

**“Riveting Reading”
North Carolina Wing
Aircraft Maintenance**

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By Major Martin 'Stryker' Heller

N358CP receives repaired engine & home.



To: All NCWG Commanders, Operations Officers, Crew Chiefs and Aircrews;

1. December's highlights: Seasons greetings and hopefully you left enough hints for your spouse/Santa to get you some aviation gear. Winter weather and shorter daylight hours really took a bite out of our flying. With a week to go through the holiday season, the NCWG wing has flown ~150 hours. To put in perspective, we'll do that on two good days at summer encampment or in a week of Army ATC training. Be aware that several of the maintenance shops are on vacation. Aircraft that break, will probably sit until after the new year (as ours just did).

2. Maintenance Month in Review: December had a few squirrely issues, since nearly all periodic maintenance was done, sans oil changes. Several items provided some good lessons learned (LL). N4813C surprised us, as the previous 100-hr went swimmingly. Three months later, the voltage regulator cooked the battery and both were changed. The airbox came apart and was rebuilt. A new attitude indicator, and the pilot side, yoke universal joint (removing the 'play' in the controls) were replaced. When it gets back to KFAY, it will have its intercom replaced and fixes to its Aspen system. On the west side of the state, N99885 came back from its annual, without any fanfare. Later, a cabin light was left on, and it needed a charge. LL - the cabin light bypasses the master switch. The other KAVL aircraft, N963CP, was the subject of a McCauley Prop Governor service bulletin. The work was done years ago, during the engine rebuild; we just had to pursue a 'compliance log entry.'

N716CP had a fowled sparkplug; if you suspect one, watch the EGT while doing a run-up; the cooler cylinder, combined with the turned-off magneto will show the culprit (LL). N7360CP; a chaffed co-pilot PTT, causing errant broadcasts. N819CP beacon bulb burned out and was replaced. N179CP needed a new starter motor and was changed out before the aircraft got stuck away from home (LL). A few weeks later, N179CP also needed its rear window resealed. (LL) If the aircraft skin looks like mascara running; your seal has given up. The wet cargo area was another hint. N741CP has a right rear fuel drain leak but it stopped. 'Blue streaks are a tell-tale sign. N98426 received a G500 replacement; hopefully the next one will last more than a few months. N405CV made a precautionary landing due to erratic oil pressure. The KINT crew chief checked oil temperatures, and quantity, and felt it was the sensor. He recovered the off-station aircraft (and flew at a higher altitude to provide more options). Turned out to be a dirty transducer, and returned to service the next day (LL). N179CP airborne aborted due to erratic electrical issues; looks like a voltage regulator will be part of its new year's resolution.

The big news is N358CP (MESA), picture above, had its engine "repaired." It also is getting a new home; in Utah. The Rocky Mountain Region needed several planes, and N358CP was traded for a future new NCWG aircraft. While flying to break in the new cylinders, we didn't hear the autopilot disconnect warning. Turns out it wasn't hook up. Wonder how long that was a problem. Its back on line now, going to Raleigh soon, and then west.

3a. Admin Tidbits: Aircraft Information Files (AIF) & Flight Logs updates: Wow; two months--no changes.

3b. (Repeat) Rescheduled NCWG Operations Conference: Sat, 19 January, 2019, at Rocky Mount-Wilson Reg'l Airport (KRWI). LtC Bailey sent out email info and a sign-up info on Dec 23rd.

→ **Mini-inspection of the aircraft:** We'll be looking at all the aircraft at this meeting for several reasons. First is to determine and prioritize upgrades; (i.e., interiors and such). Second is to determine which aircraft need cowl plugs, sunscreens, etc.... And finally, as a pre-cursor to the upcoming Compliance Inspection. During that event,

NCWG will be directed to produced specific tail numbers for inspection, we want to identify any potential ‘short-falls,’ ahead of time. Emergency kits will be ‘updated.’ Tire-pressure, a previous SAV write-up, has our attention.

3c. (Repeat) “Chocked Tires:” CAPR 66-1 (para 8.6) requires “Corporate aircraft shall be locked, securely tied down, **and wheels chocked** when not in use.” For those of us that don’t, let’s start doing that (SAV item).

3d. Most Survival Kits Are Expired: We discovered that most kits, except for the newest airplanes, had kits purchased or manufactured in 2013, with a 5-year shelf life. Mostly, it’s the water, food source, and batteries in the flashlight that need to be replaced. Other items; solar blankets, bandages, etc... can last quite a while. One kit got wet, another seemed to be missing. So, I’m trying get water, food and battery replacements for the January operations meeting. You may want to do that ahead of time; since its you/your guys in the aircraft.

3e. Where did the National Standardization/Evaluation Homepage go? With the (not so) new web page, aircraft operations info is at: <https://www.gocivilairpatrol.com/programs/emergency-services/aircraft-operations>

3f. Cost of renting NCWG Aircraft changes: NCWG Sup 1 to CAPR 173-3, dated 4 Dec 2018, lists the costs to rent our CAP aircraft (not including fuel). C-172 -- \$59; C-182--\$65; C-206--\$90; pretty much the same as last year. The big change is glider ops; Now its \$40/senior ride; an increase of \$15 (still a great deal). Someone realized CAP wasn’t charging enough for the tow aircraft, besides charging for the glider. And if we need to rent a private tow plane, the cost will be the tow cost, plus \$10 for the glider.

4. Operations:

4a. (Repeat) **Cold Weather Operations:** Remember, airplanes hate the cold like you do. Processes take longer; batteries are weaker, and oil is thicker. While Lycoming requires pre-heat below ~ 20 degrees, planes start a lot easier if you preheat anytime below 40 degrees. A bit hard for many of our ramp birds, but it saves engine wear and tear. Some units / airports have developed unique heating devices to off-set the cold. Of course, remove (brush) any ice or snow from the aircraft wings. Hosing them off with water is a very bad idea. See POH, section 8 for methods.

4b. **WMIRS Mandatory Critical Reading:** There is a cold weather operations PowerPoint briefing all pilots are supposed to read. If you want to review it again, you can find it at the following link. Also, for your reference, you can find the critical reading items, including unread items, under the ‘Support Tab’ of WMIRS.

<https://www.gocivilairpatrol.com/programs/emergency-services/aircraft-operations/risk-mgmt/>

There are seven articles in that tab on winter flying, with plenty of helpful guidance.

5. Trivia Time – Subject: Weight and Balance:

Question 1: The location of the aircraft’s weight and balance (W & B) can be found at:

- a) Tab 6 of the aircraft owner’s manual
- b) Tab 5 of the CAP Aircraft Information File
- c) The aircraft’s airframe logbook
- d) NCWG.org operations – Standardization/Evaluation Website for link to W & B calculator.
- e) All of the Above

Question 2: Do all those above location’s information agree--True or False? (not-so-subtle crew chief hint.)

Question 3: NCWG recently adjusted the NCWG W & B calculator to automatically include 40 lbs in the baggage area. How do you know what your pile of stuff back there weighs?

Question 4: When calculating W & B, do you include the weight of your flight bag & other stuff?

Question 5: Does your squadron keep the aircraft logbooks in the airplane? It’s ~15 pounds of useless load.

6. Thanks for taking the time to read this. Riveting Reading can also be found on the NCWG Operations / Aircrew Maintenance Webpage. If you have questions, you can reach me at 703-732-3264.

- Stryker -

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