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The MacAir Flyer

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Chief Pilot Comments

Tom Bell, Chief Pilot

With the excellent weather, the hard work of our maintainers and the enthusiastic support of MacAir pilots, from September 1st through October 31st we safely flew 778 sorties and 1177 hours...a great job by all involved. This newsletter marks the beginning of our transition to cold weather ops. Although most people associate flying with the more comfortable temps of spring, summer, and fall, winter flying has its own rewards including smoother air and better visibility. It also brings some challenges with potential icing and the need to pre-heat aircraft that have been outside. Read on for some thoughts in these areas as well as on fuel management during flight planning and execution.

Let me also thank Lee Monroe for contributing a column on the upcoming ADS-B Out mandate that goes into effect on January 1st. In addition, Eric Puschnann provided a column on a technique he uses that is a variation on the GUMP check that you may find useful. The purpose of the newsletter remains to convey information on aviation topics to our members. If you would like to contribute an article for our next edition in February please contact our newsletter editor, Mike Nowak.

Cold Weather Airport Planning

Tom Bell, Chief Pilot

At the risk of showing my age (again), I am reminded of the Steve Martin movie, *The Jerk*, in which the main character, Navin Johnson, enthusiastically runs into the gas station in which works yelling, "The phone books are in; the phone books are in." The publication of his name in the phone book somehow meant to him that he was now somebody in the world. This fall, we could again run up and down the halls in the FBO saying, "The Cold Weather NOTAM is in; the Cold Weather NOTAM is in..." OK...that's a stretch, but you've read this far so keep going.

Each fall, the FAA updates and publishes a list of cold weather restricted airports in the NOTAM publication. This is not the set of NOTAMs you probably look at on a daily basis, but the book published every 28-day publication cycle with the long-term NOTAMs like the Washington DC SFRA, avoidance areas for NCAA football games and Disney World, arrival procedures for Oshkosh, etc. It is available on the FAA website and can be downloaded through electronic flight bag apps, like Foreflight. (Cont'd Next Page)

Cold Weather Airport Planning (Cont'd)

The Cold Weather Restricted Airport NOTAM provides procedures for pilots on how to adjust altitudes on various segments of instrument approaches due to altimeter errors when the temperature at various airports is below a certain minimum (remember, "cold and low...look out below"). Airports at which these corrections must be made are listed by state in the NOTAM and identified on the approach plate (with a snowflake symbol) along with the temperature at which the pilot must begin to apply the correction. Corrections can be made on the identified segment of the approach or on the complete approach using procedures discussed in the NOTAM. Note that Wilmington (KILN) has dropped off the list of cold temperature restricted airports in this year's NOTAM, so the only airport in Ohio requiring the correction this year is Burke Lake Front (KBKL). Each of the states bordering Ohio has at least one airport on the list as well. If you are looking to brush up on instrument work in preparation for winter flying and this is one topic you'd like to discuss, contact one of your local CFIs.

Fly safe.

Forest "GUMP's" long-lost sister, FRED A GUMP

Eric Puschmann



We all know about, teach, and use the GUMP check on most flights. However, what is little known is that Forrest GUMP had a sister named FRED A living in England. While the GUMP check helps us accomplish all of the items for landing, FRED A is very useful as both a routine "ops check" and as a preparation for the landing pattern checklist, when still 10 to 20 miles from the airport.

I came upon FRED A by accident about 20 years ago when I was researching the British Homebuilt "Europa" (200 mph, fiberglass, Rotax-powered, 2-seat, and capable of mild aerobatics). The Europa evolved into the certified Liberty XL2, like the Mahoney's plane in their I19 third-row hangar. I discovered the FRED A check is quite common in Britain, but I haven't seen much, if any, use in the USA.

I find using FRED A, followed by GUMP, helps keep the trainee (and the old-timer pilot) think ahead of the airplane as we prepare for the approach and landing.

- **Fuel:** Ensure fuel is sufficient and being consumed at the expected rate. Set the fuel selector switch to desired tank. Turn on/off the fuel pump, as required.
- **Radio:** Tune to the correct frequency for ATC/CTAF/Tower/ASOS/ATIS. Copy the weather for landing. Listen for traffic announcements.
- **Engine:** Check oil temperature, pressure, and other engine indicators. Set mixture as appropriate.
- **Direction:** Check magnetic compass and adjust heading indicator, if required. Identify runway for landing and determine appropriate direction for traffic pattern entry.
- **Altimeter:** Adjust altimeter to the current barometric setting. Review field elevation and traffic pattern altitude.

Of course using the aircraft's POH checklist always takes precedence; however, using FRED A followed by GUMP will help ensure that nearly all of the checklist items are accomplished in a timely manner prior to entering a busy traffic pattern.

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Have comments or an idea for the next issue? Let Tom (tbell@macair.us), David (dgraciarod@macair.us) or Mike (mjcsnowak@yahoo.com) know!

A Review of Fuel Planning

Tom Bell, Chief Pilot

Recently, we have had a couple of incidents where members have landed with less fuel than they should have and with less fuel than is required by our Standard Operating Procedure (SOP).

Our required fuel reserve (by SOP) is one hour of fuel remaining. Refer to the POH for the airplane you are flying to convert this fuel reserve “in time” to a minimum number of gallons of fuel remaining at shutdown. We all should plan to get to our destination (and/or alternate) and shutdown with at least that amount.

Your watch is your best fuel gauge. Fuel gauges in the airplane should always be suspect. They are only required to be accurate when the tank is empty.



In planning:

- “Going direct” is the shortest route to your destination. That’s an advantage. However, there is no way to shorten a direct route if you are behind the fuel curve. That’s a disadvantage.

- Fuel usage will be higher in the climb. This is why it is important to plan a level off point to transition from the climb fuel flow rate to the cruise fuel flow.

- Cruise fuel flow is based on proper leaning. Consider planning your cruise at the rate the engine would be burning fuel without leaning. Then, any savings gained by leaning are extra fuel in the tank at the end of the sortie.

- Fuel usage may be lower in the descent depending on how you plan to use power during this phase of flight. Planning the descent segment at the cruise fuel flow will also result in a fuel savings (albeit a small one) at the end of the sortie.

- Calculate how much fuel you plan to have at your destination (or alternate) above your required fuel minimum and convert this amount to time at the cruise fuel flow. This is the maximum time you can be behind your estimated time enroute and still have the required fuel reserve on arrival (without shortening your route).

- In execution:

- You need a way to monitor fuel usage while enroute. The best way to do this is a flight log that estimates your time of arrival at the next point on the route. Then, when arriving at that point, read your watch to determine whether you are ahead or behind the total time estimate to that point. If you are ahead of your planning estimate, great...you are making gas. If you are behind, then you should refer to the amount of pad you calculated in planning to see whether you can still make it to the destination with the required fuel reserve. If not, then NOW is the time to make a decision as to whether a revised routing will allow you to get to the destination with the required reserve or whether you need to land at a closer airfield with the required reserve.

- If you use an electronic flight log, you still must have a way to track whether you are ahead of, or behind, the fuel curve at each point while enroute. Not all of the electronic products do these real time calculations for you.

Fly safe.

Air Traffic Control and ADS-B

Lee Monroe

On Jan 1, 2020, pilots will be ready for the mandatory use of Automatic Dependent Surveillance-Broadcast (ADS-B) Out in airspace where a transponder is required today. Not surprisingly, the Air Traffic Control (ATC) system will be ready, too. In fact, the FAA is rolling out several, major capability improvements to capitalize on the use of the highly accurate, near real time aircraft positional data associated with ADS-B.

First, here are a few of the benefits of ADS-B Out for pilots and controllers

- Refresh rate: While terminal radars update aircraft position every 4.6 seconds, ADS-B updates every second. These near real time updates allow controllers to see where the aircraft “is” rather than where it “was”. So, when the controller directs a turn, the display instantly reflects turn initiation – that's huge for the controller!
- Reliability: ADS-B is inherently more reliable than transponder (beacon) targets. In fact, ADS-B is allowing controllers to provide service in airspace where radar coverage may be spotty. Experienced pilots may even note fewer ATC “radar contact” lost calls now that ADS-B is in play.
- Search and Rescue (SAR) Response Enhancement: Because the search area associated with of an ADS-B equipped “missing” aircraft is reduced, SAR response is enhanced.

Now, about those rollouts ..

- Standard Terminal Automation Replacement System (STARS): Under this fusion rollout, the FAA has integrated all aircraft position sources - multiple terminal radars and ADS-B – for 155 ATC facilities. After the rollout, targets positions will be displayed much more accurately than on the legacy display.
- Enroute System Fusion Rollout: Similar to the terminal system, a fusion rollout for enroute ATC radars is currently underway. After the rollout, enroute separation will be reduced.

Closing thoughts

- Don't Ask: For the controller, ADS-B is just another surveillance source. So, don't ask if your controller is receiving your ADS-B broadcast since it's integrated with other positional data. While they can work pulldown menus to answer the question, it's time consuming
- Call Sign Mismatch (CSMM) A call sign mismatch occurs when an aircraft broadcasts an ADS-B flight ID which does not match the flight ID on the flight plan. This would potentially result in the display of a “CSMM” flag above the target's data block on the controller's display, needlessly cluttering the controller's screen. As a result, CSMM is currently being suppressed on controller screens. MacAir Aeroclub pilots can avoid this situation, of course, by carefully entering the flight ID listed on the MacAir avionics / FPL spreadsheet.

Source: *ATC and ADS-B: The air traffic control system is ready for 2020*, AOPA pilot magazine, Nov 2019, Mike Collins
See AOPA's online resources, <http://aopa.org/adsb> and <http://aopa.org/adsbselector>



So You Want to Be an Author?

Wolfgang Langewiesche, Beryl Markham, Ernst K. Gann, and Robert Buck—All accomplished aviation authors who left their imprint on generations of subsequent aviators who were motivated by their writings. (If you haven't read any works from these authors, you really need to look into them. Try Amazon.) All of them got their start writing small articles and moving up.

Here's your chance—If you have an aviation-related idea you want to convey get in touch with me for the next newsletter and I'll work with you Mike Nowak (mjcsnowak@yahoo.com)



MacAir Aircraft and Cold Weather Ops—SOP Change

You've likely read a recent e-mail from Tom Bell about a change regarding aircraft procedures and cold weather ops, particularly when an aircraft has been parked outside overnight. This change is re-printed below and will shortly become a part an update to the Club Standard Operating Procedures (SOP). Please observe these procedures to reduce wear on our engines.



1.1.1. Cold Weather Procedures. The PIC will not attempt an engine start when the OAT is less than 32° F without first pre-heating the engine using the electric engine pre-heater (for those aircraft so-equipped) or by placing the aircraft in a heated hangar for three hours.

1.1.1.1. For local operations from I19 when the overnight OAT is expected to be below 32° F, line personnel will pre-heat aircraft engines (using electric pre-heaters or inside a heated hangar) for those aircraft on the next morning's flying schedule and available (i.e., not flying) prior to closing time. If this pre-heating has not been accomplished, the PIC will pre-heat the aircraft prior to engine start.

1.1.1.2. When cross-country overnight, the PIC will arrange for the aircraft to be connected to an electrical outlet using an extension cord (Pipers with electric pre-heaters: a minimum amp capability of 3.3 amps (for Piper aircraft equipped; Cirrus: wire gauge of at least 16 is recommended for an extension cord 50 feet or less in length) or placed in a heated hangar. If staying longer than one night, the PIC can leave the aircraft outside and 12 hour prior to departure either move the Warrior/Archer/Arrow aircraft into a heated hangar or connect the electric engine pre-heater for at least three hours prior to engine start (6 hours for the Cirrus).

1.1.1.3. The Cowl Plugs must be installed during electric preheating in order to maintain heat in the engine compartment.

1.1.1.4. After each flight when the OAT is less than 50° F, the PIC should install Cowl Plugs after engine shutdown to keep heat inside the engine compartment.

1.1.1.5. If the OAT is less than 32° F and the aircraft has sat outside for more than 2 hours since the last flight, preheat the aircraft prior to engine start. The minimum preheating time is 3 hours (6 hours for the Cirrus).

1.1.1.6. The minimum oil temperature for takeoff should be IAW the aircraft POH.

Rating Accolades

The following members achieved the following aeronautical ratings in the past quarter.

Private Pilot: Anwar Ahmed, Bryan Foster, Aubrey Olson, Chandler Yancey, Jacob Menser, Chris Asher

Commercial—Single Engine: Jonathan "Rusty" May, Alex Adames, Julian Harden

Commercial—Multi-Engine: Julian Harden

CFI-Airplane: Adam Stull

CFII:-Airplane: Helen Miller, Diwanshu Bathla

