

N60RK Timeline and Pertinent Details  
Freedom Air Avionics  
May 19, 2019

July 12, 2017-First discussions began concerning the Copenbarger's Duke, N60RK and their desire to upgrade avionics.

April 6, 2018-Received email from Tom telling me that a used Aspen PFD system had been purchased for us to install on N60RK and we could expect it to arrive any day. Tom asked me to place N60RK on my schedule as soon as feasibly possible.

April 21, 2018- No Aspen equipment had arrived and various dates were discussed for project start as well as possible scope of work to be accomplished.

May 7, 2018- Used Aspen equipment arrived but not all of it.

May16, 2018- Remaining Aspen pieces arrived.

June 13, 2018- N60RK was placed on our schedule to start the project.

June 24,25, 2018- We were not getting clear direction on what our scope of work would be and needed to begin the engineering phase of this project. Sent email to Tom asking him to provide details.

July 17, 2018 – Started removing interior and panel equipment but still did not have decisions from Copenbarger's on what they wanted us to install.

July 26, 2018- Discussions included a used or new Stec 60 autopilot that Lloyd already had and wanted me to install, and possibly new Garmin TXi rather than the used Aspen system...

July, August- Continued to remove old systems and wiring but had not received clear direction so we worked on and off on this project.

August 31, 2018- Lloyd was in Colorado and he and Tom discussed "my concerns and would be getting back to me asap with decisions.

Sept 18, 2018- I sent an urgent email to Tom explaining my frustrations with the lack of communication and very conflicting direction that we had received and told him we were removing N60RK from the hangar so we could get on with other projects.

Sept 24, 2018- I sent a follow up email to Tom because we still had not heard anything from anyone.

Sept 28, 2018- Tom told me that Charles would be calling me to give me the final desired scope of work but this did not happen.

Nov 3, 2018- I sent another urgent email requesting answers to several questions and asked Tom to please give me Lloyd's email address so I could discuss things with him directly. I was never given Lloyd's contact info.

Nov 6, 2018- I received an email from Tom stating that he had talked with Lloyd. Tom asked me to call him so that "we could help Lloyd and Chas (Charles) make decisions and get N60RK back on track and get the project moving forward".

Nov 9, 2018- I sent an email to my manager Brandon after Tom and I had a good phone discussion and Tom apologized profusely for dropping the ball and allowing this project to go like it had. Tom and I scheduled a breakfast meeting for Nov 21 to meet and resolve issues.

December 10, 2018- Brandon sent an email to Tom with Estimated numbers for the latest requested work to be accomplished and asked for a \$36,000 check so we could order equipment and begin working again on N60RK.

Jan 16, 2019- We were finally able to bring N60RK back into the hangar and begin working.

Jan 16 to April 29, 2018- One to Two Technicians worked continually on this project till completion.

#### Scope of Work Requested to be accomplished on N60RK

- Garmin G600 TXi primary Flight Display
- G5 back up EFIS
- GTN750 GPS/NAV/COM #1
- GTN650 GPS/NAV/COM #2
- GMA35C Audio Panel
- GTX345R Remote Transponder
- EI CGR-30P Engine Primary instrumentation system
- Custom aluminum panel with reconfiguration of co-pilot panel

Changes and additions were made as the project progressed, adding co-pilot CDI for Nav 2, making the G5 a fully independent back up EFIS, ring lighting, etc.

While Freedom avionics was working on the airframe, we had Legacy Air, Inc. perform all of the EI CGR-30P engine installation which included running the wires through the wing root to the cabin for us to terminate and connect to the display units. Legacy Air has exceptional A&P's with significant experience doing this work and has done several of these engine system installs for us in the past. Although I did not do a "microscope" inspection of Legacy Air's installation, I did examine the wire routing and security and was pleased with the appearance and quality of their work.

Legacy Air completed their work, which included three engine runs and inspections for any fuel or oil leakage and cowled up the engines by April 15, 2019. After this, Freedom Air accomplished our final installations, inspections, interior installation, and paperwork.

Freedom Air performed a physical weighing of the aircraft to calculate weight and balance. Because the airplane had more fuel on board than we had capacity to store, we opted to fill the fuel tanks and subtract the weight of usable fuel from our calculations. This was accomplished on April 29, 2019.

We waited for good weather to perform final calibrations and testing which included three separate engine runs, the first engine run was for over an hour and included a lengthy full power run up. The next two engine runs were performed simply to test and confirm that all new systems worked perfectly, especially the engine primary instrumentation.

We then waited for good weather for Tom to be able to pick up the aircraft and fly it back to KFNL. I called Tom on May 1 to coordinate aircraft pick up. Tom told me he was applying for a Ferry Permit and came by the hangar first thing Monday morning, May 6 to look the airplane over. I had the plane in the hangar and had planned to hook up a power supply and show him all the new avionics but he did not want to do that. I asked Tom if he had his ferry permit yet and how detailed of an inspection he planned to give the airplane and he mentioned that he might ask Legacy Air to do an inspection and sign off the permit.

I asked Tom to schedule the aircraft pick up in advance and allow at least a ½ day so we would not be rushed and have time to go over everything carefully. On Tuesday, May 14<sup>th</sup> I received a text message from Tom at 11:00 saying, "Sorry, it will be closer to 1:00". I was confused because I had not heard anything from Tom and we had not scheduled our aircraft delivery time. I responded, "What will be closer to 1:00?" and Tom responded, "Me being there to pick up 60rk". Tom came to our hangar and we went through all of the paperwork in detail. After going through the paperwork, we connected a power supply to N60RK and sat in the airplane for approximately 30 minutes while I explained how everything worked from the moment of power on through normal operations. Tom asked questions and I showed him how to accomplish the tasks. Tom was familiar with Garmin glass panels and seemed comfortable with the new equipment. There were several storms in the area and Tom decided NOT to fly that day. Tom received several phone calls while he was with me on May 14 and displayed irritation at all the interruptions.

On Wednesday, May 15<sup>th</sup> at approximately 11:30 Tom arrived without warning or notification at our hangar to pick up N60RK. He appeared to be very tired. He also appeared to be in a hurry. Although we had previous discussions about a Ferry Permit, there were no inspections made nor requested by Tom or anyone else that I am aware of.

After saying good bye, I heard Tom start the engines and remember thinking to myself that it didn't seem like a very long pre-flight inspection. Shortly thereafter I witnessed N60RK take off, everything looked normal but I did observe some turbulence or rough air as the aircraft rocked briefly shortly after takeoff.

Tom was a friend of mine and I had come to know him pretty well over the past 3-4 years. My statements above about Tom's actions and appearance do not imply that I believe he was at fault in any way, they are simply my honest opinions about what I witnessed.



Freedom Air Avionics [REDACTED]

May 6, 2019

N60RK



FREEDOM AIR AVIONICS

REMOVED: Bendix/King KX-155, Apollo MX20, Garmin GNS 480, King Radio Corp KMA 24, King Radio Corp KT76A, King Radio Corp KT78A, King Radio Corp KPI-550, Bendix King KI204, Air Pathways AP360, RC Allen RCA26BK-6, Beechcraft 20B2501-1, Aerosonic Corp 101435-01267, Beechcraft BMD1001A, Electronics International TT-1P, Mid-Continent 1394T100-7Z, Aviation Instrument Corp 300-3BCF, Beechcraft 50-384073, King Radio Corp KGS-100, Collins 323A-2G, Beechcraft BMD 1001B, Beechcraft 510-4-17, Beechcraft BMD-1C01A, Beechcraft 18B329-3, Beechcraft 60-384070-1.

INSTALLED: Garmin GDU 1060 w/AHRS P/N:011-03308-70 S/N: 3M5001598 GDU 700/1060 ADC P/N:011-3457-50 S/N:5BF000632 GMU 44 P/N:010-00870-10 S/N:1CM027557 and GTP 59 P/N:011-00978-00 S/N:47943156 in reference to STC Package No. SA02571SE and manufacturers installation manual P/N:190-01717-B3 Rev. 3 dated October 31, 2018, Garmin GTN 750 P/N:011-02282-00 S/N:1ZA0001210 GTN 650 P/N:011-02256-00 S/N:1Z8028001 GMA 35c P/N:011-02299-40 S/N:1T6202068 and GA35 P/N:013-00235-00 S/N:160888 in reference to STC Package No. SA02019SE-D and manufacturers installation manual P/N:190-01007-A3 Rev.12 dated July 31, 2018. Garmin G5 P/N:011-03809-000 S/N:4JQ026331 GAD 29B P/N:010-01172-11 S/N:5DL005506 and GMU 11 P/N:010-01788-01 S/N:5GJ010502 in reference to STC Package No. SA01818WI and manufacturers' installation manuals P/N:190-01112-10 Rev.14 dated June 30, 2018 and G500/G600 TXI Part 23 AML STC Installation Manual Section 3.2.3.1 "Garmin G5 Standby Instrument." Garmin GTX 345R P/N:011-03303-00 S/N:3EH022642 in reference to STC Package No. SA01714WI and manufacturers installation manual P/N:190-00734-10 Rev.10 dated February 28, 2018, Garmin GI-106B P/N:013-00593-00 S/N:C18-12528 in reference to installation manual P/N:GI102-106-MD dated July 31, 2016.

Performed configuration and ground testing in reference to manufacturers installation manuals.

Interfaced GTX 345R to GTN 750 for WAAS GPS Position source.

Tested GTX345R ADS-B in reference to FAA AC 20-165B chapter 4.

The installed ADS-B OUT system was shown to meet the equipment performance requirements of 14 CFR part 91, § 91.227. Aircraft weighed for new weight and balance.

**MAINTENANCE RELEASE:** This aircraft, airframe or appliance was repaired and inspected in accordance with current regulations of the Federal Aviation Administration and is approved for return to service. All work was performed in accordance with applicable aircraft, or appliance maintenance manuals and instructions. Pertinent details are on file at the repair station office. Work Order#:1400

Freedom Air Avionics \_\_\_\_\_

Rusty Wallace \_\_\_\_\_



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Freedom Air Avionics \_\_\_\_\_

Rusty Wallace [REDACTED]



N60RK

ALTITUDE MANAGEMENT SYSTEM

2392 LA

Shadin

GARMIN

CDU Model: 800-700  
SW Version: 2.06

Home

CDU Type: System Management Interfaces

CDU Setup: External Systems Calibration / Test

OK: NO Load NO Save Summary

121.30 24.5  
118.00 IDENT 118.00  
117.00

Continuity Installed Software

SW Version: 0.01  
SPS Version: 0.0

Continuity Installed Software

Continuity Installed Software

Continue

134.97  
SW Version: 0.01 SPS Version: 0.0  
118.00

Continue



RADAR ALT ON

OFF

ON/OFF

Normal Take-off power - 26.5" Hg MP  
For Density Altitude Conditions Above Sea Level, consult American Aviation, Inc. Flight Manual Supplement, Figure 1.

Maximum altitude of 207 by Standard Pressure  
Under normal operating procedures when  
density altitude above 20,000 feet

EXTERIOR LIGHT: ON, OFF, DIM, BRT

WING LOCKED

FLAPS: UP, DOWN

VOLTS: 14.0, 13.0, 12.0, 11.0, 10.0, 9.0, 8.0, 7.0, 6.0, 5.0, 4.0, 3.0, 2.0, 1.0, 0.0

PROP AMPS: 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000

AMMETER: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

ANALOGIZATION: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

CONTROL CABLE ALTT 14 100

ROLL: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

PITCH: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100