitude as most GPS units provide not only position but altitude as well. For WAAS receivers, the GPS altitude is very accurate but should not be used as a substitute for your altimeter except in an emergency (altimeter failure). You can compare this WAAS altitude (which will be very close to absolute altitude) and your indicated altitude to see what the differences are. However, in most cases you must fly by indicated altitude as that is what ATC expects.

When do I reset my Altimeter on Approaches? As we prepare to execute an approach at the end of an instrument flight, we listen to the ATIS (or AWOS/ASOS) and note the altimeter setting reported at the airport of intended landing. But we must not use that setting until we are established on the approach for the following reason. Vertical separation of traffic depends in part on every aircraft in a particular area having the same altimeter setting. For example, if aircraft one is at 3000 feet indicated and aircraft two is at 4000 feet indicated there will not be a collision between the two aircraft as they are separated by 1000 feet, but only if they are both using the same altimeter setting. It doesn't matter if the actual altitudes are somewhat different. If they are using the same altimeter setting, they will still have 1000 feet of separation (e.g. they might be at 4050 and 3050 but who cares?). That is why ATC will give you an altimeter setting when you enter the controller's sector. They want everyone to be in sync altitude wise. If you reset your altimeter to the airport setting vice the ATC assigned setting you have now compromised that vertical separation as you no longer are using the same altimeter setting as the other aircraft. Once you are established on the approach, it is critical to switch to the airport setting as now the issue is not collision avoidance but terrain avoidance. Just don't switch until you are established.

What We Hear – Expectation Bias (FAA safety tip): A pilot calls the tower and reports ready for departure on Runway 10. The controller clears the pilot for takeoff on Runway 17. The pilot reads back his clearance for takeoff on Runway 10 – and then stops on the runway when he spots an aircraft inbound opposite direction for his runway. The Air Traffic Control System is heavily dependent upon verbal communication to exchange information between controllers and pilots. Hearing what we expect to hear is frequently listed as a causal factor for pilot deviations that occur both on the ground and in the air. In the scenario above - the pilot expected to be cleared for takeoff on Runway 10 – and the controller expected to hear from an aircraft that had been taxied to Runway 17. These professionals were captured by their own expectations. Eurocontrol defines ATC expectation bias as “Having a strong belief or mindset towards a particular outcome.” A recent analysis of runway incursion data shows that expectation bias is one of the most common causal factors for pilot deviations. Data from the Air Traffic Safety Action Program confirms this fact.

What can you do as a pilot to mitigate expectation bias? Understand that expectation bias often affects the verbal transmission of information. When issued instructions by ATC – focus on listening and repeat to yourself exactly what is said in your head – and then apply that information actively. Does the clearance make sense? If something doesn't make sense (incorrect call sign, runway assignment, altitude, etc.) – then query the controller about it. Don't let your expectations lead to a pilot deviation. Listen carefully – and fly safe!

Distractions in the Cockpit (FAA safety tip): Two pilots using laptops and discussing crew scheduling procedures lose situational awareness and overfly their destination airport by 150 miles. A Captain calls for the after landing checklist while completing a difficult double right turn with limited space between runways and misses seeing the hold line, pulling onto the runway in front of a departing wide body aircraft. These real incidents are only two examples of what can happen if you allow yourself to become distracted when operating an aircraft. Distractions in the cockpit are one of the leading causal factors in pilot deviation runway incursions. The runway hold line is a single point on the airport, and if you are not looking for where to hold short and you

miss the signs and markings, there is no other visual cue until you reach the edge of the runway. Distractions which have resulted in pilot deviations include:

- Completion of run-up procedures while moving the aircraft
- Dealing with passenger's questions or issues
- Crewmembers going heads down in order to program instruments
- Using electronic flight bag devices while taxiing

What can you do to guard against distractions? Have your head up and out at all times when taxiing your aircraft. If tasks require you to go heads down, stop in a safe place and complete the task, then continue to taxi. Brief passengers on the importance of maintaining a sterile cockpit while taxiing, and during other critical phases of flight. Review airport diagrams and departure procedure charts before taxi, identifying locations or operations during which distractions carry a greater risk. Turn cell phones off.

Inadequate Preflight: The following discussion is taken from "Flying Lessons Weekly." No one could have believed this could happen but it did happen with a professional flight crew. Sometimes we see what we want to see. Pay attention to your preflight!!!

"On July 28, a Piaggio Avanti...flew two legs (one with passengers) without a left elevator, and now the company has grounded its entire fleet as it works with the FAA through a safety review.... According to the NTSB, the incident aircraft departed Camarillo Airport in California, travelled to San Diego, where it picked up two passengers, and then flew to Henderson Executive Airport in Nevada. The missing elevator was discovered by airport personnel at Camarillo, three days later. The pilots did report some peculiarities.

According to the NTSB, after the crew landed the plane in Nevada they had a look at the tail and discovered that the left elevator was missing. The Avanti has three lifting surfaces: the main wing, a forward canard and a lifting stabilizer mounted atop the vertical fin at the rear of the aircraft. The crew reported to the NTSB they had some control issues, including the need to apply more-than-normal back pressure during landing in Nevada, but said there didn't appear to be anything unusual about the San Diego leg.

I've seen pilots who do extremely brief preflights (a near-jog around the airplane), pilots who appear to be taking a thoughtful look at the aircraft (usually, less experienced pilots planning on taking a check ride soon), pilots who kind of gaze at the airframe, seeming not to know precisely what to do, and pilots who walk (or drive) out to the airplane, climb right in, fire up and go.

Most frequently, however, I see pilots who do fairly complete walk-around, but do so with distractions—talking to passengers, looking at other airplanes on the ramp or in the pattern, or most commonly these days, talking on their cell phone or reading and answering texts messages or email while purportedly inspecting the airplane.

Knowing the fast-paced world of Part 135 on-demand charter and Part 91 Subpart K (fractional ownerships, which have near-Part 135 requirements), I'd bet the crewmember that preflighted that Piaggio was a junior copilot who was also filing flight plans, coordinating future schedules or ground transportation, or doing who knows what else besides truly looking at the airplane while he/she did the walk-around.

Two very human responses can conspire to make you do something as seemingly impossible as to take off in an airplane with a missing elevator. The first factor is expectation bias. We see what we expect to see. Look up at the tail of a big turboprop and you expect to see an elevator attached.

The second is rationalization. We seek to explain away things that don't look right, or feel that conditions that are patently wrong are somehow "right" for us. Can't see the elevator on the T-tail? It's probably the sun, or the way the control surface is deflected. It can't possibly be missing....

Of course, there's always the possibility the crew never looked up at the tail at all. And what about the mechanic that last returned the airplane to service?

When was the last time you actually canceled a flight because of something you found during a preflight inspection? I know I've done so twice this year: once when the GPS database for a rented airplane was out of date before a planned IFR flight (yes, you can argue the legality, but I'm talking highly principled preflight here), and a different time when a tiny landing gear uplock spring was missing as I preflighted an A36 Bonanza. My customer was understandably disappointed, but thankfully agreeable that we needed to delay the training flight until a part could be ordered and a repair made the next day.

Preflights are meant to find problems that need to be addressed before flight. Almost always they reveal nothing that will delay or cancel the flight. That does not negate the need to look closely, without distractions or preconceptions, at the airplane as you determine its fitness for flight.”

Wildlife Encounters: VAWG has suffered several wildlife strikes recently (birds and deer) that emphasizes the need for constant vigilance. Fortunately, our strikes so far have not caused any loss of life or injuries (the wildlife disagrees with this assessment) although it has caused substantial damage to our fleet. Wildlife strikes do pose a serious threat and wildlife avoidance should be part of our preflight planning. Here in VAWG, our major threats are deer and birds although other animals can be a threat as well. Some points to consider:

- Ensure that there is no wildlife capable of interfering with a takeoff on the runway or in the vicinity of the runway. At night, it can be difficult to spot deer or nesting birds off runway near enough to cause problems. If you see wildlife that might be a threat, clear it away before you start your takeoff run.
- The higher you fly the less chance of encountering birds (or deer!). If a bird strike looks inevitable, do anything you can to avoid the bird hitting the windscreen (easier said than done). Birds tend to dive when they see an approaching airplane so climbing is usually the best strategy.
- Be especially cautious taking off or landing at airports with nearby foliage as they can harbor deer and birds.
- Make your takeoff and landing runs as short as possible to minimize the probability of hitting wildlife.
- Make your landings as slow as possible to minimize damage if you do hit wildlife
- If you see any wildlife that poses a threat, get on the radio and inform the tower or other pilots at non towered airports. In a recent near encounter, an astute CAP crew waiting for takeoff noted over a hundred Canadian geese next to the runway while an Eclipse jet was on final. The CAP crew alerted the Eclipse which made an immediate go around. As they did, the geese took flight and would have impacted the jet had the Eclipse crew not been warned.

The following pictures show what happened to a Citation jet landing and encountering a single deer. This particular Citation was returning home from a complete redo of the avionics. It was a total loss. Fortunately, everyone got out before the aircraft was consumed by fire. Be careful out there!!!





Articles for the VAWG Stan Eval Newsletter: We are always looking for brief articles of interest to VAWG pilots 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 steve.hertz@ngc.com. If your article is accepted, you will get a pro rata share of the VAWG Stan Eval Newsletter subscription fees.