



Muncie makeover

Big things are in the works at Muncie Aviation Co. After six weeks in Muncie's avionics shop, AOPA's Win a Six in '06 Sweepstakes airplane has undergone a major-league transformation.

It all started back in April, when I flew the airplane from LoPresti Speed Merchants' shop at the Vero Beach, Florida, municipal airport to Delaware County-Johnson Field in Muncie, Indiana. Within a couple of days, Muncie Aviation's avionics technicians—under avionics manager Bill Roundtree—had ripped out the old instrument panel. They'd already created a new panel design, and quickly set to work re-wiring and preparing the cockpit for the impressive new complement of modern instruments. As the accompanying photographs testify, this was a monumental task—but one that Muncie Aviation was more than qualified to handle.

The Win a Six gets panel power galore

BY THOMAS A. HORNE

So it was out with the 1960s-era steam gauges and in with a modern panel.

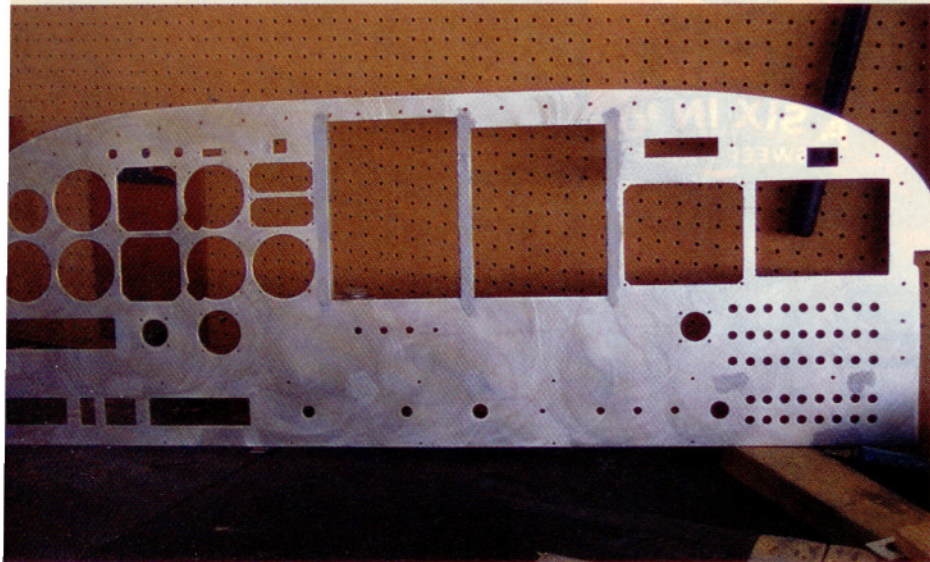
Here's a list of the main panel elements the Win a Six will feature:

- A Sandel SN3500 electronic horizontal situation indicator (EHSI). This unit replaces the old vacuum-driven heading indicator, and is capable of depicting moving-map, traffic, and datalink weather information. For heading information, the SN3500 will use a remote gyro from Mid-Continent Instruments Co.
- Garmin GNS 530 and 430 GPS/nav/coms. The 430 came with the airplane when AOPA purchased it.

- An electronic attitude indicator and flight director from Castleberry Instruments & Avionics, LLC.
- An Avidyne FlightMax EX500 multi-function display with the ability to show Jeppesen approach charts via Avidyne's CMax chart database, and traffic from Avidyne's TAS600 active-surveillance traffic system. XM WX Satellite Weather also will play on the EX500. Although the Sandel also can show weather, we decided to put this information on the EX500 only. That's because its display is larger.
- A Meggitt/S-Tec System Fifty Five X autopilot and flight control system, with altitude preselect. The Castleberry attitude indicator will feature command bars for the pilot to use with the Fifty Five X. The Win a Six will be an all-electric airplane, with no vacuum-driven instruments.
- An electronic standby attitude indicator from Sporty's Pilot Shop. This in-

Project Timeline

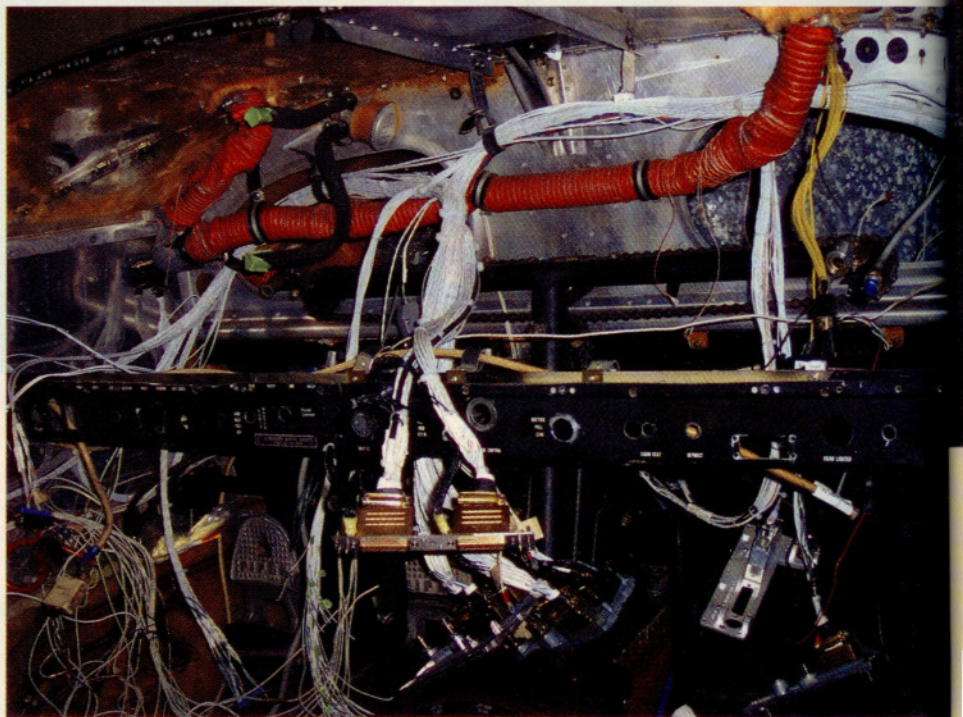




The new panel cutout (left) shows where all the new black boxes will reside. The large openings will feature the Garmin GNS 530/430 stack, the Avidyne EX500 multifunction display, the JP Instruments EDM-930 engine gauge cluster, and the display screen for PS Engineering's PAV80 entertainment system. The screen is placarded "not for pilot viewing." Avionics technician Morris Wilhauer painstakingly works with wiring bundles. The gutted old panel is shown below.



Recounting the panel's attributes may make your mouth water, but other realities are at work. Like the 700 or so hours that Muncie Aviation will put into the effort.



strument has its own internal battery for emergency power if all electrical power is lost. That would be highly unlikely in this airplane, because it's been equipped with a B&C Specialty Products Inc. standby alternator. This, in addition to the primary alternator, provided by Kelly Aerospace Inc. Sporty's attitude indicator can legally take the place of a conventional turn coordinator, and can make the difference between a safe and a disastrous outcome in the event of a primary attitude indicator failure.

- A J.P. Instruments EDM-930 engine analyzer, fuel totalizer, and engine gauges. This provides information on all engine parameters, including mani-

fold pressure and tachometer readings. In fact, the EDM-930 replaces the Six's old gauges entirely. (Well, except for the fuel quantity gauges serving the airplane's two 17-gallon auxiliary fuel tanks.) All data are shown on a large color liquid-crystal-display screen, which will be located to the right of the EX500.

- A PS Engineering PMA8000B audio panel and PAV80 entertainment unit. The PAV80 can send AM/FM radio, XM satellite radio, CD, MP3, and DVD entertainment to passengers in the club-seating area, or play for the right-seater. Two entertainment screens will be mounted in the aft cabin, and one more will be located directly in front of

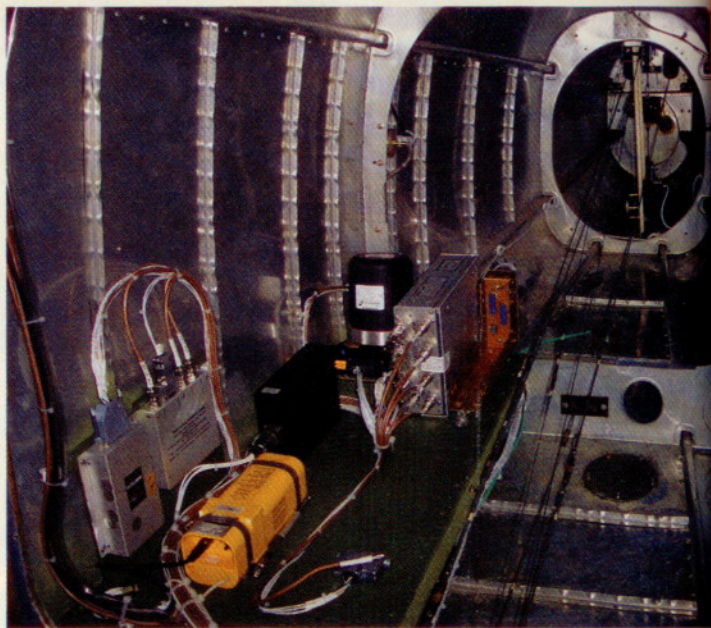
the copilot's seat. And while passengers can treat themselves to an in-flight movie, there's a big caveat for the lucky pilot of this Win a Six: The DVD screens are not for pilot viewing!

- A set of six Sennheiser headsets. The pilot and copilot stations will have Sennheiser's top-of-the-line noise-attenuating headsets—the new HME C450-BP-04 model. The four back-seaters will each have an HME110 headset. All will experience the high-quality and super-quiet performance that have made Sennheiser's lofty reputation.

Wires and work

Recounting the panel's attributes may make your mouth water, but other real-

A look down the tailcone shows the new autopilot hardware, Avidyne's TAS 600 traffic advisory system processor, and autopilot servos. The yellow unit is the ELT. Soon, a receiver for the XM satellite weather and XM satellite radio will be installed. For a 39-year-old airplane, the tailcone interior looks surprisingly pristine.



ities are at work. Like the 700 or so hours that Muncie Aviation will put into the effort. Those working on the panel—Morris Wilhauer, Micah Hime-lick, Brian Manship, Jason Adams, and Mike Brown—must surely have as much patience as expertise. I mean, just look at all those wires! It takes special people to create the wiring harnesses and route the individual wires, and not lose their nerve in the process.

Airframe touch-ups

Muncie Aviation's contribution to the sweeps project wasn't limited to avionics. Steve Larrimore headed up a project to address some of the Six's airframe issues. One was the rudder skin. The airplane's rudder had obviously suffered some hangar rash in the past, and the dings in its trailing edge were crudely patched. Patching a control surface isn't a good idea because the patches can create imbalances, lead to vibration, or, in the worst case, cause flutter. The Cherokee Six isn't exactly known as a fluttering sort of airplane (flutter is typically associated with high-speed flight), but good practice demands that no control surfaces be patched.

Williams Airmotive, of Kendallville, Indiana, came to the rescue with a new rudder skin, and for that we thank Roy Williams. Larrimore's team installed the new rudder in record time, and also addressed some other issues. One involved a small crack in the upper wing skin, one that radiated from a rivet just outboard of the wing-to-fuselage seam. This kind of crack is

common in Pipers of this vintage; these airplanes didn't have reinforcing doublers anchoring the wing skin to the ribs (later models do). To correct the problem, Larrimore installed an exterior doubler to stop the crack's progress and reinforce the area.

Next steps

After the avionics and airframe work, it will be time for the paint and interior work. This will take place after the EAA AirVenture Oshkosh 2006, which runs from July 24 through 30 at Wittman Regional Airport. If you're Oshkosh-bound, please come by AOPA's big yellow tent (it's just a short walk from the main entrance) and pay the Win a Six a visit. It'll be parked right out front.

Take a good look. After AirVenture, the next time the Win a Six makes a public showing it will have a new paint job (thanks to Scheme Designers Inc. and Dial Eastern States Aircraft Painting Inc.) and a completely upgraded leather interior (from Aircraft Interiors of Memphis).

And, as always, those of you wanting more rapid-fire updates should check AOPA's sweepstakes Web site (www.aopa.org/sweeps) for the latest news, photos, contributors, and video clips of this classic airplane's transformation. **AOPA**

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i Links to additional information about AOPA's 2006 Win a Six in '06 Sweepstakes may be found on AOPA Online (www.aopa.org/sweeps).