



STAN-EVAL NOTES
CIVIL AIR PATROL VIRGINIA WING
UNITED STATES AIR FORCE AUXILIARY

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More on Short Field Performance: It's important for us to remember that our Cessna and Gippsland takeoff and landing distance information assumes a short field technique. So a good question to ask is what is the takeoff distance (or landing distance) when not using a short field technique. The POH does not give us a definitive answer. But in most of our take off and landings, that is the information we really need. There is no single answer as each pilot uses different techniques (flap setting, rotation speed, how the throttle is applied, and so forth) which can have a significant effect on performance. So it's worth going out and comparing the takeoff and landing distances using both short field and "normal" techniques to understand the differences for your particular technique. Measuring distances can be approximated by knowing that the runway stripes on the centerline line are normally (not always) 200' from center to center. If you do this, you may be surprised by how much difference there is between a normal takeoff run and a short field takeoff. And the answer will vary with density altitude.

Monitoring Takeoff Performance: We all know how to calculate the takeoff performance of the aircraft we fly. But once the takeoff roll starts, we need a way to determine as we roll down the runway that we really are going to lift off before we get to the end of the runway. A useful rule of thumb is that the aircraft must reach 75% of its flying speed by halfway down the runway. Another useful technique is to pick a point down the runway (preferably before the runway ends) and if you aren't flying by then, abort the takeoff.

FAA Safety Briefing: One of the best resources for safe flying is free and available for download on the web. FAA Safety Briefing is the FAA's monthly magazine edited by our very own Capt Susan Parson. It always has interesting and informative articles on a range of safety related topics of interest to all pilots in VAWG and should be on your required reading list. You can view it or download it from www.faa.gov/news/safety_briefing.

Your next medical (courtesy of D. Todd, ALWG DOV): I want to pass along some information and recommendations from an AME (Aviation Medical Examiner) and a little of my own. AMEs are getting stricter in their exams due to pressure from the FAA. It has even been rumored that the FAA is "testing" some examiners by sending in undercover people with known issues to see if the AME acts appropriately. That is an unconfirmed rumor but they are also doing it in other areas as well as placing new scrutiny on CFIs and repair facilities. But, one thing for sure, lots of pilots are losing medicals every day. We have several CAP members who have lost medicals recently and are going to have to jump through lots of hoops to get them back. Here are some suggestions:

- If you have an established track record with an AME, don't change without a really good reason. He knows you are not an undercover guy and he also has a history on you. We have a member who changed his AME and he was denied on the first visit - over a vision problem! And, he may not really have the issue he was denied over but now has to prove he does not. More on that later.
- Don't go for an exam without "studying" for it. Check your blood pressure regularly and check it before you go for your medical exam. It is not unusual to be a little higher than normal when you go and you don't want to cross the line. If you find it unusually high, don't go for the exam until you find out why and get it under control. It could be situational due to temporary stress or something in your diet, or a reaction to some harmless medication. But, catch it at your medical exam and you could leave without a medical and a lot to do to get it back. You will usually not know your blood pressure is high without checking it. As we get older and gain weight and other things happen to our bodies, your blood pressure may rise and you don't want the AME to discover it. It is something you will want and need to address without having it affect your medical status. Last year I found mine creeping up. After seeing

my regular doctor, he gave me two options, take medication or lose weight and exercise more. I lost the weight and the blood pressure dropped dramatically.

- Remember, your AME is not your "doctor" and you should not establish a doctor - patient relationship with him. He is for aviation medicals only. Also, don't have your other doctors submit routine reports to your AME. I made that mistake a few years ago and the report did not exactly coincide with what I had put on my medical application. It was a non issue but one I should have avoided. Remember, he is NOT your doctor. He is an Aviation Medical Examiner.
- We should all see a regular doctor each year for a basic check up. I recommend doing this a month or two before your medical is due. Then, if there is an issue, you have time to deal with it. Or, you can ground yourself without having a medical denied. Once it is denied, the battle is on and it is not cheap. It will cost you a lot of time and money to get it handled. And, from what I have been told, if you didn't have blood pressure problems before, that process will give it to you. Seeing a regular doc can help to avoid issues.
- Blood pressure, unapproved medications, and vision are the two areas our guys are getting caught on in addition to the obvious surgeries, injuries, and other problems that an individual knows are issues ahead of time. And, the eye exam at the AME is not very scientific. The chart on the back of the door, people walking around, and less than ideal light do not lend for a good exam. I see my eye doctor a month or two before my visit to the AME. He is an expert and I have him write a letter to my AME with my current diagnosis. My AME had me required to wear corrective lenses at all times when I really only need them at night in low light. After I brought the letter from the eye doc, my medical now says I must "Possess corrective lenses for near vision" which prevents me from having to wear them in bright sunlight when I don't need them.
- When completing your medical application, be careful about reporting any medication you may be taking without checking it against the medication list on the AOPA website. You will be surprised what you cannot take. A slight change in brand may be all you need to do. Many are acceptable with a report from your regular doctor. But report it without the accompanying paperwork or checking it against the allowed medications list can get you in trouble and get you denied.
- You should not get a second or first class medical if you don't need it. Remember, the higher the class, the tighter the requirements. You could pass a third with a condition that might cause you to fail a first or second. But when you fail you fail.

I send you this as we have had an unusually high number of pilots lose their medicals in the past few months. The suggestions above cover some of the problem areas involved. Stay healthy and keep your medicals. We need you!

VAWG Tiedown Ropes (courtesy of G. Jackson): VAWG purchased ropes for our aircraft to be used when the planes are tied down outside a hangar so as to guarantee the ropes securing our aircraft meet the regs (see CAPR 66-1) for tensile strength. The initial purchase of rope was yellow in color. Several commanders requested a second set so that one could be left in the plane while one set stayed on the ramp given it could be difficult at times to take up the ropes. The vendor was unable to get additional rope of the same color; however it met the same tensile strength requirements. It is just white in color.

Thus, it matters not what color your tie down ropes in the airplane are – white or yellow – so long as they are the ropes VAWG HQ purchased for the plane and you use them when tying out the aircraft on ramps. Our ropes have a key ring on them with a round metal tag referencing month/year of when they were put in service (8/08 as example).

Airport Safety Tip (Courtesy of the FAA): With the summer flying season in full swing and all of us making travel plans, I know that no one plans on being involved in a Runway Incursion! As you taxi your aircraft, keep your eyes and ears open. Listen carefully to ATC instructions and read back all instructions. Heed all hold short instructions and use proper phraseology in all communications. Remember when approaching hold lines that if you have the two solid lines on your nose you must hold short, unless instructed otherwise by ATC. If the dashed lines are on your nose, then taxi through to clear the runway or taxiway behind you. Please visit the Office of Runway Safety's website at http://www.faa.gov/airports/runway_safety/ for more information on this topic.

GA8 Correction/Update: We are making good progress on getting pilots checked out on the GA8. But the online training and some of the written material has some incorrect airspeeds for N605CP. The two stall speeds for our GA8 (from the POH) are 57 knots and 64 knots (with and without flaps) rather than the 52 knot and 60 knot airspeed found on line.

Engine Failure on Takeoff and the Impossible Turn: We all need to be ready for a loss of power on takeoff. Although the event is rare, it can be fatal. We can reduce the risks associated with an unexpected loss of power by planning for it before takeoff. The procedure should be briefed as part of our takeoff briefing even if we are solo so that we are both physically and psychologically prepared. A sudden loss of power at low altitude will preclude using a written checklist as there will be no time. So make sure you have memorized this part of the checklist and are capable of executing it under stress.

The brief should include as a minimum which way we should turn when the unexpected happens. You don't want to start looking for a landing site after the engine has failed. You want to already know where you will go when the failure occurs. Brief the minimum altitude you will need to turn back to the airport, if at all. The direction of the wind will be a factor in which way you turn. If the failure occurs at low altitude (how low?), you will be severely limited in how far you can turn. A good rule of thumb is to land straight ahead if possible. Only attempt a turn back to the airport if you have reached your predetermined altitude and a turn back is prudent.

MISSION BRIEF

1. Mission Objective
2. Destination, WX, Route, Alt, ETE
3. NOTAMS
4. Crew Coordination & CRM
5. Sterile Cockpit Procedures
6. Cockpit Layout
7. Intercom & Radio Usage
8. Seats, Seatbelts, Doors
9. Emergency Action & Equipment

Engine Failure Immediately After Takeoff

1. Airspeed.....
76 KIAS (Flaps Up)
70 KIAS (Flaps Down)
2. Mixture Control.... Idle Cut-Off
3. Fuel shutoff valve Off
4. Magnetos Switch..... Off.
5. Wing Flaps As req
.....(Full Recommended)
6. Stby Batt Switch Off
7. Master Switch (Alt & Bat). .Off
8. Cabin Door.....Unlatch
9. Land..... **Straight Ahead**

The most important action to take upon sudden engine failure is to push the nose down. Intuitively, we might think that the loss of power will automatically lower the nose but that isn't enough. You must aggressively push the nose down to the proper attitude especially if you have passengers in the back. Otherwise you will go into a mush in just a few seconds with a stall not far behind. Practicing this at altitude demonstrates how necessary this is. At a safe altitude configure the a/c for Vx and a climb attitude, pull the power, count three seconds to simulate the surprise factor, and then push the nose forward to maintain flying speed. You may be surprised by how much forward pressure it takes to keep from stalling.

The least important action would be to call on the radio or to squawk 7700. Don't even think of it!!! Fly the airplane!!!

Much has been written about the impossible turn which refers to trying to turn back to the airport after an engine failure. It takes a lot of altitude to be able to successfully turn back to the runway. You can try this at a safe altitude with an imaginary runway in the sky but the results may be misleading and woefully optimistic. It's hard to simulate the surprise factor and pilots react very differently when descending near the ground with the stall horn going off. The Navy conducted a study ("The Feasibility of a Turnback from a Low Altitude Engine Failure During the Takeoff Climb Out Phase" Brent W. Jett) of the impossible turn and showed that a bank of 45 degrees was the most effective bank to perform a turn back but that there was little difference in the results using 30 to 45 degrees of bank.

Instructor pilots should emphasize the following points when teaching how to handle engine failures after takeoff:

- The takeoff briefing must include possible landing sites upon engine failure.

- The minimum altitude needed for a turn back to the airport if no other option is prudent.
- It's critical that we be psychologically prepared for engine failure.
- The necessity of aggressively pushing the nose down to maintain flying speed.
- Memorization and execution of the engine failure on takeoff checklist

The Do's and Don'ts of Maneuvering Flight (Courtesy of the FAA): Nearly one-third of all fatal accidents occur during maneuvering flight, in part because maneuvering at low altitude limits the amount of time a pilot has to recover. Maneuvering flight is basically any type of flying performed close to the ground -- even the traffic pattern is considered maneuvering! Do's and Don'ts that can help keep you safe.

DO

- Do remember that the majority of fatal stall/spin accidents occur at low altitudes, because the closer you are to the ground the less time you will have for a successful recovery.
- Do practice stalls or approaches to stalls at a safe altitude. If you're rusty take a CFI with you.
- Do fly at a safe altitude so that you won't be surprised by obstacles that may require abrupt maneuvers to avoid.
- Do remember that turns and sudden climbs increase the wing loading which will increase the stall speed, sometimes dramatically.

DON'T

- Don't explore the flight envelope close to the ground.
- Don't exceed 30 degrees of bank in the traffic pattern.
- Don't buzz or otherwise show off with an aircraft. Not only are you putting yourself at risk, but your pilot certificate too. The FAA gets lots of complaints that include cell phone pictures and videos.
- Don't attempt maneuvers for which you have not been trained. Get an Instructor on board the first time!

Want to know more? Go to the Courses page on www.FAASafety.gov and look for Course ALC-34, Maneuvering: Approach and Landing

WMIRS Validation and Approvals: When a pilot enters a new qualification into WMIRS it must be validated and approved. WMIRS automatically routes the new qualification to a pre determined individual in CAP (usually the operations officer). The validator should review the requested qualification and any associated uploaded forms (Form 5, aircraft questionnaire, medical, and so forth) to ensure the entries are complete, correct, and appropriate. Once validated, WMIRS routes the new qualification to the approver (usually the squadron or group commander) for approval. The approver reviews the qualification and then either approves or rejects the request (even though someone may have done everything needed, it is up to the Commander whether to approve).

For this system to work, pilots must ensure all the paperwork is filled in completely and correct. Any errors will delay getting it approved. So the first step is to get it right before it gets in. However, pilots can make mistakes and that is why we have a validation phase. It is up to the validator to make sure everything is complete and correct before sending it on for approval. Otherwise, the Commander has to deal with a lot of errors and will be more prone to reject rather than approve the request. So if you are a pilot, try to get it right. If you are a validator, read all of the inputs for correctness. If anything is wrong, get the pilot to resubmit! This is especially important when an audit of WMIRS is conducted.

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 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.