

## “Riveting Reading”

Civil Air Patrol  
North Carolina Wing  
Aircraft Maintenance

Aug '21. Vol #45

By Lt Col Martin ‘Stryker’ Heller



(Left) N99832’s Exhaust pipe hole. No wonder the aircraft sounded so loud. (Right) N963CP’s engine was removed & shipped out to Oklahoma for study. No one knows why it’s making noise & metal.



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

**1. Motivational Quote:** “People often say that motivation doesn’t last. Well, neither does bathing – that’s why we recommend it daily.” - Zig Ziglar.

**1a1. NCWG Director of Operations (NCWG/DO) Comments:** Even a brief review of Riveting Reading gives the impression of being busy. It just cannot do justice to the OpTempo. July was the ‘B’ word: “Beast.” I cannot thank enough of you. People, as usual, stepped up all over the chart. Thank you for your efforts, your patience, your resilience. God bless the USA, but you are the gifts that keep on giving. Now, we need to sit down with some coffee, tea, or a distilled beverage and THINK about the really important stuff. You and your family. I am not taking sides; however, the forces of panic are about to overwhelm us again. With prudent THOUGHT please make sure your gas tanks are full, you have a fresh 12-pack of toilet paper and water, a cooler with cold packs, your pet’s meds are up to date, your batteries are fresh, and you have (some) cash on hand. The list goes on but your greatest assets are your training and your ability to maintain rational thoughts. Use them today and let’s survive the next moron movement through the red lights. Stay sane, M (“Lobster”)

**1a2. NCWG Director of Stan/Eval (NCWG/DOV) Comments:** August is a month full of vacations, traveling and other activities so we’re going to take a break from the Teams Meeting format for the CT meeting. As part of the largest single engine Cessna fleet in the world I thought this would be a good time to take a look at a fascinating webinar on the decision to go straight ahead or turn back in the event of an engine failure immediately after takeoff. Brian Schiff from the National Association Flight Instructors has put together an excellent webinar on the subject. The link will be sent out in the next day or two so in between time at the beach and lobster dinners take a look at it. The September CT meeting will be on Monday September 6. It will include time for us to comment on Brian’s webinar. Respectfully, (“Speedway”)

**1b. July Highlights:** NCWG flew ~ 588 hours, 93 more than June’s impressive 495 hours. Three C-172s (N4813C, N98426 and N908CP) supported the National Flight Academy at Camden, SC (KCDN). Lt Col Jeremy Browner again instructed and NC-170 C/Capt Justin Endre (NC-170) soloed in N98426 while there. Another, all available aircraft, US Army AOB mission flew 25-29 July. During this time, cadets were off at the NCWG Summer Encampment without orientation rides due to the combined COVID protocols and the distance from the closest airport to Camp Butner. We also flew flights for the Air Nat’l Guard at Stanly County (KVUJ), besides our normal operations and training.

### 1c. Top Hour Flying Squadrons:

Despite all the maintenance requirements, July was the busiest month since June 2018 where we had three more aircraft (N963CP, N358CP and N9930E) in NCWG’s fleet. Since NC-019/KAVL has been swapping C-182s while N963CP is down, they still flew 80 hours: **N99885 beat last month’s 60 hours with 62.** NC-022/KBUY flew 54 hrs on N262CP. KEWN/NC-160, along with two deployments, flew 47 hrs on N98426. As impressively, NC-171/KFAY flew 37.5 & 48.3 hours on N727CP & N4813C respectively. NC-048/KRDU – 44 hours on N726CP, NC-023/KILM – 44 hrs on N908CP, NC-145/KLHZ flew 39 hrs on N7360C. NC-121/KJQF (& NC-019/KAVL) – 36 hrs on N716CP. NC-162/KSVH – 33 hours on N819CP. NC-082/KINT and NC-305/KECG/KONX – both put 32 hrs on N405CV & N741CP respectively. NC-170/KSUT—31 hrs on N179CP, NC-082/KINT—28 hrs on N99832. Only one functional airplane

didn't hit but was close to NCWG's 20-hour goal. – Not the same one as last month; and it was down almost half the month for not one, but three different, maintenance issues. Read on and see.

**2. Maintenance Month in Review:** **N938CP** was released from FAA custody but with extra wiring & antennas. The Aero-Net radios were temporarily removed and it came home to KLHZ on 5 July. But an aircrew discovered the FLIR system was offline and repaired two weeks later at **KTTA**. For those counting, **the NCWG FLIR program was fully out of service two months, from 17 May until 21 July.**

Now, one of two aircraft has been returned to service. **N963CP** is expected to be down for another two months. Even with the new pushrods, **N963CP** is still making medal and noise. After being relocated to **KSUT** and all sorts of tests and disassembly done, NHQ decided on 22 July to send the engine to Oklahoma for repairs. The engine left **KSUT** in a crate on 28 July.

**2a. Aircraft in Annuals:** *'With Great Hours Comes Great Maintenance Responsibility:'* 9 annuals & 4 oil changes.

**N99832 "Spartacus":** Arriving on 30 June, **N99832's** cylinder exhaust to the muffler pipe had hole rusted through it. Kind of the reason we have the CO monitor in your aircraft. You do check it each flight, right? Where's that written? Try looking at the bottom of the AIF cover page. The seatbelts were also worn out, and got replaced. The pilot yoke center trim was re-glued, the LT rear seat armrest re-installed, the pilot door lock repaired and the magnetos were re-timed. **N99832** went to KLHZ on Fri, 16 July in support of next day glider operations.

**N727CP: "Scottie"** came in for its annual at the 99.2-hour mark. The propeller governor was throwing oil as it was leaking at pressure relief valve. It was sent out to H & H Triad Aviation at KBUY who overhauled the governor 15 months ago. They repaired under warranty; even though it passed 3 months earlier. 8\*) On its 98<sup>th</sup> hour, the G1000 revisionary mode started acting up, so maintenance looked at it, but could not duplicate the problem. The pilot and copilot seat bottoms were reglued and a broken DF antenna was replaced. **N727CP** went home on 19 July after the weather cleared.

**N405CV "Loki":** The #4-cylinder temperature probe was replaced. Several exhaust gaskets replaced as well as the left, main tire. The new ELT battery was ordered but took a while to arrive. **N405CV** went home on July 19<sup>th</sup> once the weather cleared. We'll install the new ELT battery the next time **N405CV** is down at **KSUT** (not due until Sept).

**N726CP "Betty":** The number #4 spark plug needed replacing as did the right tire. **Betty** went home on 24 Jul.

**N938CP "Max":** NHQ directed the install the Aero-Net radio system on our CAP aircraft which the NC Emergency Services funded FLIR system. Despite weight, complexity and lack of interoperability concerns from NCWG, **N938CP** was relocated to Alabama on May 17<sup>th</sup>. But after the install, the FAA grounded all nine CAP Aero-Net radio aircraft due to lack of proper documentation and their approval. Thus, **N938CP** sat in Alabama more than a month. CAP and the FAA negotiated a deal and aircraft were allowed to return to operation without the Aero-net radios in the newly installed equipment stack in the cargo area. (This also make access to the battery difficult at best). Once back in NC, a FLIR aircrew discovered the FLIR display wouldn't power up; leaving the aircraft only partially mission capable. So 'Max' travelled to **KTTA** for evaluation & repair on the 'fried monitor.' A few days later, during its 100-hour inspection, the contract maintenance shop found several irregularities and a hazard report was generated. 'On an abundance of caution,' NHQ senior leadership took prompt action to ground the other 8 Aero-Net affected aircraft until they are inspected & corrected if necessary. **N938CP** is still in its 100-hour inspection at this time.

**N716CP "Caroline":** Fixed the illusive left navigation light problem. Also, the mission system circuit breaker pop was due to the satellite radio connection, not the Viper radio as originally thought. The aircraft came out of 100-hour inspection on 30 Jul and will stay at **KAVL** for a time since **N963CP** is down.

**N99885 “Echo”:** Getting another 100-hour just 70 days since its last time, **Echo** only needed a broken cowling shock mount fixed, some baffling re-secured and all the sparkplugs replaced. **N99885** was back on line on 27 July.

**N908CP “Flo”:** Just needed a left main tire, the cargo door latch was repaired and another loose dip-stick was noted and secured. We received a heads up, that the right flap lower skin has enough cracks (6) to warrant reskinning that surface at the next 100-hour inspection. **Flo** came into maintenance directly from an AOB mission on 28 July and came out 31 Jul.

**N741CP “Bleu”:** Arriving on Friday, 30 July, its GPS 1 was not receiving any satellite. Also, the elevator trim wheel was excessively tight and affecting autopilot ability. Expect more details, if any, in next month’s Riveting Reading.



**Pop Quiz:** What does NCWG’s July Flying and a USAF C-5B Galaxy aborted takeoff have in common? Answer: *A lot of ruined tires.* The surprising news is that it’s rare lately that both tires needing replacing.....Just the left or right.... Infrequently the nosewheel. Probably because pilots are trying to make that taxiway turn off. One possible option is to overshoot the turnoff, and when under control, turn around and come back.... Be sure to let others know; especially if the next taxiway is a thousand or more feet away.

## 2b. More Maintenance Actions:

**N4813C’s (Frank)** flaps got stuck down again. We had maintenance take another look before sending the aircraft to MAR’s Nat’l Flight Academy (NFA). Cape Fear Airworks checked the system, tightened the cables and re-aligned the flap position indicator so it accurately reflects the deflection angle. While at NFA, **N4813C** got a *brand-spanking new*, rear tie-down ring-- because a cadet ‘spanked’ the tail on landing. Of course, incident ownership goes to the CFI sitting right seat, and neither aviator was a NCWG asset. **N98426: Sarah** got an oil change while down at NFA in South Carolina. **N4813C, N98426** and **N908CP** returned home from SCWG on 18 Jul. Right afterwards, **N98426** traveled to Virginia to support their summer encampment.

**N7360C “Lola”** had new fuel pressure meters installed and some resistor wiring for the magneto sensor by Total Flight Solutions. **Lola** also had an oil change late in the month. **N819CP:** On 20 Jul ‘**Dixie**’ got an oil change timed perfectly with the flat spot earned on the previous flight. A few days later, fuel stains were noted in the upper interior. Apparently, the old plastic fuel vent lines were cracked and dry-rotted. **Tow Hook status:** The new tow hook, and (old) sideview mirror are at KSUT waiting for ‘**Dixie**’ to make it down; sometime after the AOB missions. **N262CP: ‘George’** had an oil change the next day and the nose strut serviced. **N716CP: ‘Caroline’** traveled to KAVL to get its oil pressure sender/transducer replaced as the home station maintenance shop couldn’t get to it in a timely manner. It stayed in KAVL for 2 days of AOB missions then went in for its 100-hour inspection there. **N726CP** had its idle adjusted as pilots complained **Betty** was just too slow. **N99885** got its #2 Comm-Nav, a KX-155 replaced as the digital frequencies were no longer readable at night. Later, its GPS-400 card failed and NHQ mailed out a replacement. It took NHQ/LG a little extra time to order it because it required, NHQ rob the Nat’l Bank of Montgomery to pay for both the new ‘orange’ card & new ‘orange’ USB adaptor needed to run it. (See 2c.)

**N179CP:** The pilot’s door started acting up – first the keylock started spinning, and then the window spring broke. ‘**Sandy**’ will be pulled into the shop next week when the shop’s time and workload permits.

**N99885:** Closing out the month, ‘**Echo**’ decided to leak hydraulic fluid from the nose strut, canceling the two CAP Form 70-5A rides scheduled today and capping her hours at 62 rather than 65 for the month.



New Garmin  
USB 16MGB  
Card & Adapter

2c. (Left): New Garmin GNS 400→430 Card Reader has an orange label. **Lt Col Ray Davis** advises: Garmin and Jeppesen have upgraded their software/hardware. The new **ORANGE** labeled card will not work with the old (**BLACK** Label) SkyBound USB adapter. The JDM latest software download has also been updated for the **ORANGE** adapter interface & may not work with the OLD **BLACK** USB SkyBound adapter. The 16mb **BLACK** data card still should work with the **BLACK** labeled SkyBound USB adapter as long as the JDM software Skybound update is not loaded. **WARNING: do not download the JDM latest software** as the Skybound update is already included. Note: new 16mb Data Card is \$249 and new adapter is \$79 + shipping.

### 3. Aviation Maintenance Support Information:

**3a. GPS database current cycle (2107) started July 14<sup>h</sup>.** Please update both changed & next due dates in AMRAD.

**3b. Clean Machine/Dirty Bird List:** All good: thanks for the hard work in cleaning off those suicidal bugs & insects.

**3c. Survival Kits:** While most kits don't 'expire' until 31 July 2022, I replaced the batteries on those kits that pass through KSUT, or during other opportunities, extending their expiration date 3 more years until 31 July 2024. The kits could really go 10 years based on battery life, the fact that the MRE's were replaced two years ago, & the Pelican case protection. However, we probably want to replace the water packages in three years & take another look at what's inside. Aircraft already updated include: N179CP, N405CV, N4813C, N727CP, N741CP, N7360C, N908CP, N938CP, N963CP, N99832, N98426, N819CP and N99885. →→

**3d. NCWG Special Missions Calendar:** New product is found at: <https://ncwg.cap.gov/directorates/operations>

**3e. Who Flew and Who Knew? C-182:** Attachment 1 shows the WMIRS 2.0 historical tracking of who spend the most time in the left seat, and also in other aircrew roles. The time period is 1 Oct 2015 (FY16) until 27 July 21. The left seat hours totals were pulled by the Pilot Summary Report. The total seat time comes from each individual's Mission Participation Log. I also noted the individual's first flight as some pilots are newer members. The listing **doesn't include** members who are no longer in NCWG or perhaps no longer in CAP. The other drawback is this is available data—meaning it doesn't capture possibly hundreds of flying hours of our more senior members prior to Oct 1<sup>st</sup>, 2015. Hopefully members have personally tracked that information.

**3f. New POH Updates for G1000/GFC700 Aircraft:** NHQ sent out 7 sets of page inserts for our newer C-182 and sole C-172 with the newer Garmin Systems. Tina Redner just forwarded them on to the principal crew chief. Please let me know when you get yours and if you have questions. (Note: N963CP's checklist is coming to KSUT.)

**4.** Thank you all for the support & taking the time to read this. Riveting Reading is available on the Wing website (NCWGCAP.org) under 'Members/Operations/Aircraft Maintenance.' For questions, call 703-732-3264. →→

*- Stryker -*

Martin Heller, Lt Col, CAP  
NCWG Aircraft Maintenance Officer

Attachment

1 Total Pilot & Airplane times – top 35, FY16→ 27 July 2021

Attachment 1  
 Total NCWG Pilot and Airplane Hours  
 FY 16 → 27 July 2021 (since WMIRS 2.0) started tracking times.

Pilot Name	Unit	Left Seat Total Hours	Left Seat Ranking	Total Airplane Hours	Total Hours Ranking	First flight in WMIRS 2.0 (FY16) *
Herring Jr, Morris C	NC-171	836.6	1	1090.7	1	10/18/2015
Courtney, Wallace C	NC-019	591.5	2	755	2	10/24/2015
Davis Sr, Raymond G	NC-019	258.2	27	754.5	3	10/21/2015
Briola II, Donald A	NC-019	341	13	695.6	4	10/30/2015
Shelley, Gary M	NC-057	321.5	15	664.3	5	10/11/2015
Urbanek, Matthew D	NC-001	503	3	630.6	6	10/15/2015
Fiedler, Harald P	NC-019	426.3	6	593.2	7	10/6/2015
Malott II, Daniel W	NC-305	464.2	5	592.8	8	11/25/2015
Lee, Jong I	NC-121	391.6	9	582.4	9	10/1/2015
Peters, Wendy J	NC-048	387.8	10	581	10	7/26/2017
Heller, Martin B	NC-170	282	21	522	11	10/13/2015
Bennett, Michael T	NC-145	478.6	4	514.7	12	3/24/2016
Bailey, Christopher T	NC-145	399	8	510.4	13	10/7/2015
Dawson Jr, Charles H	NC-022	414.2	7	509.8	14	2/6/2016
LeCompte, Malcolm A	NC-305	287.4	20	508	15	10/9/2015
Netherby, Richard J	NC-145	385.8	11	448.4	16	10/11/2015
Stevens, Scott E	NC-019	274.6	22	434.2	17	10/15/2015
Mouat, Brian J	NC-160	315.9	16	412.7	18	11/24/2015
Jones, Ricky R	NC-079	362.2	12	398.2	19	10/7/2015
Rosemond, J. Malone	NC-022	217.4	32	390.9	20	10/18/2015
Ragland, Larry J	NC-001	298.9	17	387	21	10/31/2015
Rimmer Jr, Robert S	NC-079	328.2	14	377.8	22	10/15/2015
Bailey, Robert Jason	MAR-001	199.2	39	374	23	3/30/2016
Farkas, Jeffrey D	NC-023	243	29	367.5	24	10/15/2015
Ish, Edward L	NC-305	247.2	28	362.3	25	10/15/2015
Pfefferkorn II, James W	NC-022	296.7	19	340.3	26	10/6/2015
Engstrom, Eric R	NC-171	298	18	323.5	27	10/14/2015
Coffee, James E	NC-171	264.8	26	322.8	28	2/17/2017
Wilbanks, Ronald T	NC-121	271.5	24	318	29	11/15/2015
Fountain Jr, William L	NC-162	273.4	23	317.4	30	10/17/2015
Williams, Donald W	NC-048	233.3	30	315.7	31	11/24/2015
Lincoln, Carlisle A	NC-011	216.8	33	300.3	32	10/6/2015
Carrion, Armando	NC-162	266.2	25	282.4	33	10/3/2015
Van Wagner, Paul A	NC-171	209.5	34	265.2	34	3/30/2016
Moore , Jason D	NC-143	226.1	31	261.8	35	1/19/2017

Note: Some pilots didn't start with NCWG until later (highlighted in brown). On the other hand, many of the more senior pilots have time logged before 1 Oct 2015 which is not accounted for above.