

“Riveting Reading”

Civil Air Patrol North Carolina Wing Aircraft Maintenance

Feb 1, '21. Vol #39

By Major Martin ‘Stryker’ Heller



Photo by Capt Brian Mouat NC-160, KEWN. Flying to Kitty Hawk is on most pilots’ bucket list. Notice the large granite rudder on the mound in tribute to the Wright Brothers.

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

1. Motivational Quote: *In theory, there is no difference between theory and practice. In practice there is. And when theory and practice clash, practice always wins. “Linus Torvalds; Inventor of Linux Computer Operating System.* In maintenance, occasionally it seems something shouldn’t affect another, or be broken; but it is.

1a. NCWG Director of Operations (NCWG/DO) Comments: See Attachment 1.

1b. NCWG Chief of Standardization and Evaluation Comments: Recommend everyone mark their calendar for the upcoming AOB mission June 15-29 and ramp up O-rides and training to keep current and proficient.

1c. Jan Highlights: NCWG flew ~**320 hours** in Jan; nearly 30 more than December’s 292.6 hours. **N727CP** returned to service on 19 Jan after an autopilot servo needed replacing. **N819CP**’s engine is still out in Oklahoma awaiting a crankshaft replacement. **Top Hour Flying Squadrons:** **NC-022/KBUY**’s **N262CP** (36.9), **NC-019/KAVL** sharing both **N99885 & N99832** flew 51.6 of the 30+ hours each on both aircraft; with another 15 hours on **N963CP**. Of course, they had an advantage starting out at 2,164 ft MSL. **NC-121/KJQF-N716CP** flew 26.7 hours, **NC-171/KFAY--N4813C**, 26.1 hours & **NC-048/KRDU** flew **N726CP** 25 hours. Just about at or above the 20-hour monthly goal includes: **NC-145/KLHZ—N938CP & 7360C**, **NC-023/KILM—N908CP**. One aircraft flew less than 10 hours without a maintenance excuse; better than December as three other squadrons stepped up their game.

1d. January’s NCWG Top Left Seat time pilot was Lt Col Rheta Courtney, NC-019 (KAVL) with 15.7 hours.

The top ‘C’ Mission pilot was SM Timothy Higgins/NC-019 (KAVL) flying 4.8 hours.

2. Maintenance Month in Review:

2a. Aircraft in Annuals: **N262CP (George)** Right tube replaced due to a slow leak, nose wheel bearing and races replaced due to corrosion and both Rosens (a.k.a. sunshades) tightened. It also had a strobe, landing light and a position light replaced. If you’re wondering where to invest, aircraft lighting companies seemed to be doing well for the prices charged. One squawk is that the autopilot seems to quit on occasion couldn’t be duplicated and didn’t re-appear until the aircraft returned home.

N405CV: Loki had magneto overhauls, new sparkplugs, a new master switch, swapped main tires and new brake linings due to wear, replaced the nose wheel tire, had the Propeller Governor AD reviewed (not applicable) and new anti-skid pads applied to the wing strut step. It needed the G1000 magnetic variation Kabuki Dance update. Weather delayed Loki’s return home until 18 Jan. A week later, the electric fuel pump started getting flaky and noisy. Since it’s on the KOEL as a mandatory item, **N405CV** is being repaired by local maintenance.

N938CP: Max had its mag var updated, its elbow on FLIR monitor arm welded, ‘B’ stamped on the prop governor completing that AD, besides all the other normal 100-hour/annual maintenance. **N938CP** went home on 22 Jan.

N99885: Echo needed a new left wheel brake caliper, left main tire and nose strut mount. No cracks in the Wings spar (see atch 4 for AD 2020-18-1 status). Prop dressed. It moved back to **KSVH** on 24 Jan.

N99832: Spartacus was bounced around to **KSVH** then swapped with **N99885** while **N819CP** is undergoing engine work. It’s up at **KAVL** starting the annual as you read this. New eyes see things that other pilots just accepted. The squawk list is a bit long; not surprising for a 36-year-old airplane. Nothing seems to be major except possibly the wing spar AD. →→

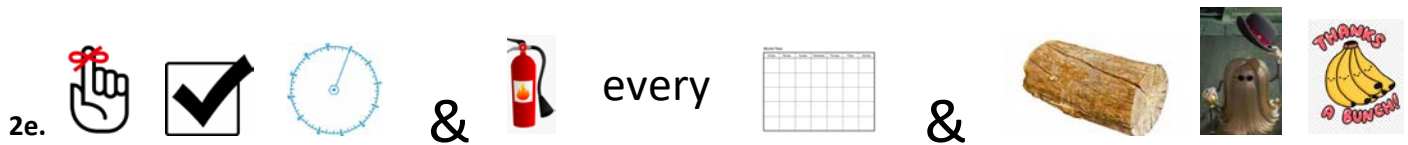
2b. More Maintenance Actions: N9930E is still awaiting confirmation on its oil filter adapters for Continental engines. The older Cessna strut attachment point AD is still active. Oil changes: **N4813C, N98426, and N179CP.** Sandy also had its copilot window broken spring replaced.

N741CP (Bleu) started the year with what seemed to be avionics switch failure. We call ahead to make sure the part was available before dispatching the aircraft for repairs. It was a text book repair for the symptoms. Unfortunately, **Bleu** was on a different page and returned back to the on 29 Jan shop for an avionics circuit breaker. **Crew Chief Doug Hansen** spent a lot of effort running that issue to ground. Not to be outdone, **N405CV (Loki)** didn't even start the year due to a dead battery losing two sorties. The battery was charged at home station (as if there was an option). **N727CP's** tale of problems continued with a failed autopilot servo; after a rebuilt PFD and electric fuel pump. A few more days and dollars, **'Waldo'** tried going home after the weather cleared. However, a new maintenance issue arose while in flight. The pilot smartly diverted back to **KSUT**; even got accolades from the mechanic for it. Two days later, **N727CP** returned to **KFAY**. Squadron leadership feels the new nickname has jinxed it & will remove the Waldo label. **N7360C** had a nav light replaced along with updating the connector on the EFIS display which should provide better display information.



2c. Recognize this? Here is a hint: It's in all our G1000 aircraft. No, it's not an ejection button, but rather the copilot (2) ← → / Mission Scanner (3) transmit select switch. Because CAP equips their aircraft with 2 - 3 extra radios and 3 transmitting positions, both a second annunciator panel and a 'either/or' transmit select button are needed. So, if the copilot position doesn't seem to transmit, make sure this Eaton switch is not on seat 3.

2d. Integrity Counts: Availability is also important when dealing with airsickness bags. A recent event reminds us to ensure these hazmat containment fields are readily available at all seats. While confirming location, ensure they aren't so old or dilapidated, that they'll do their job. One technique is to give new passengers and cadets a bag to keep under their leg. This way, they don't have to ask. They'll return it after the flight, just like the 20 people before them. Another method is the shirt pull; sounds like a plan but might not work. Proper planning prevents projectile particle placement.



3. Aviation Maintenance Support Information:

3a. GPS database current cycle (2101) started Jan 28th. Remember to update AMRAD; both changed & next due dates. Ever wonder why your G1000 keeps asking if you want to use an old navigation database instead of the current one? It's because some good-looking crew chief uploaded a navigation database on the data logging SD card. Until you delete the .jdm file and the ldr_sys folder, you'll get that message on every start up. Hence, navigation database uploads should be done on a separate SD card. Speaking of data logging, how many of you noticed that new G1000 checklist item? If so, raise your hand. If you found the Aux/Utility page where it is shown, use that hand to pat yourself on the back. →→

3b. Free ForeFlight for pilots and Cadets in pilot training: MG Smith, National Commander, announced (attachment 2) a deal reached through the USAF that provides CAP pilots/Cadets in pilot training, the Military Flight Bag performance application; it's their highest level of features in ForeFlight. I confirmed with ForeFlight that it supports geo-referenced charts and interfaces with Status/other ADS-B units. The letter has links for FAQs. People with subscription could get a refund (see FAQs). That's like up to a \$360 savings/year that CAP just got for many of us aviators. →→

3c. Cape Fear Air Works (KSUT) Owner & Chief Mechanic earns FAA's Charles Taylor Award. (See attachment 3).

3d. De-icing Using Hot Water: “What?” That’s what I said....it will refreeze. But not if you fill a gallon Freezer Ziploc at the FBO just before walking out to the airplane. Use the bag as a heat source and sit it on the area to melt ice/frost; maybe even double bag it to prevent leaks. It worked well for Lt Col Jeff Farkas who then had a hot water bottle to stay warm. Perhaps adding hot chocolate would make it a triple treat. →→

3e. Please Leave AMRAD entries to the crew chief: (Repeat) With maintenance costing \$75-\$125/hour, we don’t want to waste gov’t funding trouble-shooting problems that may not exist. If you find something on the aircraft you don’t believe is working correctly, bring it to the crew chief’s attention. They will validate it before we spend money. Also, considering all who can see AMRAD, we try to keep it inspectable. Crew chiefs learn what, how and when to add discrepancies. There have been several recent, ‘operator error’ close-outs to pilot entered discrepancies. →→

4. An Additional 12 minutes of Sardonic Educational Aviation Material: You may want to watch AVweb's Paul Bertorelli’s piece on flying non-towered traffic patterns at: <https://www.funplacestofly.com/blog.asp?ID=3298> →→

5. Thank you all for the support & for taking the time to read this. Riveting Reading can also be found on the Wing website (NCWGCAP.org) under ‘Members/Operations/Aircraft Maintenance.’ If you have questions, call 703-732-3264.

- Stryker -

Martin Heller, Major, CAP
NCWG Aircraft Maintenance Officer

4 Attachments

1. NCWG/DO Comments
2. NHQ/CC ForeFlight Announcement, 26 Jan 2021
3. FAA Charles Taylor, Master Mechanic Award Announcement
4. FAA Advisory Directive (AD) Tracking

NCWG Director of Operations Guidance

Attachment 1

Leaders have goals, managers have objectives. We who manage Air Operations do just that: operate in the air. (Sometimes we pull it out of thin air.) Our present situation involves several factors. On the plus side the NCWG will soon receive permission to fund all of you who have allowed your Form 70-5 and 91s to expire. On the other side we only have to contend with very low numbers concerning our aircraft, the weather, and the ever-tiring COVID menace. To be blunt: when the going gets tough... Help us to maintain this magnificent fleet by scheduling some time, submitting for funding, developing some training, and making a difference. It will beat the daylights out of watching the news...

M

Matthew D. Urbanek, Lt. Colonel, CAP
North Carolina Wing Director of Operations
Matthew.Urbanek@ncwgcap.org
828-432-6066 / 207-563-5066

Attachment 2



OFFICE OF THE NATIONAL COMMANDER
CIVIL AIR PATROL
UNITED STATES AIR FORCE AUXILIARY
MAXWELL AIR FORCE BASE, ALABAMA 36112-5937

26 January 2021

MEMORANDUM FOR ALL CAP REGION AND WING COMMANDERS

SUBJECT: CAP ForeFlight Announcement

1. I am pleased to announce that as part of the AF Total Force Program, CAP has been included in the Air Force purchase of the ForeFlight Military Flight Bag Performance application.
2. All CAP pilots with a VFR rating or higher and cadets participating in approved CAP flight training programs are eligible to benefit from this free program. The CAP NHQ ForeFlight team will enroll all cadets currently participating in the Wings Program, but other cadets who are funding their own training or utilizing wing or other local scholarship funds will need to reach out to the CAP NHQ ForeFlight team to be added after coordination with their chain of command.
3. The roll out will begin with a short ForeFlight survey sent out to all eligible pilots via email from SurveyMonkey on 27 January.
4. The CAP NHQ ForeFlight team has posted answers to several anticipated frequently asked questions from early adopters and will post supporting tools and training as they are ready at: <https://www.gocivilairpatrol.com/foreflight>. Additional questions regarding this program can also be sent to the CAP NHQ ForeFlight Team at ForeFlight@capnhq.gov.

A handwritten signature in black ink that reads "Mark E. Smith".

MARK E. SMITH
Major General, CAP

cc:

CAP/CV/XO/CCC/COO/COA/CP/DO/FM/GC/GVR/IT/LG/MAC/NOC/SE

CAP-USAF/CC/CV/DO/DT/JA/LG/SE

All CAP Region and Wing CV/CS/CP/DC/DO/DOC/DOH/DOS/DOU/DOV/LG/SE

All CAP VFR Pilots and Cadet Wings participants

Attachment 3

NCWG Aircraft Consolidated Maintenance Shop Earns FAA Charles Taylor, Master Mechanic Award for 50+ years of Experience.

Southport, NC: Mr. Richard Gwin, Owner and Chief Mechanic of Cape Fear Air Works received the FAA's Charles Taylor "Master Mechanic" Award on 29 Jan at his facility on the Cape Fear Regional Jetport (KSUT).

The significance to CAP's North Carolina Wing is that Mr. Gwin is one of the primary maintainers of our fleet of 18 airplanes. For the past six years, he and his shop have worked on every one of our airplanes, usually up to three, 100-hour inspections per year. 'Rich treats our fleet of aircraft like his own' stated Lt Col Chris Bailey, NC Deputy Chief of Staff. "He's always looking out for us, easily reachable and finds ways to meet our needs.' From routine work to engine change-outs, touch up paint, avionics repairs and upgrades, to interior and upholstery, Rich makes sure it gets done right. He is a big part of how we have five 1986 model or older airplanes running and looking nearly brand new. "More than anyone in CAP, we trust him with our lives."

Rich Gwin is a teacher at heart. His attention to detail is unmatched. He diagnoses why something broke, teaches his assistants and comes up with a solution that prevents the same failure again. With the continuous expansion of the NCWG aircraft fleet, we also use other shops, but ensure each aircraft comes back to Cape Fear Air Works at least annually. Rich Gwin started out in the airline industry, first at ramp service while earning his Airframe and Powerplant license in 1967. He rose through the ranks to become TWA's Director of Maintenance operations at St. Louis, their main hub. Rich then worked for American Airlines, Northwest Airlines, Piedmont Airlines, and U.S Airways. He retired from the airlines in 2003 as the Hub Director for US Airways Line Maintenance in Charlotte, NC. In 2007, he founded Cape Fear Air Works in Southport, NC.

The Charles Taylor **Master Mechanic Award** is named in honor of Mr. Charles Taylor, the first aviation mechanic in powered flight. The Charles Taylor "Master Mechanic" Award recognizes the lifetime accomplishments of senior mechanics. Mr. Taylor served as the Wright brothers' mechanic and is credited with designing and building the engine for their first successful aircraft. Mr. Gwin is one of the FAA's 3,015 recipients nation-wide. Eligibility includes holding an FAA repairman certificate, have 50 or more years of civil & military maintenance experience, be a U.S. citizen & not have NOT had any airman certificate revoked.



Attachment 4

NCWG Fleet Compliance with recent Advisory Directives (ADs)

AD 2020-19-06, effective Nov. 3, Affects propellor governors' idler gear bearing. Complete within 50 hours or next oil change or 100-hour, whichever comes first.

Status	Tail #	CAP Acft Model	Based	Plan	Remarks (Prop Governor)
Cleared	N405CV	C-182T	KINT	Completed during 100-hour inspection at KSUT	Serial # N/A. 'B' stamped on gov
cleared ^{1,2}	N741CP	C-182T	KECG	Need logbook & prop gov stamped at 100HR	Rebuilt: HH Triad 8 Mar 16 under WO 21396 (B4 service bulletin)
cleared	N819CP	C-182T	KSVH	H&H rebuilt prop & Governor - 16 Nov 20	Situation snowballed; engine getting new crankshaft.
cleared ^{1,2}	N9930E	C-182R	KIXA	Need logbook & prop gov stamped at 100HR	Rebuilt: HH Triad 8/14/2020 Under WO # 24185

¹ Prop Governor rebuilt by H & H Triad who doesn't use affected bearings. (Have H&H Triad letter).

² Still need logbook entry to close out the discrepancy by acknowledging that AD 2020-19-6 is N/A

AD 2020-18-01: Cracks found in the lower area of the forward cabin doorpost bulkhead. This AD requires repetitively (every 36 months) inspecting the lower area of the forward cabin doorposts at the strut attach fitting for cracks and repairing any cracks. The NCWG aircraft affected are the C-172Ps; N99832, N99885, N98426, N4813C, and our lone C-182R; N9930E.

Status	Tail No	Year	CAP Aircraft Model	Tach Time to next mx (as of 20 Oct)	Based	Plan	Remarks
Open	N9930E	1985	C-182R	40	KIXA	Next 100 hr @ KLHZ	Est Feb 2021
Open	N4813C	1986	C-172P	86	KFAY	Next 100 hr @ KSUT	Est Mar 2021
Open	N98426	1986	C-172P	70	KEWN	Next 100 hr @ KSUT	Est Apr 2021
Open	N99832	1986	C-172P	38	KINT	Next 100 hr @ TBD	Est Jan/Feb 2021
Closed	N99885	1986	C-172P	70	KAVL	Evaluated at KAVL	Due again in Jan 2024

New Potential AD: After-market Oil Filter Mounts for Continental Engines in place of a brass screen. (Both F&M Enterprises and Stratus manufactured versions). NHQ mandated review and grounding if affected.

Status	Tail No	Year	CAP Aircraft Model	On-Line Record Review	Based	Plan	Remarks
Open	N9930E	1985	C-182R	Not shown	KIXA	Engine and STC logbook didn't show	Probably not-applicable; will evaluate at next oil change.
Closed	N7360C	1977	C-206-U	Not Shown	KLHZ	Physically evaluated when changing oil	Non-applicable