

"Riveting Reading"

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

June 1 '22 Vol #55

By Lt Col Martin 'Stryker' Heller



(Left) Capt Jack Martin / NC-022 proves it doesn't take a village to wash a plane.
(Right) Some crew chiefs are sending the message.

Warning
G1000 displays are not touch screens.
Leaving fingerprints may cause serious injury or Death

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

1. Motivational Quote: *"Know what you know and know what you don't know. Mixing them up will get people killed."* George S. Patton, General, USA

1a. NCWG Director of Operations (NCWG/DO) Comments: "Service to the nation is demonstrated in many ways, and for those of you who take the time to read Stryker's collection of monthly thoughts, thank you. Your continued efforts in the NCWG have been, & always will be, greatly appreciated. "Stay safe, stay sane." 🇺🇸 Lt Col Urbanek 🇺🇸

1b. NCWG Director of Standardization/Evaluation (NCWG/DOV) Comments: Between now and the end of December we have seventy CAPF 5A evaluations scheduled including forty due before the end of September. This aft loading has made the first half of the calendar year relatively sane but it will get busier from here on out so please start planning now. Talk to an Instructor Pilot and do a flight to prepare for the Evaluation. You are encouraged to do the Evaluation sooner than your current month of expiration to alleviate the congestion. The **DO will approve the funding!** As always, your commitment to CAP and the Stan/Eval program is greatly appreciated and I thank you.

Lt Col Arnie "Speedway" 🇺🇸 " Andresen, USAF/Auxiliary

1c. May Highlights: For the month, NCWG flew ~**350 hrs**: about 16 hours more than of April's **334** hours on one less airplane. NCWG again supported the US Army air traffic control training operation. **NC-019 hosted a CAP Nat'l Air Academy.** **Watch Facebook for upcoming success stories.** **N819CP** went to Total Flight Solution's new paint shop at KIXA. That stripping and paint job is expected to take 6 weeks.

1d. Top Hour Flying Aircraft/Squadrons: **NC-019/KAVL** again exceeded 100 hours between **N99885 (50hrs)**, **N99832 (17 hrs)** and **N963CP (37 hrs)**, sending all three aircraft into their 100-hour maintenance besides. It's a tremendous effort we often just accept as their 'business as usual.' NHQ doesn't track (or at least advertise) which squadrons fly the most but NC-019 is up there. **NC-022/KBUY/N262CP** and **NC-171/KFAY/N727CP** both flew more than 30 hours each. Nearly every NCWG airplane just about made the 20 hour/month goal, unless maintenance issues stopped them.

1e. Top (Hours) Pilot for May: (as of 30 May) Capt Eric Engstrom, NC-171 flew 24.7 with **Benjamin Bashinski** NC-019 logging 18.3 hours. **C/2d Lt Jackson Joel Cook, NC-019/KAVL, had the most 'C' hours flown at 3.3 hrs.**

2. Maintenance Month in Review:

2a. Aircraft in Annuals: 8 aircraft; nearly half the fleet went in, or is in for its 100-hour this month.

N716CP 'Caroline': Came out of its annual on 5 May with a newly rebuilt engine and delivered home to KJQF on 9 May. Its ladder took a few days longer, but it's the reason we have identification dog tags rivetted to their side.

N963CP: 'Gumby' needed a new taxi & landing light, and its copilot side, exhaust pipe hole patched, a new ELT battery, its propeller governor rebuilt & its biannual corrosion protection; returned to service 11 May.

N437BA (glider): (repeat) CAP's glider working group levied some new tracking requirements on gliders to in addition to the annual requirements, these issues were researched & uploaded into AMRAD. Control services were reskinned, pitot static lines replaced, canopy lock & front seat issues resolved. **N437BA** hopefully comes out of annual 'soon.'

N405CV (Loki): On its 100-hour, Loki had its bi-annual IFR certification, a low nose strut rebuilt, the pilot seat back along with the electric trim and push to talk buttons fixed. **N405CV** went home on May 16th.

N99885 (Echo): Had its primer, some broken static wicks and cowl engine mounts, an oil pressure sensor, its nose tube and tire, 3 of 4 rocker box gaskets, the instrument and vacuum filters replaced. Brakes were bleed, as was our maintenance budget. **Echo** came back on line at KAVL on May 25th.

N99832: On May 25th **Spartacus** went in for its annual. Known squawks include the rear right intercom not working. (Must be only a cadet who even sits back there on a C-172.) It's also due for magneto overhaul and corrosion protection. Once done, **N99832** is projected to go back to KSVH.

N179CP: Sandy wasn't straightening up nor flying right. After an AOB mission, maintenance discovered the nose wheel bottom support bracket 'shattered.' We were lucky not to have a nose wheel collapse & subsequent engine strike. '**Sandy**' is out for a few weeks awaiting parts, along with its 100-hour, corrosion protection & IFR cert.

N262CP: 'George' heads to KAVL for it's 100-hour, with hopes to be back before the June AOB mission. Next month, it's due to get it's six-year, propeller overhaul.

2b. Other Maintenance Issues: NCWG fleet oil changes included: **N938CP** & **N727CP** which also had its perfectly round, but well worn, left main tire replaced. The crew chief balked at drawing new tread lines on with a sharpie. **N7360C** replaced 4 exhaust gas temperature (ET) probes and its alternator fan belt. Changing a car's alternator belt is easy, but on most piston engine airplanes, one has to remove the propeller. **N716CP's** #6 EGT isn't working (deferred). **N963CP's** throttle cable was loose; not any more. **N819CP** is in for repainting then all the lights and fairings will be changed out. **N741CP** had its propeller overhauled and a new beacon light bulb. **Bleu** left KBUY on: May 17th. **N99885** needed a replacement DME. NHQ sent us one they had on the shelf, along with an ADF, a Loran receiver and an 8-track player on a slide mount. Guess they were cleaning house in Montgomery. **N726CP** also reported control issues (repeat write up). Similar to **N908CP**, an aileron pushrod was bent. One theory is another airplane did a run up behind it; forcing the ailerons against the control lock pin. **Betty** is grounded awaiting repair.

3. Aviation Maintenance Support Information:

3a. NHQ's Aircraft Maintenance Officer (AMO) Career Path: CAP/LG leaders and Wings AMO are making great progress in creating an aircraft maintenance officers (including crew chiefs) functional specialty. Crew chiefs will become AMO technicians, Group/Wing AMOs will earn Senior AMO ratings, and experienced Wing AMOs or higher can earn Master Wing AMOs. One doesn't have to be a pilot or an aircraft & powerplant technician, but it certainly helps. More to come and fairly soon. And even though AMO's "don't need no stinking badges", we'll get those too.

3b. (Repeat) SOAP (Engine Spectrometric Oil Analysis Program): I notified all of our maintenance shops (cc: crew chiefs) to use NCWG's ac-maintenance@ncwgcap.org email on their oil analysis submissions. Once received, we'll forward a copy to the crew chief to print and put in engine logbook (per CAPR 130-2). Also, I've advised the shops of the NCWG standard oil change qualities: **7 quarts for a C-172, 8 quarts for a C-182 and 10 quarts for a C-206**. It'll be about a ½ quart less on the dipstick as some oil will get stored in the oil filter. No sense overfilling and having that excess oil covering the bottom of the fuselage. Speaking of SOAP: CAP only does it during the 100-hour; and after engine or cylinder break-ins, but not normally at the 50-hour oil change.

3c. What's in the bag? NCWG has, what should have been considered, a commendable logbook tracking program. We not only keep our logbooks in a standardized, 'to go' bag, but we also a virtual copy on a shared drive. But how

do we know we haven't misplaced one/some along the way? The new CAP Form 71 (are you loving it yet?), item 1.i. requires accounting for all aircraft logbooks since new. I'll be working with the crew chiefs to develop a luggage tag for each logbook bag. This way there will be an inventory...which will change as you need more logbooks. Speaking of which, we do have some blank logbooks of various types when you/maintenance shops needs another.

3d. GPS database cycle 2205 including terrain and Safe Taxi's current cycle started 19 May. Capt Don Williams/NC-048/KRDU passed along some guidance he received from Garmin about database uploading (see atch 1).



3e. Once Again, from the top (G1000 aircraft): Please resubmit photos of your aircraft's LRU pages. You'll need to shoot the photo; press the lower right knob and then scroll down to get the rest of the information. Some of you did but we lost it; others might not have, but now can say, 'we lost it.' Send the photos alone (not combined with other info) to our ac-records@ncwgc.org and info Lt Col Ray Davis (rdavis@ncwgc.org). It may save all of us some running around in the future.

3f. Little known, CAP Reg Requirement of the Month: As a reminder, CAPR 70-1, para. 9.1.5. requires: *A secure digital (SD) card will be carried in the top slot of the Multi-Function Display (MFD) of all G1000 aircraft for the duration of all ground and air operations.*

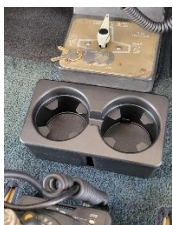
9.1.5.1. CAP/LG will provide SD cards (Usually.)

9.1.5.2. Maintenance officers shall assign and install a card in each G1000 aircraft. (← or crew chiefs.)

9.1.5.3. Only the maintenance officer, or a person designated by them, shall remove the SD card once installed. Periodic removal and reinstallation for updating database information or facilitating 14 CAPR 70-1 31 MAR 2020 maintenance is authorized. (← This is saying crew chiefs pull the card out to upload the database on another card, but then re-install the logging SD card when done. Read another way, the logging data SD card isn't for Nav data.)

9.1.5.4. Download of flight data from the SD card shall only be performed at the direction of CAP/SE as required to support safety programs. (← This is the paragraph that tells you not to mess with the card.)

9.1.5.5. Prior to flight, the PIC shall confirm that flight data logging is active by checking the AUX-UTILITY page and confirming that "LOGGING DATA" is displayed. If this check fails, a deferred discrepancy will be entered in the Aircraft Maintenance Repair and Documentation (AMRAD) application. (← Yes, it's on the G1000 engine start checklist.)



3g. Coffee Anyone? Shown right is a cupholder we found in the aviation parts section of eBay for under \$15. It has a flat bottom giving plenty of surface area to Velcro (bought separately) to the floor and it's easily removeable. I have one more if your old C-172 doesn't have a cup holder and has the floor space. Or just search eBay for "DUAL CUP HOLDER INSERT FIT FOR 07-14 CADILLAC GMC CHEVY FRONT FLOOR 19154712". It does have a slant so the low side is forward.

3h. Clean Machines: NC-022 washed N262CP on 30 April so my lambasting them was premature as the newsletter went out early last month. A day later, NC-171 washed N727CP. According to AMRAD (the Greek G-d of CAP aircraft maintenance records), aircraft needing cleaning includes: **N726CP, N7360C, N741CP, N938CP and N98426.**

4. Root, root, root for the Home Team: But what if they aren't playing? Springtime brings baseball (along with hotdog & apple pie) season, so what's your other favorite minor league baseball team? No doubt, the folks in Wilmington root for their Sharks, Fayetteville cheer for their Woodpeckers, Raleigh for their Mudcats, Asheville, their Tourists, Winston Salem for the Dash, and at NHQ, the Montgomery Biscuits. But what about the other leagues out there? Does more than one person cheer for the Los Angeles **Angel's** farm team, the Salt Lake City **Bees**, or the New England **Lobster** Rolls, perhaps even the El Paso **Chihuahuas**? There are lots of great team names out there such as Rocket City's (Huntsville) Trash Pandas, Pensacola's Blue Wahoo's, the Savannah Bananas, the Amarillo Sod Poodles, and my favorite, the Macon Bacon in Georgia. There are even flying-themed teams such as the Las Vegas Aviators, The Wichita Wind Surge, the Birmingham Barons, the Richmond Flying Squirrels, the Roswell Invaders, the Reno Aces

and the Sugar Land Space Cowboys. While there's no '**Gonzo**' baseball teams, it's a sport simulation. www.gonzosports.com/baseball. Don't have a favorite minor league baseball team? Find the list of them at: <https://www.milb.com/about/teams>.

5. Thank you all for the support & taking the time to read this Riveting Reading. All the Riveting Reading newsletters are available on the Wing website (NCWGCAP.org) under 'Members/Operations/Aircraft Maintenance.'

- Stryker  R -

Martin Heller, Lt Col, CAP
NCWG Aircraft Maintenance Officer

1 Attachments

1. Garmin Customer Support Guidance for G1000 Database Updates

ATTACHMENT 1

GARMIN G1000 DATABASE UPDATE GUIDE

Below is a typical arrangement of what database goes on what card depending on card capacity. The card size for a G1000 should not exceed 8GB.

I. Top Card Navigation Data Card Install the Following:

1. Navigation Data - update every 28 days

II. MFD Bottom Supplemental Data Card Install the Following:

1. Airport Directory - update every 56 days
2. Base map - update annually
3. Flite Charts - update every 28 days - (If purchased) OR Jeppesen Charts (customer must have a subscription for Jeppesen charts and the device must be unlocked for Jeppesen charts). Only one set of charts can be stored/displayed at one time.
4. Obstacle - update every 56 days
5. Safe Taxi - update every 56 days
6. Terrain - update annually

III. PFD Bottom Supplemental Data Card Install the Following:

1. Airport Directory - update every 56 days
2. Base map - update annually
3. Obstacle - update every 56 days
4. Safe Taxi - update every 56 days
5. Terrain - update annually

To update your G1000 after your database download insert the cards as follows:

1. PFD card goes in the bottom PFD slot
2. MFD card goes in the bottom MFD slot
3. Navigation Data Card goes in the top slot of the MFD.
4. Be sure that the aircraft is outside of a hanger when performing database updates so that it can get a date/time signal from the GPS satellite.
5. Turn the avionics suite on and allow the unit to install databases.
6. After the Navigation DB update is complete, remove the nav card from the top slot of the MFD and place the card in the top slot of the PFD.
7. After the Navigation data has been updated in the PFD remove the SD card from the top slot of the PFD and return it to the top slot of the MFD.

Note: If the software version for the G1000 is 10.0 or higher than the units will sync databases across PFD and MFD. All that is needed is for the user to upload databases onto the top and bottom MFD cards, place the cards into the MFD (top and bottom) and PFD (bottom card), and turn the avionics suite on. Be sure that the aircraft is outside of a hanger when performing database updates so that it can get a date/time signal from the GPS satellite.

END OF PROCESS