

T-CRAFT AERO CLUB

MONTHLY NEWSLETTER

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It's amazing how much snow we get during a global warming; we had a light turnout for our last General Membership Meeting of 2010 in November, because driving conditions weren't so hot. The next time we meet – 25 January 2011 – we'll be reviewing 2010, and voting for members who we feel have the talent to fill important positions on our Board; those positions include President (one year term), Vice-President (one year term), Billing Director (four year term), and the remaining year of the Facilities Director term (four year term). Please contact the Secretary if you are interested in running for any of these Board positions.

If you are interested in volunteering to help with the 2011 Elections Nominations Committee, please attend the December Board Member meeting (14 December 2010, 7:00p.m., T-Craft Hangar office). A chairperson will be selected to build a committee, conduct a nominations search, build a balloting and vote capture procedure, and confirm the final vote count during our Annual Membership Meeting.

From the Membership Director

In last month's safety article I talked about mastering the fundamentals of flight. One of the best maneuvers for doing this is the "Slow Flight" maneuver, as described in the Practical Test Standards. In this maneuver we should be operating at minimal controllable airspeed (MCA). By definition, the term "flight at minimum controllable airspeed" means a speed at which any further increase in angle of attack or load

factor, or reduction in power will cause an immediate stall. The stall horn is usually sounding at this speed.

Why is this exercise so good ?



In practicing flight at MCA, we develop the feel, sensations and awareness to operate correctly and safely at critically slow air speeds. It helps develop the control responses, coordination, power management, and degree of control-ability necessary in critical configurations. It helps us to recognize and develop the margin of safety above stalling speed so that we do not find ourselves in an unintentional stall, or spin during a critical phase of flight. It also helps us get in touch with some of the aerodynamic principles we may have forgotten.

We are in the "slow" critical phase of flight for only a few seconds just after taking off, just before landing, possibly during go-arounds or in an emergency situation, and of course just before a stall.

Practicing slow flight gives us lots of time (more than a few seconds of each flight) in this critical phase of flight to explore the limits of the aircraft and our skills. We can do this in the comfort of enough altitude that we can recover if we screw up.

Setting up for slow flight exercise . . . As with any performance maneuver, we should climb to an altitude so that no part of the maneuver takes us below 1,500 feet AGL. Better yet, climb to 2,500 feet AGL.

After completing our clearing turns, slowly reduce the power (apply carb heat where appropriate) and start to pitch up to reduce airspeed, while maintaining heading (+/- 10 degrees) and altitude (+/- 100 feet). As the airplane slows to V_{fe} , begin lowering the flaps to the desired setting, continuing to hold heading and altitude.

As the speed decreases further, additional power will be required, due to more induced drag at higher pitch up attitudes (angle of attack) required to maintain lift. The controls will become mushy and the stall horn should start playing its tune as we approach MCA. Maintain this airspeed to the PTS standards (+ 10/ - 0 knots) while adjusting power to find the setting that results in level flight. We will also feel the P-factor effects that produce a strong yaw to the left, so right rudder is required to maintain coordinated flight. The secondary effect of applied rudder is to induce a roll, so aileron is also required to keep the wings level. Don't forget to readjust trim as you perform this maneuver.

After the attitude, airspeed, and power have been stabilized in straight and level flight, try some turns. Start with 10-15 degree of bank and make some turns in both directions. When you get comfortable with that, try up to 30 degree bank or more. During the turns, power may need to be increased and pitch attitude adjusted to maintain airspeed and altitude within limits. Keep an eye on the ball and stay coordinated and notice the short radius of the turn you're making. The objective here is to reacquaint us with the lack of maneuverability at minimum speeds, the danger of incipient stalls, and the tendency of the airplane to stall as the bank is increased. A stall may also occur as a result of abrupt or rough control movements when flying at this critical airspeed.

After doing turns, try some climbs and descents while maintaining airspeed at MCA. Adjust the power as required to establish the desired rate of climb or descent. Remember pitch controls airspeed and power controls altitude in this configuration.

Perform the maneuver at various flap settings, between zero and full flaps.

Recovery from the slow flight maneuver is doing everything in reverse back to cruise airspeed, while maintaining heading and altitude within limits. Practice this maneuver so that you can go

into and recover from slow flight conditions rather quickly with smooth coordination of power and pitch attitude changes.

And you can have even more fun . . . Once you get proficient with the standard slow flight maneuver, try some other things.

Try to meet the commercial standards; heading (+/- 5 degrees), altitude (+/- 50 feet), and airspeed (+5/-0 knots).

If you haven't done some stalls in a while, slow flight is a good way to start then ease your way into a stall.

Record the airspeed when stall horn starts and the airspeed of the actual stall in typical landing and take-off configurations. Note the difference between these two air speeds in each configuration to get a sense of the margin you have between the warning and stall. These air speeds will change, depending configuration, power, gross weight, load factors, and density altitude. Also note how they compare to the POH. It would be helpful to have some daring soul with you to do the recording.

Work on maintaining a stabilized short field approach. Set up in a full flap short field approach configuration. Reduce power to a normal final approach power setting. Maintain altitude as long as possible until it stalls and note airspeed. Pitch down to an airspeed of 1.3 times V_{SO} that you just determined. How does this compare with the POH short field recommend airspeed? Adjust power to achieve a 500 ft/min decent rate. Once you have stabilized the rate of decent, adjust the power to increase or decrease the decent rate while maintaining approach airspeed. Adjusting power and changing decent rate, while maintaining constant airspeed, will help in situations where you may be either too high or low on final approach.

I hope this gives you some ideas of some things to do this Winter to maintain or improve your flight skills. If you are looking for something that will give you the most bang for the buck in tuning up your skills - try some S-L-O-W flight.

You can find more discussion on this topic in the FAA Airplane Flying Handbook (FAA-H-8083-3A), Chapter 4. If you don't have this book, you can download it from the FAA web site at:

http://www.faa.gov/regulations_policies/handbooks_manuals/aircraft/airplane_handbook/

Fly Smart, Fly Safe and Have Fun,

Jim Hudson

ATTENTION: See your e-mail, visit the T-Craft Website (<http://www.t-craft.org>) and call for NOTAMS, TFRs, and other updates for KMAN (You know? Our runway?). Expect night closures, and some day time inconveniences, as runway improvements are installed. Call the [Nampa City Airport Manager](#) for more information.

Membership: We remain at 73 members.

We lost one member this month; Aaron Miller.

We gained a New Member, Matthew Eicher (Mikes brother), who will be learning to fly.

From Member Bill McGlynn (on his presentation, "Aviation Weather")

Below are the web links to the wx forecasting sites I reviewed in our Dec 2 Winter Wx seminar.

The basic outline of the course is this - winter wx is much more active than what we experience the rest of the year. We have "long waves" of cold air in the upper atmosphere, with many embedded "short wave" disturbances. An apt analogy is wave action in the ocean, where you have peaks and troughs embedded in the tide. These short waves cause significant wx events, like we have had recently. These can be hard to predict because they move fast, but there are several good sources of wx information available now on the web that can give you ample time to adjust. My seminar is all about interpreting these sources so you can make plans for flying our airplanes safely. Never forget that wx is still the number one grim reaper of airmen! This is why I'm so interested in wx. But I have to warn you, I am a better pilot than weatherman, so you should learn about wx and use your own judgment as well.

The site you should use most often, in my opinion, is the Global Forecast System, (GFS). This is a computer model that takes in 10's of thousands of inputs and then outputs a graphical model of how wx may evolve over the next 16 days. There are two models within the GFS that you should look at. One is the 850mb, precip model, which depicts potential precip over North America at the 5000 ft level, (which equates typically to 850mb of atmospheric pressure). The other model is the 500mb upper air model that depicts wx systems moving around in the troposphere - about 18000 ft msl, (generally the equivalent of 500mb). This model is important because major storms mainly get transported around the globe at this height, and you can see the jet stream on this map.

Here is the web address for the GFS models:

<http://www.nco.ncep.noaa.gov/pmb/nwprod/analysis/>

When you go to this page, click on a recent run of the model, (it runs 4 times per day, time stamped in zulu time), and be sure to click "medium" resolution on the GFS row. The next page will show you a selection of mb representations of wx. At the top of the page are two choices - "surface GFS" or "upper air GFS". Choose "surface" and if you have a fast internet connection, click on "850mb" loop near the top of the columns. This will give you a Java download of the weather pages over 16 days. Green on the map page is precipitation being forecasted over the 6 hours previous to the timestamp at the bottom of the map. Also note the blue contour lines. The one marked "0" is the demarcation of freezing temp. Area north of the blue line is 0 or below. Area to the south of the line is warmer. The reason this is important is it will help you interpret whether the precip shown will be in the form of rain or snow. Once again, this is air at the 5000 ft msl level.

To view the upper air GFS, (500mb or 18000 ft msl), click back to the page that has all the columns and rows, click "upper air GFS" at the top and then choose 500mb.

There are a number of supporting websites that we reviewed that give you more information about short term weather. One that will help you interpret the GFS models is this one:

<http://www.wrh.noaa.gov/zoa/cwa.php> Just click on the region you're interested in on the map, and the wx forecast discussion will be posted on the right. This is the local NWS forecaster's interpretation of all the models and how it will affect the weather in that geography over the next week.

Here are the rest of the websites we visited:

<http://aviationweather.gov/adds/metars/>

http://aviationweather.gov/adds/icing/icing_nav.php?icg_type=CIPSEV50&height=max&fcst_hr=00

<http://www.aopa.org/index.html>

<http://www.wrh.noaa.gov/satellite/?wfo=boi>

<http://www.ghcc.msfc.nasa.gov/GOES/goeswestpacus.html>

Thanks to those who braved the cold to join the seminar. For those we missed, Jim Hudson and I will organize another Weather Seminar in the not too distant future. – Bill McGlynn

(Members can participate as meetings presenters or contribute safety articles by contacting Jim Hudson.)

NEW MEMBER NOTICE

T-Craft Board approved members must be formally accepted into the Club by member vote during a General Membership Meeting. The next General Membership Meeting is scheduled for 25 January 2011, 7:00p.m., in the EAA/CAP Building, Nampa airport.

Aircraft Maintenance

Contact Jim Eyre [cell:(208)794-0667] with squawks, and use the notification feature found on-line in [Schedule Master](#) to alert pilots intending to use impacted aircraft. Write the tachometer time on the Squawk Sheet clipboard found on the hangar wall. Sign your name, and include a phone number where you can be contacted. Document Hobbs time for all other recordings. Report leaks immediately.

Winter weather is problematic for several reasons. Take more time than usual to plan your flight. Check [Schedule Master](#) regularly. Unexpected events can and will occur with our aircraft. You may find yourself needing one of our airplanes, learning at the last minute that it has been hauled in for repairs, annuals, or other reasons.

Read and follow your aircraft's POH, especially cold starting procedures. We have had to replace or recharge NUMEROUS aircraft batteries because our members have tried to fly our birds using just the starter. CALL Jim Eyre or AeroServices if you suspect trouble. DO NOT RUN THE BATTERY DOWN.

Carefully prime your engine. READ and FOLLOW the POH instructions for your aircraft. DO NOT OVER PRIME! You can cause a potentially DANGEROUS fire when too much fuel is pumped into an aircraft engine during priming, leaks out the exhaust, and ignites.

Do NOT test the fuel filter sump IN THE HANGAR. We have electrical appliances and service cords everywhere. Aircraft fuel vapors are easily ignitable, at ANY temperature.

FROM THE BOARD

Winter Flying Hours are in effect from December through February. You can fly all three of your Minimum Hours in one of these months, or two of these months, or one hour in each of these months. Contact a Board Member if you have any questions.

***** Members wishing to maintain currency may attend the following meetings*****

Next Board Meeting: 14 December 2010, 7:00p.m., T-Craft Hangar training room.

Next General Membership Meeting: 25 January 2011, 7:00 p.m., EAA/CAP Hangar, Nampa, Id. This will include our Annual Meeting and Elections.

Flying rates effective 8/31/10 (all hours recorded per hour "wet"):

375	-	\$52.00
64R	-	\$77.00
686	-	\$79.00
91X and 0YD	-	\$109.00
93S	-	\$112.00

Fuel re-imburement for September 2010: \$4.03/gal.

(Review your receipts and confirm \$.25/gallon is recorded. Report any discrepancies ASAP to Dennis Wheeler.)

Upcoming Local and Regional Events

7 December 2010, Pearl Harbor Day, Warhawk Air Museum, contact Sue Paul.

If you have read, or know of events to come, please send your notice to the Secretary (jlvanho@msn.com) for the news letter.

Websites of Interest

The official website of T-Craft Aero Club Inc., www.t-craft.org
Nampa, Id. Airport news, <http://www.nampaairport.org/airport/Category/news>
Survival, and back country gear, www.cubgearstore.com
www.shortfield.com
www.backcountrypilot.org
Idaho Aviation Association, <http://www.flyidaho.org>

Idaho Aviation Association Calendar of events, <http://www.itd.idaho.gov/aero/>
Oregon State, <http://www.aviation.state.or.us/>
AOPA's "Let's Go Flying!", <http://www.aopa.org/letsgoflying/>
FAA, http://tfr.faa.gov/tfr_map_ims/html/index.html
TFRs on WACs or Sectionals, <http://airspace.nifc.gov/mapping/nifc/index.cfm>
TFRs along your route, <http://www.navmonster.com/>
Large fires, some including TFRs, http://activefiremaps.fs.fed.us/lg_fire2.php
[AOPA Flight Safety](http://www.aopa.org/asf/online_courses/) on-line courses, http://www.aopa.org/asf/online_courses/
<http://www.weather.gov/aq/sectors/pacnorthwest.php>
National Weather Service – Boise Office, <http://www.wrh.noaa.gov/boi/>
Fire Reporting, <http://www.firedetect.noaa.gov/viewer.htm>
Runway safety, <http://www.faa.gov/go/runwaysafety>

Reminders

Answers concerning our Club, Policies, or even locating a **New Member Application Form** for your friend or family member can be found on the T-Craft website: www.t-craft.org.

T-Craft Business Cards and Pamphlets are available. Share them with friends and acquaintances in the community who may be looking for piloting opportunities.

Properly sign out your aircraft, including the correct designation; for example, Local, Cross Country, Maintenance, Replacement Aircraft Search, etc. If an aircraft moves, breathes, or sneezes, it **MUST** be correctly documented for maintenance and billing.

Delete the remainder of any unused flight time from Schedule Master immediately after landing. Somebody may be able to use that time.

T-Craft Members are responsible for keeping their **contact information** (phone numbers, email addresses, postal address) updated in **Schedule Master**. To check or update your information, login to Schedule Master, click the "User" tab at the top, then click the link that says "Click here to edit your user info".

Ask any Board Member for a copy of any of the Minutes, or you can e-mail the Secretary (jlvanho@msn.com), and have a copy sent right to your home.

Got something aviation **you want to sell**? Post it in the T-Craft Newsletter. Send your advertisement to the Secretary, jlvanho@msn.com.

Thanks to all who have sent us photos for our news letters. We encourage anyone with a camera and a steady hand to submit your stories and pictures for our December 2010 edition. We love piloting, and we love seeing the places our aircraft are flown.