

Aero SUV



1999 sweepstakes

A strong foundation

Preparing the Aero SUV for great things to come

Mountains pushed up by tectonic action eventually compress and make rigid the layers of rock under them, creating a firm footing for soaring peaks. In the same way, the first part of our Aero SUV program focused on the airframe-related essentials **BY MARC E. COOK** that will form the foothold for an infusion of new technology and utility improvements to come. Unlike our Timeless Tri-Pacer sweepstakes airplane of last year, in which a total

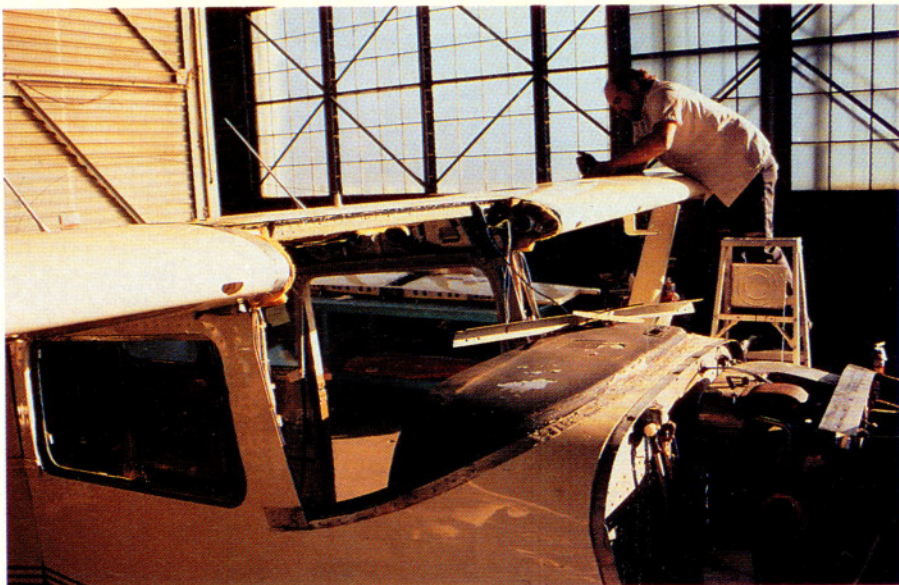


PHOTOGRAPHY BY THE AUTHOR

restoration was undertaken, the Aero SUV will be a different program. It neither needs nor will receive a top-to-bottom rework; this 4,000-hour airframe came to us in remarkable condition. Indeed, most of the mechanics working on the airplane have commented that it's one of the cleanest 206s in memory.

An important economic lesson resides in our decision to buy a low-time, later-model airplane. Originally, we had a 1970-vintage airplane in our sights, intending to perform airframe modifications and corrections as necessary. At the outset, the reasoning in searching for a good—but not great—U206 for about \$70,000 was based on the assumption that the remainder of the budget could go into other modifications. But as the hunt for an airplane played out, it became clear that bargain airplanes are seldom that—what you don't pay up front will definitely come out of the porcelain piggy later.

Buying a 1976 U206 in very good shape at a much higher initial cost has worked to our benefit. Several Cessna experts agree that we could have spent the nearly \$30,000 differ-



With the interior gutted and all glass removed, the 206 is in the midst of a thorough refurb. Here, the rubber fuel bladders are being replaced.

ence in cost between a ratty old airframe and our U206F to make the airplane as close to new as is reasonable. This economic strategy performs best if you intend to bring the airplane up to speed quickly, as we intend to; for weekend tinkerers, the pay-as-you-go approach is often

more fiscally palatable. This tidbit of airplane-buying advice floated to the surface more than once: Purchase the best airplane that you can afford, because projects are for those with lots of free time and the desire to keep the airplane nearly forever. Remember, too, that modifications



Ron Martinson installs Cessna's horizontal stabilizer beef-up kit.

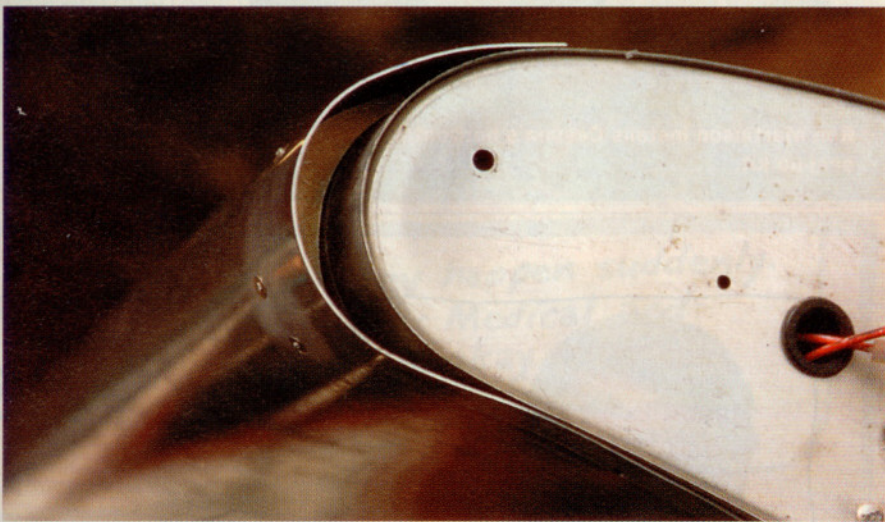
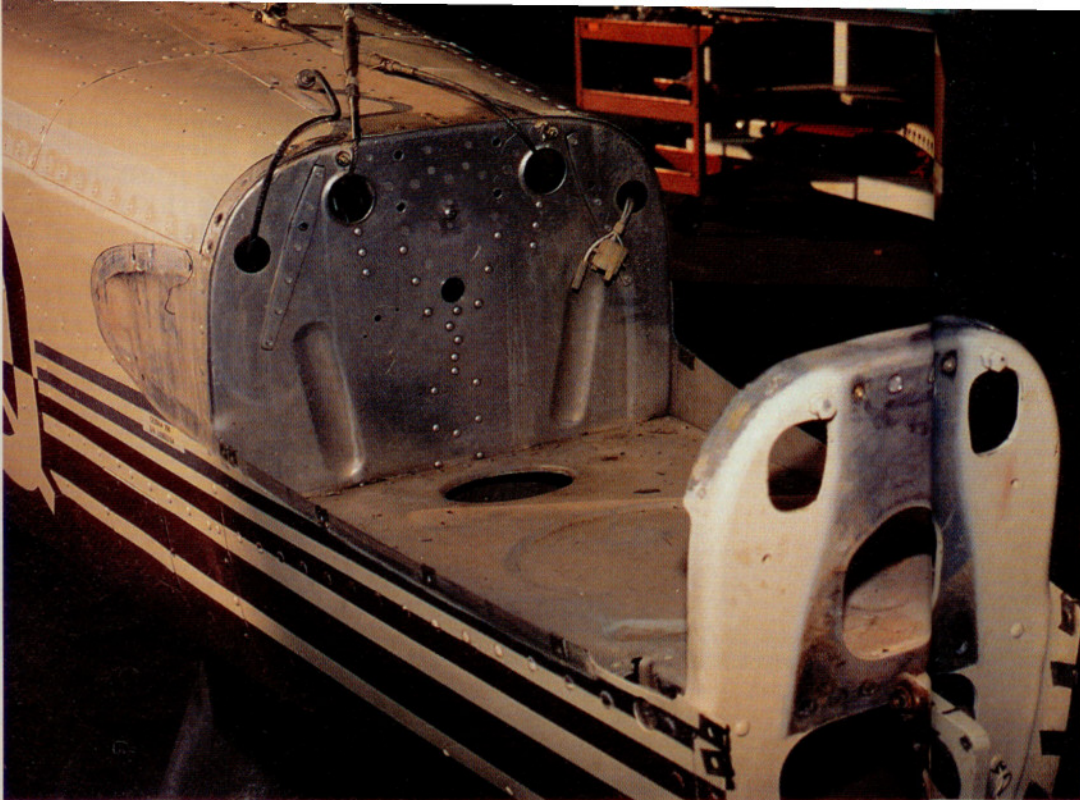
made to most airplanes return somewhat less than half of their cost in immediate resale value.

As a result of N8323Q's sharp condition, the main objectives during its stay at Aero West Specialties in Santa Maria, California, were to ensure that the airframe was indeed straight, clean, and free of corrosion and to prepare the Stationair for modifications to come. All airframe components would be inspected and repaired or replaced as necessary.

A word about selecting shops before we continue. Aero West Specialties was strongly

recommended to us by the Cessna Pilots Association on the reputation of the mechanics and their knowledge of single-engine Cessnas. Shortly after our project was begun, the shop changed hands. When that happens, the entire facility's policies and philosophies are subject to change. Because the CPA doesn't have a clear reading on the new direction of Aero West, it no longer recommends this shop to its members. For the record, we have no complaints about the work performed by the two lead mechanics on this project. The airplane was ready to fly on the assigned completion date, albeit with a handful of deferred items.

What are you likely to find wrong with a 206 of this vintage? Aero West's Phil Kirkham (our straw boss for this segment of the program) and Ron Martinson have been around Cessna singles for a long time and knew immediately where to look for the potentially big problems—the tail. Stationairs (and Centurions, for that matter) suffer from cracking of horizontal stabilizer attachment fittings—more so than do 182s, for example, because the tail loads are higher on



Reinforcements were added to the stabilizer-attachment bulkhead (top) while the Horton STOL kit was riveted to the existing leading edge of the wing.

the heavier airplanes.

Cessna attaches the horizontal stabilizer—which on this model is a fixed airfoil—to the airframe at two locations. Up front, a pair of machined fittings riveted to the stabilizer's one-piece main spar bolt to a sheet-metal bulkhead on the airframe. Reinforcements on the bulkhead can work their rivets loose and in some cases actually deform the bulkhead itself. Farther to the rear, the stabilizer's aft spar bolts to the tail cone in two places through fittings that are in turn supported by two sheet-metal brackets. These brackets help to spread the load between the stabilizer's upper and lower skin and the aft spar. On N8323Q, one of the

brackets had cracked through a bolt hole.

Cessna's solution is a pair of Service Kits (SK210-125 and SK210-126) that replace the forward attachments with much beefier hardware. In theory, the more stable forward attachment helps to protect the standard aft mounts from excessive loads. Along with replacement of the stabilizer brackets, these service kits cost about \$600 and generally take 20 to 30 hours to install. Don't show up at the shop while it's happening, though, because the whole tail—vertical and horizontal elements—has to come off. It's not a pretty sight.

Most of 23Q's windows were in good shape, but we wanted thicker,

gray-tinted panes, so all of the original pieces had to come out. LP Aeroplastics provided the new windows. The Jeanette, Pennsylvania, company makes windows in a variety of thicknesses, so we elected to have one-quarter-inch glass installed on all but the rearmost windows. For the side glass, LP Aero milled the edges so that the panes fit into the window channels designed for one-eighth-inch-thick plexiglass. Increasing the window thickness will reduce the panes' flexibility and resulting tendency to transmit noise into the cabin.

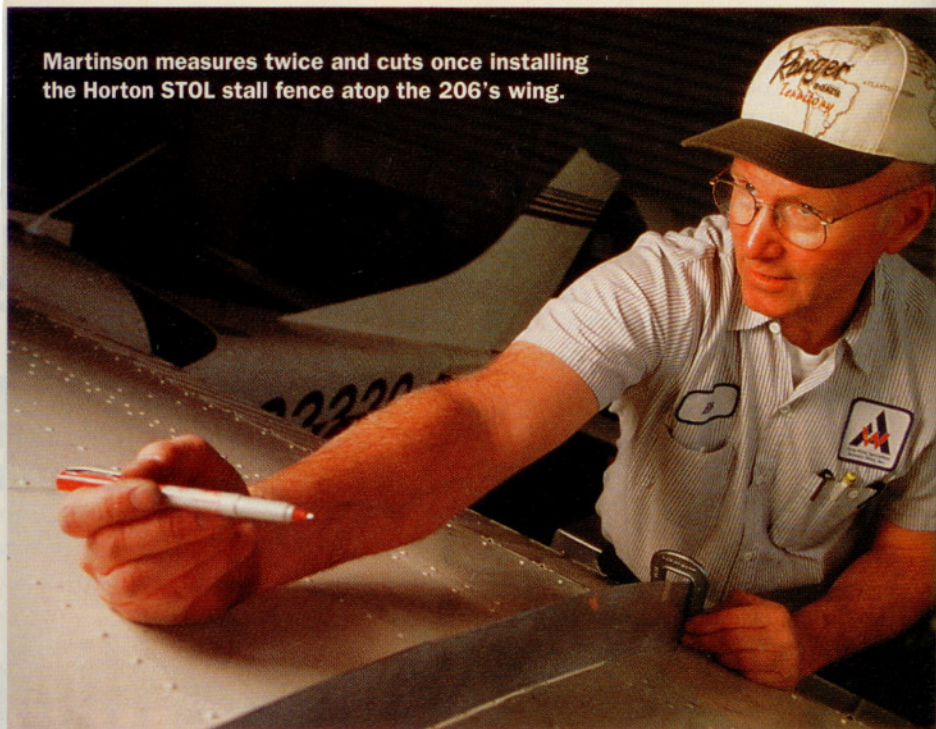
During the installation process, Kirkham and Martinson found a new defini-

tion for the term *windowpane*. Cessna mounts the windshield and front side glass conventionally. But the rearmost three panes require extreme measures to liberate. After much shop-manual perusing and head-scratching, Kirkham and Martinson decided that the only course was to drill out scores of rivets in the turtle deck and gingerly lift an exterior skin panel to slide out the center rear pane. That explains why you so often see this rear glass in need of replacement when the other windows are obviously newer.

Fortunately, once the new windows were in place, the change in visibility was dramatic. It's probably true that pilots live with poor glass longer than they should, in part because it loses its crystal appearance gradually.

Generic airframe repairs were few and included a new pulley or two in the control system. During the extensive inspection we found a couple of engine-compartment discrepancies. The number-one cylinder had low compression with leakage past the exhaust valve. As owners of big Continentals understand, these engines can read agonizingly low on the compression check and still be considered airworthy, but leakage past either valve is reason for further investigation. (Keep in mind that a single low compression score isn't instant death for a cylinder. As long as the leakage is past the rings, fly the airplane again and recheck. And make sure that your technician uses

Martinson measures twice and cuts once installing the Horton STOL stall fence atop the 206's wing.



the Continental calibration orifice to determine the accept/reject threshold. Depending upon gauge calibration, this number could be as low as 50/80.) The cylinder was sent out for rework to service limits. Remember, we're going to be putting in a new Continental IO-550 later this year, so the long-range health of this engine was not our primary concern.

Martinson deemed the original exhaust system to be unairworthy, however, so we installed a new system from Knisley Welding. Normally, the 206 exhaust system is made up of stamped steel shells welded along the edges to form the three-pronged collector assembly. Knisley starts with stainless-steel tubes and bends them into shape, welding only where the individual tubes meet. Fortunately, the IO-520 exhaust is the same as that for the 550, so we'll be able to keep these lovely pipes on the new engine installation.

Stationairs, like their Skylane brethren, used rubber fuel cells until the early 1980s. Our 206, amazingly, still had its original cells, dated as manufactured in 1976. Had this been a personal airplane, we'd have left the cells alone because they looked like new. Hangering in the dry country really paid off here. Initially our plan included replacing the bladders with Monarch Development fiberglass replacement tanks. Requiring wing removal for installation, the Monarch tanks, which sell for about \$2,600 a pair, demand a serious amount of

labor, although it's likely to be labor that you'll never have to spend on fuel tanks again. Monarch estimates 30 to 40 hours for the total installation, although shops tell us that a realistic range is between 50 and 60 hours. Moreover, we were late enough in obtaining our particular airframe that we couldn't squeeze into Monarch's production schedule in time to allow installation and troubleshooting before our February 1 appointment with the avionics shop.

Aero Tech Services donated a set of long-range fuel cells made from new-generation nitrile rubber. This material is both lighter and more flexible than previous bladder constructions and promises very good life. It's also far easier to install than the stiff, old-style bladders. It's not unreasonable to expect a life of 15 to 20 years from these new tanks.

Other fuel-system modifications performed at Aero West were to include installation of Flint Aero tip tanks. (Because of time constraints, the plumbing didn't get installed before the airplane moved out of Santa Maria, so we'll discuss the installation in the June issue.) These fiberglass tips hold a total of 30 gallons of fuel and add a total of 36 inches to the 206's wingspan—by reducing span loading, the tips improve climb and high-altitude cruise performance. They also provide a 200-pound maximum gross weight increase, to 3,800 pounds on

Aero SUV assistance

AOPA would like to thank the following companies that donated or discounted their products and services to refurbish the Aero SUV or otherwise assisted in the project.

Airframe repairs

Aero West Specialties
3203 Lightning Street
Santa Maria, California 93455
805/928-3601
805/928-3603

Additional airframe work

Clarksburg Air Repair
6273 Freeport Boulevard
Sacramento, California 95822
619/421-6756
airrepair@softcom.net

Auxiliary fuel tanks

Flint Aero, Inc.
1935 North Marshall Avenue
El Cajon, California 92020
619/448-1551
619/448-1571
lagreca@home.com

Backup vacuum system

Aero Safe Corp.
603 Soda Springs Road
Millsap, Texas 76066
800/433-5689
817/682-7662

Fuel cells (bladders)

Aero Tech Services
8354 Secura Way
Santa Fe Springs, California 90670
562/696-1128
562/945-1328

Landing gear fairings

Superplane Mods/Davids Aviation
3600 Carol Kennedy Drive
San Andreas, California 95249
209/736-2526
209/736-2527

STOL kit

Horton STOL Kit
Wellington Municipal Airport
Wellington, Kansas 67152
800/835-2051
316/326-2244

Technical assistance

Cessna Pilots Association
3409 Corsair Circle
Santa Maria, California 93455
805/922-2580
www.cessna.org

Windows

LP Aero Plastics
RD1, Box 201B
Jeanette, Pennsylvania 15644
724/744-4448
724/744-7372
windshields@lpaero.com
www.lpaero.com

our U206E. Like the other Flint offerings, these Stationair tanks feed into the corresponding main wing tanks through electric pumps; they have their own fuel gauges as well. All told, we'll have 106 gallons of usable fuel on board the 206, a real boon if there are plans for a backwoods retreat to a location that doesn't offer fuel.

Finally, to really improve the airplane's short-strip prowess, we fitted the Horton STOL kit. Later-model Cessnas like our 206 included the cambered leading edge from the fac-

tory, but the Horton kit's is even more pronounced. In addition, Horton provides a pair of stall fences that keep the airflow from migrating down the span and robbing lift from the flaps and ailerons. It's a good, simple system and it works.

On the flight out of Santa Maria to Airborne Electronics in Sacramento, the airplane felt no different in cruise or climb—perhaps a bit stronger going uphill, but it was lighter by dint of having its interior stripped and stronger by gaining a healthy sixth

Tri-Pacer winner surprised!

Indianapolis is the new home of the Timeless Tri-Pacer

BY DREW STEKETEE

Good things come to those who wait. That catch phrase applies to the AOPA staff, which spent more than a week tracking down the winner of AOPA's 1998 Sweepstakes grand prize, the Timeless Tri-Pacer. It was also true after 25 years of AOPA membership for Lee Burton of Indianapolis, our affable 1998 Sweepstakes winner.


The 68-year-old real estate executive finally got his airplane in surprise ceremonies on February 7 at the Eagle Creek Airpark in Indianapolis. Considering nasty January weather in the Midwest, it was no surprise that Burton was vacationing down South when AOPA first tried to locate him.

Always ready to make any presentation a special event, AOPA President Phil Boyer arranged to surprise Burton at home. The winner was shocked to see Boyer on his front step, tailed by television crews and photographers, the visit having been scheduled with the help of Burton's wife, Ruth. It took a moment or two for Burton to recognize Boyer and realize that he'd won.

The party moved to Eagle Creek Aviation where pilots from the Indianapolis Aero Club and area airports saw Burton meet his Timeless Tri-Pacer for the first time. Boyer sweetened the moment with a \$10,000 check, part of the 1998 prize package.

To make an already well-equipped Tri-Pacer even more fun, Boyer also handed over a Garmin handheld GPS, an Icom handheld transceiver, a pair of Pilot Avionics noise-canceling headsets, and a one-year membership in the Short Wing Piper Club.

The moment became even more surprising when Burton revealed



When planning for retirement,
set your sights a little higher.

Open an AOPA-Sponsored Certificate of Deposit IRA from MBNA America® Bank.

Invest in an AOPA-Sponsored CD IRA from MBNA to save for a secure retirement with a Traditional or Roth IRA. You'll enjoy tax-deferred or tax-free earnings, and your IRA funds can be invested in MBNA's high-yielding Certificate of Deposit accounts with AOPA members-only yields for safe, fixed-rate growth.

And with every dollar deposited, MBNA makes a contribution to AOPA, which helps keep GA strong and your dues low. Open an account with a new contribution or transfer funds from an existing qualified retirement account. Call today and speak with an Investor Services Representative.

Call 1-800-900-6653, Ext. 6024

Monday through Friday, 8 a.m. to 8 p.m., or Saturday, 8 to 5 (Eastern time).



MBNA® and MBNA America are federally registered service marks of MBNA America Bank, N.A. ©1999 MBNA America Bank, N.A.





that it was he, as Indianapolis' parks director in the 1960s, who had assembled the land for Indianapolis' huge west-side urban park and its lakeside Eagle Creek Airpark. After the airport was built, he learned to fly there and joined AOPA in 1973.

AOPA's 1998 Sweepstakes reprised the association's first Tri-Pacer giveaway which, in 1956, boosted membership over 50,000 for the first time. In contrast, AOPA membership in 1998 was at an all-time-high 345,000.

In 1956, the lucky winner received his Tri-Pacer on national TV thanks to AOPA charter member Arthur Godfrey, television's most popular personality of the day. This time, Burton, a remarkably articulate spokesman for general aviation, got his moment in the sun with local Indianapolis TV, which turned out for a "good news" story on a rainy winter Sunday.

During the 1990s, winners of AOPA sweepstakes have included a Florida dentist, a California nurse, a Wyoming rancher, a Tennessee emergency room physician, and flight instructors in Florida and Massachusetts. An Oregon home-maker won AOPA's fiftieth anniversary sweepstakes airplane in 1989.

Anyone who joins AOPA or renews association membership during calendar year 1999 is automatically entered in this year's sweepstakes to win AOPA's Aero SUV Cessna 206. The sweepstakes closes on December 31, 1999.

After that, computers at the accounting firm of Ernst & Young spin up to pick a winner at random. Then, in late January or early February, someone will hear a knock at the door or stumble into a surprise at the airport.... Will it be you? ☐

Drew Steketee is AOPA's senior vice president of communications.—Ed.

cylinder. On the descent into Sacramento Executive, however, the Horton STOL kit showed its true colors. The airplane was perfectly happy sliding down final at 55 knots indicated. In acceptance-flight testing, the full-flaps stall came with the airspeed needle firmly on the bottom peg. Between the 206's innate short-field abilities, which are considerable to start with, the Horton STOL kit, and the Flint Aero tip extensions/fuel tanks, the Aero SUV ought to be a formidable back-country cruiser.

So far, the Aero SUV is shaping up to be everything we'd hoped—a solid, clean airframe fitted with the kinds of modifications that'll make scouring the piney backwoods safer and easier. And yet, unlike monster mud tires on road-going SUVs, these are alterations to a consummately capable airplane that will not hobble it for day-to-day utility and cross-country missions. ☐

E-mail the author at marc.cook@aopa.org

portable
just got
colourful



Skymap III C

At Skyforce innovation is our guiding principal. From the company that redefined the definition of 'portable' comes Skymap III C. With full screen colour, the sharpest map and six mounting configurations, you need never be lost for a location in your cockpit.

Now is the time to move from today's grey world to a colourful future with Skymap III C. Call us now or visit our website for more information.

Skyforce®

Allied Signal 1877 712 2386 (Toll Free US)

Tel: +1 913 712 2613 Fax: +1 913 712 1302

Skyforce Avionics Ltd Tel: +44 1243 783763 Fax: +44 1243 783992

Internet: <http://www.skyforce.co.uk>

flight path to the future