



## *“Riveting Reading”*

**Civil Air Patrol  
North Carolina Wing  
Aircraft Maintenance**

**Dec 1, '19. Vol #25**  
*By Major Martin 'Stryker' Heller*



*Upper Right: Cessna C-182T Fuel Sending Unit: looks and costs like it came from a X-Fighter.*

To: NCWG Commanders, Operations Officers, Crew Chiefs & Aircrews;

**1. Motivational Quote:** “I have learned the discipline of flying in order to have the freedom of flight... Discipline prevents Crashes.” Captain John Cook.

**2. November highlights:** **NCWG flew ~325 hours.** Weather hurt us in the 2<sup>nd</sup> & 3<sup>rd</sup> week. A lot of aircraft came in/out of maintenance, some periodic inspections, some separately for squawks, & two for FLIR installations. One of these FLIR aircraft was **KAVL's**. Combined with a longer than usual 100-hour on their other aircraft, we left **NC-019** grounded part of the month. Our Nov A9 flights totals ~ 60 hours; roughly doubled our A9 monthly (28 hour) average. Another intense Army ATC training mission near the end of November helped us stay night current and log hours in a month that is usually pretty slow. November's top hour earners included: **N99832 (KINT)** with ~38 hours, **N262CP (KBUY)** 30 hours and **N819CP (KSVH)** with 27 hours.

**3a. Maintenance Month in Review:** Five new, 100-Hr/Annuals included **N727CP, N99885, N716CP, N98426 & N405CV.** **N727CP** received its last 100-hour inspection before its engine reaches TBO...even with the 200-hour extension. However, the TBO extension doesn't apply to magnetos, so one of those had to be overhauled. It also had a new wheel steering re-shimmy, a recently common occurrence for our C-182 fleet. She also received new main wheel tires and tubes, re-sealing of the front windshield, reaming of the some of the valve guides which were sticking, and replacement of miscellaneous hardware/scat tubing. Another engine is on order, making it the 3<sup>rd</sup> NCWG engine TBO recently (along with **N179CP** and **N4813C** (upcoming), & not including **N7360C's** major engine repair this summer.

**N98426:** Installed an overhead speaker (which was missing) and resolved disconnect between Becker and audio panel (which had not worked since coming from Refurbishment), a new battery, remounted the co-pilot headset jacks, rebuilt the nose struct since the seal was leaking. Replacing the worn-out, copilot's seat track rollers and finally, re-installed the Outside Air Temperature Gauge (OAT). This thermometer was reading inside air temperature (since it was sitting in the cup holder).

**N99885's** annual included replacing the avionics cooling fan and scat tubing, a left strobe and co-pilot door stop. The 33-year old airplane needed some cowling patching and replacement a dozen DZUS fasteners, one of which that decided to deplane early. They also balanced the nose tire and replaced the left main tire / tube. Besides the usual oil and filter change, along with its analysis, 'Echo' got 8-new spark plugs.. plugs.. plugs...plugs... plugs... (JA).

**N716CP** is still fighting a rear-reclining seat issue. Maintenance shimmed the mounting points to reduce the reclining angle. Repairs included the bi-annual pitot-static check, dual magneto 500-hour inspections, a new oil pressure transducer, replaced the backup attitude indicator, replaced the broken, rear cargo door latch, and a new battery. **NC-121** was without an aircraft since the 9-10 Nov, Monroe Airshow; really a week before, since they had to suspend flying to have hours to have it for a recruiting event and then brought it to consolidated maintenance. **N716CP** did go home in time for Thanksgiving.

**N405CV** tail swapped with **N716CP** as the month ended, so 'stand by for news.' We expect this 100-hour/annual inspections to be pretty clean since the aircraft is still new & had some squawks resolved 15 hours earlier. **N726CP** & **N741CP** are in the MX on-deck circle, running out of time the first days of December.

**3b. More Maintenance Actions:** **N437BA** needed new batteries. Kind of exciting as the NCWG Glider normally only makes this rag once a year. **N741CP**'s TDFM 136 has been playing postal ping-pong as two units have come and gone from NHQ to KECG. **N262CP**'s #4 EGT sensor died on its way home from its annual. Fortunately, it was on the first of three sorties, so the airplane came right back to **KSUT** to drop off its crew, and had a new Exhaust Gas Temperature (EGT) probe installed, before its final leg to **KBUY**. **N179CP**'s electrical gremlins continue, this time, including the left fuel quantity sending unit (pictured above). When you wonder why new C-182s cost more than \$500K, its due to parts like this one. Fortunately, CAP's fleet buying power reduced the price to slightly less than "triple ludicrous levels". **N4813C** got oil change, its last before another engine. "**Frank**" is also getting its front seats recovered. **N938CP** needed a new alternator; the FLIR technology just installed could 'hear' the 'dying whine' before human ears could. So as long as we needed to change out the alternator, we upgraded it as well to accommodate this new system. **N9930E** nose wheel went flat... at home.. at KIXA... where there isn't maintenance support. Close by maintenance shops didn't have a tube or tire on hand, so **KSUT/Cape Fear Airworks** flew up the next morning and replaced the tube. **N99885** needed a radio backlight repaired, done at home, at KAVL.

**4a. Administrative Updates:** CAP seemed to have the FY roll-over Jeppesen billing issue again. Wise crew chiefs downloaded the Nov 7<sup>th</sup> cycle data as soon as it became available, and weren't affected by the account freeze. The rest of us became a VFR fleet for ~2 weeks, until the issue was resolved.

**4b. Periodic Aircraft Maintenance Tracking:** Information on Magneto overhauls, oil changes, 100-hour & annual inspections, Pitot-Static Transponder Certification, airplane washes, GPS updates, aircraft location, etc.... are now tracked in AMRAD. Please be sure to review that information before 100-hour inspections, and updated once the aircraft comes back.

**4c. Aeronautical Information File (AIF) Updates:** NHQ's AIF page still shows their last update as 23 April. For those motivated, (or perhaps stuck on the ground between sorties) attachment 1 is the current index and dates of what should be in the AIF. Remember to pull/toss the old VOR and Fire Extinguisher pages once a new page has been started.

**4d. New Flight Check Criteria and Procedures:** Soon, your checkrides will be more structured. Accident reviews revealed that, while CAP's overall accident rate is only slightly higher than Business General Aviation flights, our rates are highest during checkrides and instruction. All check-ride pilots need to take the on-line AXIS course (about an hour) before they will be able to conduct checkrides (once the new system is implemented).

**4e. Bubbling Crude** (Oil that is; Black Gold, Texas Tea): Your aircraft usually comes out of oil changes and annual inspections with an extra 3 or more quarts of Exxon (or Philips) XC 20W50 oil. Sometimes it isn't enough if your aircraft goes on a consumption binge. Squadrons should try to stock a few bottles in case they use up the onboard stock. Ask your airplane owning, CAP-mates; they'll know where to purchase oil less expensively. (Hint: It's not at Nationally Owned FBOs, nor at KEQF.) Maybe yours and a sister squadron can split a case....

**4f. Post-Flight Checks:** Reminder about NHQ's Critical Read Item (dated 9/14/2018) that pilots will conduct post flight inspections in accordance with the checklist (see attachment 2). The point is making sure the plane is either flyable for the next sortie, or that issues have been identified.

**4g. The 66 Quart "petri dish:"** A few aircraft have shown up to maintenance with the 'Bailey Box' a wet mess. Cleaning bottle leaked, getting towels, scrubbies, headset bags, tie-down ropes, etc... wet, and eventually moldy. You're breathing that stuff, but only for hours at a time. Some aircraft have a second internal plastic container to separate wet & dry stuff separate. But there needs to be Tupperware discipline; you can't just through stuff in there to close the lid...." What's in your storage box?

**5. Safety Tip:** Cold weather season again, for you & aircraft. Keep both warm & each performs better.

**6. "Dip-Stick of the Month:** This month's coveted, dip-stick holder has been awarded (for the **second time**) to **NC-171 in Fayetteville (Sandhills)**. Their squadron, each month, has consistently been Wing's **number two squadron** in terms of total flying hours. Leadership always relies on them for AOB and encampment support; many days, **double turning** to meet mission obligations.



**Secondly**, the squadron has been selected to be the WALDOair service provider. That's the new technology, deployable, thermal imaging system that can be mounted on small piston engine aircraft. Sometimes, flying in the mountainous shadow of the Wing's most prolific squadron, might make the runner-up squadron feel like **#2**, but rest assured, NCWG leadership knows who they can always rely on. The dip-stick holder was already installed on **N727CP's** fuel hawk.

**7. Humor Disclaimer:** For those who haven't noticed, I try to inject some levity into these newsletters. Leadership has required that I forewarn them with 'Joke Alerts' "**(JA)**" on those occasions where it is hard to tell if I am attempting to be funny. Rest assured, all comedic efforts are just that, not personal attacks.... Even for such heinous actions (i.e., 'using an \$8 can of Prist to clean bugs off the wing leading edges'). Being this "RR" 25<sup>th</sup> edition, I added in Attachment 2, a David Letterman style, "Top 10 List" of attempted humor in this rag.

**8.** Thank you all for the support & for taking the time to read this. Riveting Reading can also be found on the NCWG Operations / Aircrew Maintenance Webpage. If you have questions, call 703-732-3264.

*- Stryker -*

Martin Heller, Major, CAP  
NCWG Aircraft Maintenance Officer

3 Attachments

1. AIF Index and current dates (as of 14 Nov 19) (Separate File)
2. CAP Post Flight Checklist
3. Riveting Reading Humor Attempts – Top 10.

NCWG Riveting Reading  
(Attachment 2)

(Per NHQ CAP Critical Read Item: 9/14/2018) - Found at:

[https://www.gocivilairpatrol.com/media/cms/CAP\\_PostFlight\\_Checklist\\_Powered\\_20\\_DC7334D230B82.pdf](https://www.gocivilairpatrol.com/media/cms/CAP_PostFlight_Checklist_Powered_20_DC7334D230B82.pdf)

**POST-FLIGHT CHECKLIST**

Powered Aircraft (CVD: 16 Nov 18)

***This checklist shall be performed after every flight where the pilot disembarks the aircraft***

**EMPENNAGE**

*CHECK AND NOTE CONDITION OF ALL COMPONENTS*

TAIL TIE-DOWN / GUST LOCKS ..... IF REQUIRED

**RIGHT WING**

*CHECK AND NOTE CONDITION OF ALL COMPONENTS*

MAIN GEAR ..... CHOCK

WING TIE DOWN ..... IF REQUIRED

**NOSE**

*CHECK AND NOTE CONDITION OF ALL COMPONENTS*

ENGINE COOLING AIR INLETS ..... INSTALL COWLING PLUGS

TOW BAR ..... REMOVE & STOW

**LEFT WING**

*CHECK AND NOTE CONDITION OF ALL COMPONENTS*

PITOT TUBE ..... INSTALL COVER

WING TIE DOWN ..... IF REQUIRED

MAIN GEAR ..... CHOCK

**POST-REFUELING**

FUEL ..... VERIFY QUANTITY

FUEL FILLER CAPS ..... SECURE

**FINAL CABIN / LOCKUP**

PARKING BRAKE ..... RELEASE

AIF ..... ENTER DATA / DROP CARD, IF REQUIRED

CABIN ..... STOW LOOSE ITEMS / REMOVE TRASH

BAGGAGE DOOR ..... CHECK AND LOCK

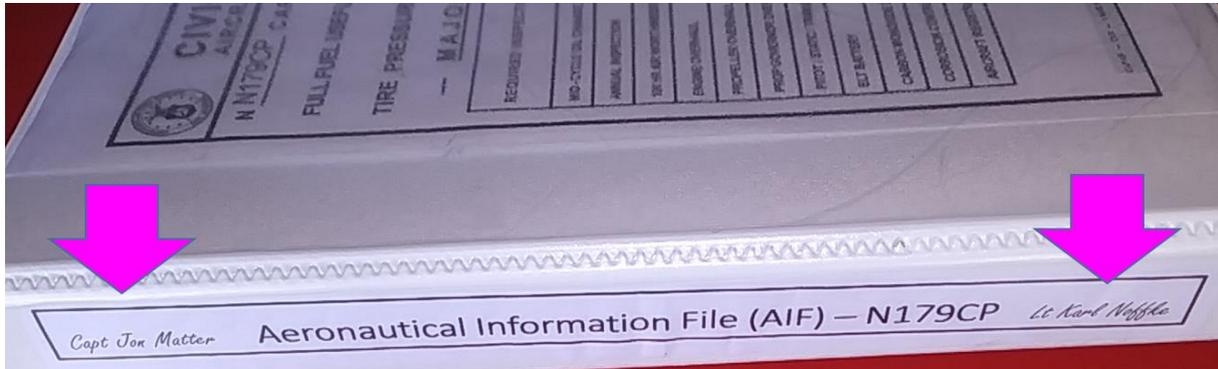
LOCK BOX ..... ATTACH, IF REQUIRED

***REPORT ANY NEW DISCREPANCIES IN WMIRS***

NCWG Riveting Reading (25<sup>th</sup> Edition)  
(Attachment 3)

**Top Ten Humor Attempts in Past 2 Years.**

# 11. “Crew Chiefs are not assigned aircraft but actually to the AIF Binder, and also to the airframe that carries it around. They can even put their names on the side of the binder.”



#10: “(Maintenance did ...) a lot of work on the instrument panel lights. Now, pilots won’t have to wear mining flashlights to fly at night... (Nov 2019).

#9: “NXXXCP was drinking oil like a drunken sailing ship. A quart or more an hour tells you an intervention is needed.”(Nov 2019).

#8: “**2018 Crew Chief of the Year**” (For never missing an oil change, pitot-static check, nor submitting the end-of-month activity forms late): **Major Ricky Jones – N437BA (NCWG glider)**

#7: The **Aircraft Maintenance Reporting and Documentation (AMRAD) program** has been up for 5-weeks. “It’s the greatest invention since perforated toilet paper.” But that’s the rub, everyone has to use it.... While there are some growing pains, we’ll learn to love and need it, as we do ‘TP.’ (Oct 2019)

#6: **Prop “Strike” (JA):** N179CP’s propeller walked off the job o/a 7 Sept and travelled to KBUY to air its grievances. Concerned, NHQ paid more than four thousand dollars of attention to address its issues. Satisfied, the propeller has decided to return to work at KSUT while the engine TBO changeout was completed. (Oct 2019)

#5: ... perhaps feeling left out (*no mx issues*), Nxxxxx’s pilot did some soul searching and found his ‘soles’ on the upper rudder pedals during landing. Two tires later, we remind you we already have learned this lesson; “keep heels on the floor during approach & landing....” (April 2019)

**#4:** A level I diagnostic of **NXXXCP**'s GTX-345R did not bring long-range sensors back on-line. Aircrews are restricted to Mark 1, eyeballs for short-range, traffic scans. (Mar 2019)

**#3:** And despite the moral & morale issues, we denied KAVL's \$300 request for a stripper. Thus, older, senior members took it upon themselves and spent four hours removing the decals on the wing top of N963CP. New CAP and Stars and Bars decals were installed (see photos...). (Oct 2018)

**#2 ...yet another, broken left pilot side window hinge.** Maintenance had to re-repair a similar fix... Including parts, **it's about a \$320**. That is why we (NCWG) don't fly with the front windows open and ensure they are closed even before the run-up. If you catch a crew member flying with the window open, please threaten them with the fire extinguisher. If they say, "Cessna authorizes it", you are permitted to swing. Expect to see that in NCWG 66-1's new supplement. (Sep 18)

**#1: Lost and Found:** Still looking for the owner (cadet?) who left this hat in one of the airplanes from encampment (probably not kosher to wear). (Jul 2019)

Disclaimer: This should have had a JA warning but that would have reduced its humor potential. That said, I apologize for the aggravation it caused Wing Leadership.

