



# First Look: the BendixKing AeroCruz 230

by Rick Tutt

**B**ack in 1987, I learned how to fly in Kalispell, Montana. I didn't take my first lesson until I was 37 years old and it was something I always wanted to do. My dad and uncle flew for the United States during WWII and my grandfather flew for the Royal Canadian Air Corp during WWI.

They always said it takes the "big three" to get started in aviation: time, opportunity and money. I often had two but not all three together. For the first few years of my flying history, I hardly knew what an autopilot looked like, let alone used one.

I first flew scenic tours of Glacier National Park along with gear-loads and tourists in and out of the four major wilderness areas while working part-time as a general building contractor and cabinet shop owner.

Making a career change, in 1990 I moved to California where I knew there would be greater flying opportunities. It wasn't until the mid-1990s when I started to see aircraft that had a functioning unit and they were mostly just a "wing-leveler" and not until 1998 in a PA46-350P was there fully functioning equipment.

Early on, you had your basic offerings from BendixKing, S-TEC, Narco, Century, and the Cessna ARC Navomatic family with their line-up of 200, 300, and 400 units. The

bigger twins had the 800 and some of the 400/800 units had a flight director with a 9-key pad panel.

In 1998 when I started flying the PA46 variants, and they used the Bendix King KFC 150 autopilot. The older PA46 aircraft had a KFC 150 but no altitude/vertical speed preselect and it was busy to stay on top of it.

With two guys from Stockton, in December 2004 I bought a 1987 PA46-310P (N9125B), an aircraft that I'd been previously flying on a corporate level.

We've had occasional problems with the KFC 150 unit that was often heat-related and sometimes a voltage sensitivity issue with the servos. The motherboard once needed repair and a servo or two, along with occasional problems due to cable loosening which required tightening. Some of the fleet have the KFC 225 while others have S-TEC or Garmin.

The KFC 150 autopilot in our Malibu has worked well over the last 22 years that I've been flying that airplane.

Last October at the NBAA in Las Vegas, MMOPA member Robert Malstrom, my wife and I met with BendixKing's Roger Dykmann, Andrew Barker, and other executives at their booth that showcased the KFC 150 replacement.

The AeroCruz 230 was just around the corner for addition to the AML (Approved Model List), which would

add the PA46-310P/350P to the already growing list of airframes receiving the new units.

The AeroCruz 230 autopilot was introduced as a slide-in replacement. Although it requires a new tray and some patch-cord wiring, it essentially is just that: “plug & play” as it uses the current servos in the aircraft.

Once the servos are bench-tested for conformity, they go right back in the ship. Any servo that does not meet the test, is repaired or replaced accordingly. Garmin had already introduced their new autopilot line-up for the PA46 but that replaces all the of the servos for their unit and gets an extensive re-wire.

I liked the idea of the AeroCruz 230 because after the servos have been bench-tested and approved for use they will be warranted for two years, just like the main unit. The feature of using the existing servos and the same space in the instrument panel was an added inducement since we had already completed an avionics retrofit so didn't want to cut up the panel again.

The price of the AeroCruz 230 equipment is \$10,000 plus removal and replacement and BendixKing was advertising a 10 percent rebate on the unit as an inducement to buy.

There was a bit of stumbling coming out of the gate with the rollout date and installation into our ship but eventually, the AeroCruz was approved and available. The unforeseen delay was partially due to the COVID-19 pandemic and related quarantine period associated with it. Social distancing requirements then made it difficult for more than one person working in and on the plane at a time, adding to the delay.

Once that period subsided, I made an appointment with an avionics shop that I was well acquainted with: TECHNICAir in Fresno, California. TECHNICAir is a full-service maintenance unit of Signature Flight Support and has a facility at Fresno Yosemite International Airport (KFAT). In the past, TECHNICAir at KFAT had done work for me so had a high level of confidence. Being acquainted with Robert Wilkinson, the avionics manager, and Bruce Raynor, the facility general manager, gave me points of contact so I could be informed every step of the way.

Installed two years earlier, we have the G500TXi, GTN650/750, GTX 345 (ADS-B in and out), a GMA 350c audio panel.

Once the autopilot installation was complete, flight tested, then released, I began to fly as often as I could. There is a slight disconnect as before with the GAD 43e A to D converter allowed input entry at the PFD. Now



input is at the autopilot touchscreen. No longer can I enter altitude and vertical speed on the PFD but do so for situational awareness and as an alerter that is right in my scan.

Hopefully, there will be a future fix along with the use of the IAS function and VNAV coupling capability. When this is upgraded I can go back to the way it was.

Once the system is switched on with the master avionics switch, it goes through a 16-point check, the system initializes and it is ready to use. Altitude, vertical speed, heading or nav mode is selected on the ground.

The system has a (TOGA) switch for takeoff and go-around mode and will command the flight director single cue bars up 8 degrees and goes to a pitch/roll mode; something new for this aircraft as the KFC 150 never had that.

Once airborne the aircraft can be maneuvered in the heading bug mode or directed on course in nav mode. If you program a departure procedure that starts from



the runway, it will fly the sequence seamlessly. Select the vertical speed of your choice and as you near the pre-selected altitude, you get the typical call-out.


The autopilot is deliberate, intuitive, predictable, smooth, and uses a smart technology that reduces the rate of climb right to the pre-selected altitude capture point. There is no over or under-shoot, no porpoise, or correcting at capture.

There are more audible callouts on this autopilot that I have not recognized on others and candidly am not sure if they are coming from the autopilot or picked up somewhere else then announced over the GMA 350C audio panel. I need more time with the plane and will re-read the POH for both. There are also several new visual annunciations I'll have to digest that show up prominently on the PDF.

There's a "level" mode that in the event of an upset and subsequent unusual attitude, will bring the aircraft to a straight and level condition.

The fact that we did not have to tear the airplane apart for the new unit and new servos made this a simple choice. All told, the new system came in around \$15,000.


Since this might have been the first AeroCruz 230 installation in an aircraft having this combination of avionics, there were a few stumbling blocks along the way but Honeywell/BendixKing sought their best engineers around the world for support.

Regularly I provide initial and recurrent flight training in a handful of models along with their variants. I see around 70 PA46 and 30 twin Cessna and Caravan aircraft. The majority of these aircraft still have KFC 150 autopilots. I call that a good marketing opportunity for Honeywell/BendixKing and suspect they will do well with this offering. 

*Rick Tutt provides initial/recurrent flight training on all PA46 models. Based in Stockton, CA, he's accumulated 20,000-plus hours over a 33-year career. Rick lives with his wife Gail and co-owns a 1987-PA46-310P that he's flown for the past 22 years.*



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