



Gift wrapping

Finishing the work on our yearlong restoration

No doubt about it. The tension increased during AOPA Expo this October for the upcoming selection of a winner for the Timeless Tri-Pacer. Members gathered around the shining red-and-white Piper and wondered aloud what it'd be like to own this comprehensively refurbished classic. ● But before we could hand

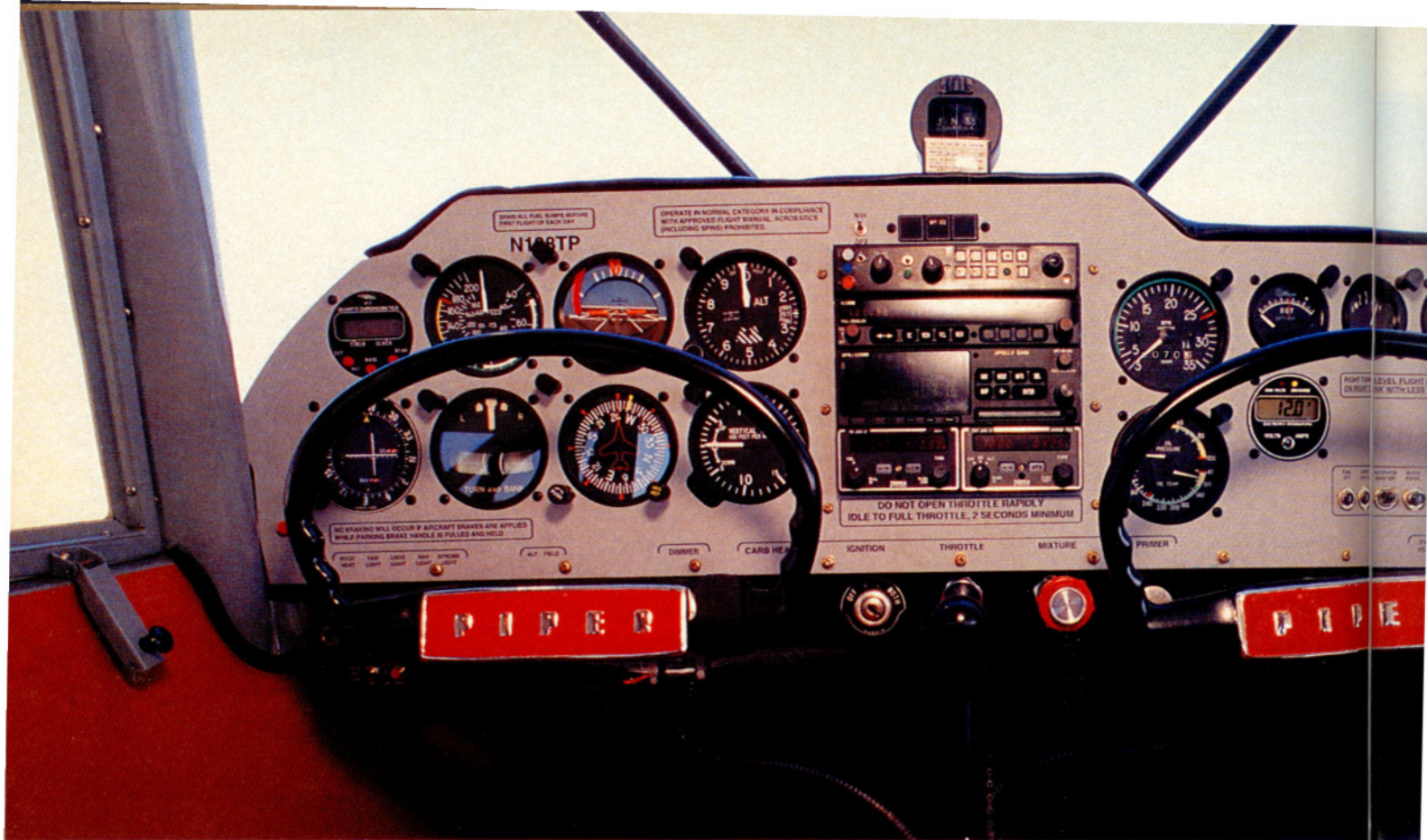
the keys over to some lucky member, there was still a little work to be done. For example, our 70-some hours of flying over the summer had revealed the usual number of niggling

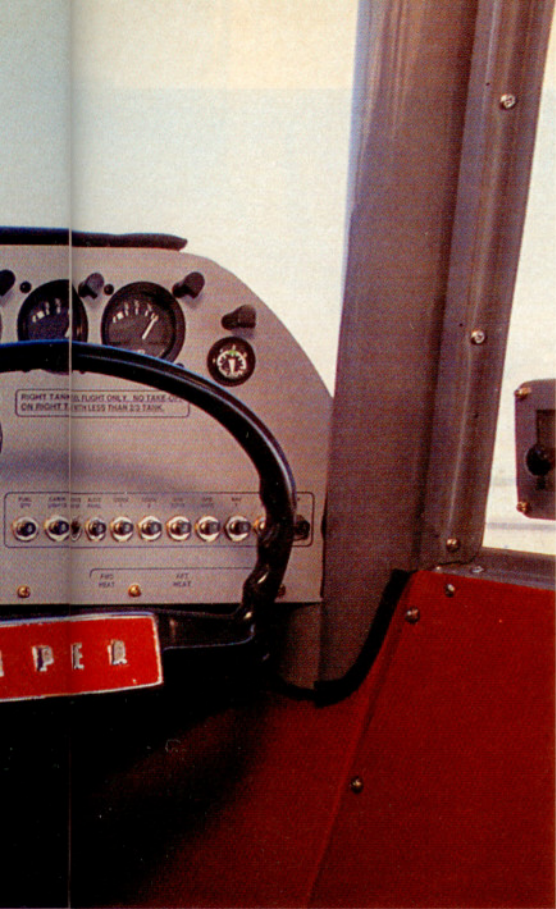
problems following such a restoration. Our alternator, for instance, gave us trouble just before leaving for Oshkosh in July. It turned out that the regulator had failed, even though the system had worked fine prior to the restoration—normally

By Marc E. Cook

PHOTOGRAPHY BY MICHAEL P. COLLINS







this is not a big problem, but we couldn't find any paperwork on the alternator conversion in the logbooks. Because of this, we had no idea who to call for a replacement. To be safe (and legal), we installed an Interav alternator conversion that includes a 60-amp alternator, brackets, and solid-state regulator. Unfortunately, one of the brackets used on the original generator is needed for the conversion—Interav reasonably assumes that you'll be yanking the generator and putting the alternator right in its place—so we had to scrounge around for one. All of these headaches passed—Excedrin moments entirely typical of a refurbishment involving a 40-year-old airplane—and the alternator kit performs perfectly.

In the last installment of the Timeless Tri-Pacer saga, we discussed the avionics installation and new instrument panel. At press time, the Tri-Pacer was about to return to Avionics West in Santa Maria, California, for IFR approval of the II Morrow GX60 GPS/com, installation of rear-seat headset jacks, permanent push-to-talk switches on the yokes—thus taking full advantage of the II Morrow/PS Engineering audio panel's split-transmit functions—and a bevy of smaller squawks. Two cross-continent trips in the airplane—one netting a new point-to-point speed record (see p. 55)—have

perature-sensitive foam to replace what was, in our airplane, decidedly flaccid filler, but in the specific shapes of the supporting material. Oregon Aero's founder, Mike Dennis, believes that the key to comfort is to ensure that the body is properly positioned on the seat. Too many standard seats, he says, tilt the pilot's pelvis backward, forcing the spine and shoulders forward to angle backward. Dennis maintains that rotating the pelvis forward helps straighten the back and makes for a less-fatiguing seat. Using conformal foam also helps. This material is available in several levels of stiffness and further tailors itself according to body weight and temperature. As it warms, this foam becomes softer, in essence forming itself around the seated pilot. (It also makes for an incredibly stiff seat first thing on a nippy morning.)

Dennis' theories sound plausible, but the proof is in the finished product. Universally, our pilots praised the Oregon Aero-made seats—built on the standard steel frames—a supremely comfortable. I flew an 11-hour stint—with stops for fuel and little else—and was

A Tom Knoll-designed and Avion-built instrument panel has served the project extremely well. The two placarding mistakes—Tri-Pacer pilots, can you find them?—will be fixed.

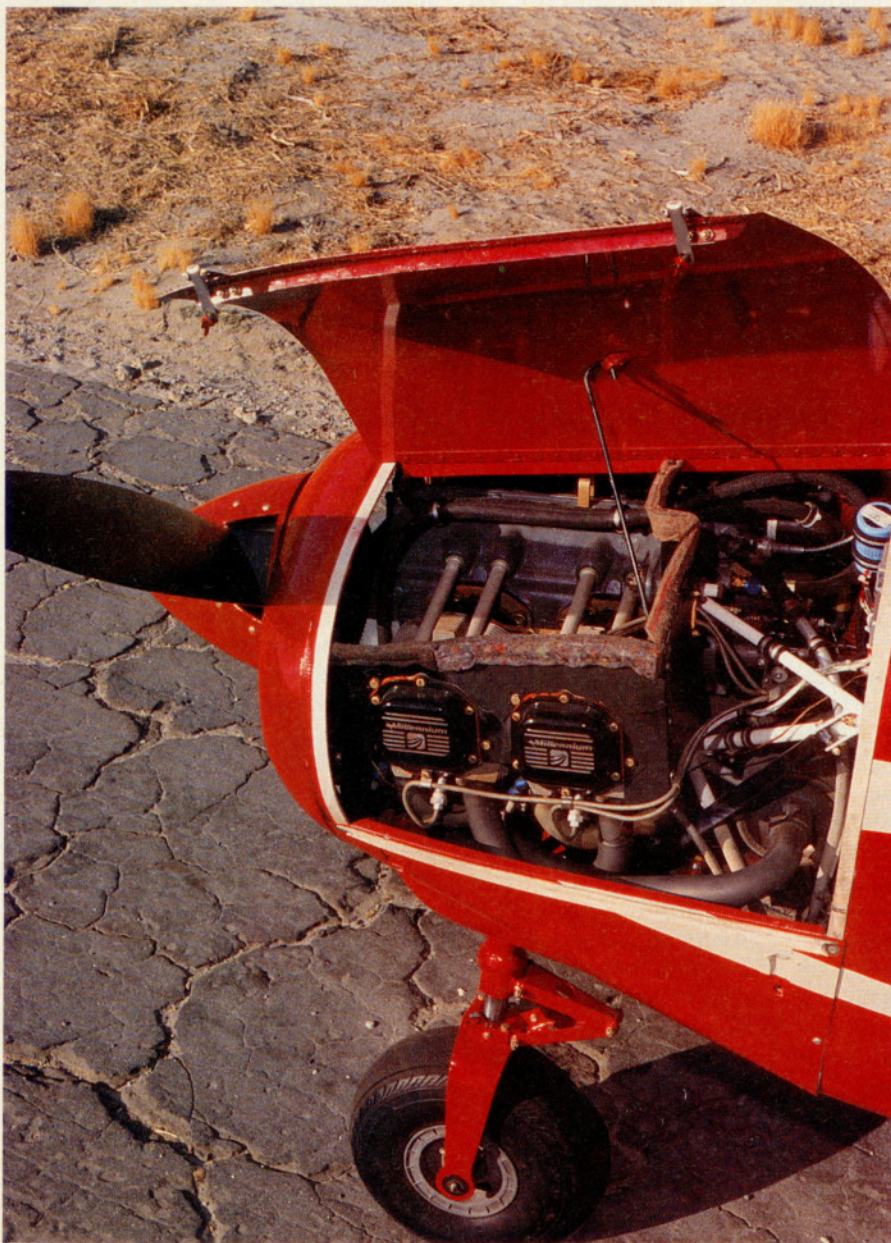
At home on asphalt or a sleepy grass strip, the Timeless Tri-Pacer has been tweaked and polished through the fall.

helped us to appreciate the basic strengths of this airplane and, in particular, its avionics suite.

A pair of coast-to-coast trips have inspired our pilots to admire the considerable work done to the Tri-Pacer's interior. Although it's close to the original in overall scheme—in fact, the colors and materials wouldn't look out of place in a 1950s press photo—the underlying philosophies and quality of work are far beyond what commonly issued forth from Piper during the Tri-Pacer's rich production life. For instance, we called on Oregon Aero (see p. 56) to completely revamp the seat cushions. Our later-model Tri-Pacer had individual front seats and the common sling-type rear seat with separate bottom cushion. Oregon Aero's trick is not so much in the way it uses stiffer, tem-

not in the least bit of pain. Fatigued, yes, but not hurting. The seats' firmness also helps to deposit your weight evenly, eliminating hot spots that hinder circulation and promote pain during long assignments in the saddle.

Another Oregon shop, Flight Tech in Hillsboro, handled the upholstery of the two front seats and the rear bench. Done in a tasteful red-and-black motif, the cloth seating sections are bordered by vinyl trim. While leather is certainly lovely to view, a fabric is generally better breathing and more comfortable in warm climates. Mike and Tracy Henderson, who run Flight Tech, did a marvelous job fitting handmade covers to the Oregon Aero-made foam bases. In a way, the Timeless Tri-Pacer's seats are a bit of stealth technology; they look just like the original chairs but are so much



The Millennium-equipped Lycoming O-320 has been durable and thrifty. Interior appointments are classic, modest, and eminently comfortable.



more comfortable that pilots familiar with the stock PA-22 will be amazed after the first flight in N198TP.

The remainder of the interior is straightforward. Airtex supplied a simple black carpet that fit with extremely minor modifications. The foam-backed carpets are pleasantly cushy without bunching up underfoot or taking up too much room around flight-critical components such as the flap handle base.

When we bought this Tri-Pacer it had lap belts only. Now it's wearing four-point Hooker harnesses at all four seats—they're looped around the main frame tubes in the headliner up front and around the cross-cabin support in back. There is, unfortunately, no room for inertial reels in the Tri-Pacer; as such, pilots with short arms have to loosen one of the shoulder belts to reach the flap handle. This is a minor inconvenience, given the improved safety factor.

Through the late summer and fall we've had a chance not only to test the seats' mettle, but to put time on the airframe and engine. Our field-overhauled Lycoming O-320—with mostly new factory Lycoming parts and Superior's Millennium cylinder sets—has performed without a hiccup. Oil temperatures have moderated since the initial break-in flights, fuel consumption has remained steady at about 8.5 gph, and the oil usage has stabilized at about a quart every 12 hours. A minor exhaust leak at the crossover muffler was fixed by the Clarksburg Air Repair crew during a general checkup/detail-fixing session in November.

While at Clarksburg, we installed a Reiff preheater system donated to the project. The setup uses an oil-ump pad and individual heater elements around the base of the cylinders; we don't yet know where the airplane will live after January, so the preheater addition might well be a useful tool.

Assuming the that Timeless Tri-Pacer will go into snowy climes, the donated Lap Huggers will also come in handy. (Although the Tri-Pacer is no drafter than other 1950s machines, it isn't exactly airtight.) The fleece Lap Huggers will be particularly welcomed by back-seat passengers, who are usually the last ones to receive warm air—despite our Tri-Pacer's separate rear-cabin heater duct.

The fuel-supply problem that we suspect caused our post-restoration off-airport mishap has not recurred. Our pilots have been diligent in selecting the

left tank for takeoff and landing, and the Tri-Pacer has performed flawlessly. As such, we're not going to modify the fuel system—though, to be frank, had we better understood the shortcomings of the stock PA-22 fuel system, we would

have made the Sperandeo mod during the restoration, while the airplane was apart. (This modification reroutes the aft fuel line from the right tank so that it has fewer turns and no longer has to travel up to the instrument panel,

Become a world recordholder

Here's how to go about it

Want to break the new 92-knot world speed record set by AOPA's Timeless Tri-Pacer from Phoenix to Palm Springs, California? You can—*easily*—and here's how.

The record attempt began two months before the flight with a telephone call to the National Aeronautic Association in Arlington, Virginia. (NAA needs at least 30 days.) There were two requests: I wanted an information kit, which leads the pilot step by step through the record-attempt process, and I needed help finding a route for which there was no existing record. That last bit of information was to assure a world record no matter how poor the speed—even if fellow pilot Dave Weigelt and I landed for lunch right in the middle of the speed run. A Tri-Pacer needs all the help it can get.

Once the information kit arrived it was clear that we had a problem: The original route from Blythe, California, to Palm Springs, California, wasn't long enough. World record attempts must be flown over a course of at least 400 kilometers (about 216 nautical miles). A U.S. national record may be flown over a course as short as 200 km (108 nm), but we didn't want a national record. We wanted the *entire world* to stand in awe before our mighty Tripe.

With the course determined, we applied to NAA for a sanction to make the attempt; the sanction application requires a \$350 fee for aircraft weighing less than 3,858 pounds. The application was for aircraft in the C-1b class, which means a landplane weighing from 1,102 lbs to 2,204 lbs. Since there were no records for the route, the sanction was quickly approved.

The hour, minute, and second of takeoff was observed by the tower operator at Chandler, Arizona, south of Phoenix, and recorded on a form

that we had left behind. The tower supervisor mailed it to NAA in the stamped envelope that we provided. While still 30 miles out from Palm Springs, we arranged for the tower controller to observe our landing time; and immediately upon landing, we visited the tower to have our NAA form signed. That document was then mailed to NAA along with other required forms certifying weight and balance of the aircraft. To claim the record, an official telephone call to NAA from Palm Springs was then required; claims must be accompanied by a registration fee, which in the C-1b class is \$400; so all in all, you'll pay \$750 for a record in this class. (Additional fees include a \$29 membership in NAA and a \$25 sporting license issued by the Fédération Aéronautique Internationale, the parent body of NAA.)

Weigelt—a graphic artist at AOPA and a new 100-hour pilot—and I are now eligible to wear special world record patches and rings, and to attend one of two NAA events conducted each year with other world recordholders. Boy, will they be impressed!

You can, of course, break any existing record or set a new one (and leave our record unchallenged). Obviously, there are a lot of C-1b aircraft out there that can beat the AOPA Tri-Pacer record speed—even with a 50-kt headwind. All we ask is that those of you capable of flying the route faster than 92 kt—and that would be the majority of you—refrain from doing so for at least a month. We haven't even gotten our official certificate yet!

—Alton K. Marsh

NAA is the U.S. representative of the Fédération Aéronautique Internationale and can be reached at 1815 N. Fort Meyer Drive, Suite 700, Arlington, Virginia 22209; telephone 703/527-0226. E-mail the author at alton.marsh@aopa.org

against gravity, before reaching the fuel selector.) Now, we'll continue to counsel 8TP's pilots to mind the fuel selector and the (now corrected) placard on the panel restricting use of the right tank for straight and level only when it's less than one-third full.

As the Timeless Tri-Pacer spent its final months with us, we were inclined to reflect on the qualities of the machine. At heart, the PA-22 is a delightfully honest airplane to fly, easy to master with some practice, yet just quirky enough to make life interesting. The much-ballyhooed power-off sink rate can be used to squeeze into fields the airplane will have difficulty getting back out of—a dubious advantage until you consider that it leaves you lots of margin for getting slowed and



stopped. Speaking of which, none of our pilots complained enough about the joined braking system, with its one lever under the instrument panel, so it's staying—indeed, many members of the Short Wing Piper Club applauded our efforts to stick to the original concepts of simplicity with this project. Our Tri-Pacer will perform as expected, with cruise speeds right around 110 knots true, or, in 1950s-speak, 125 mph. These are numbers that, according to the SWPC members, are typical of the breed.

One of the overwhelmingly positive aspects of this Tri-Pacer restoration has been the response from the AOPA membership. At every public appearance of the airplane, countless pilots walked up and said, "This is the airplane I had my first ride in...." or "I

Inside Oregon Aero

According to founders Mike and Jude Dennis, the story of Scapoose, Oregon-based Oregon Aero begins on a kitchen table. Mike was having trouble curing his spouse's persistent headset-induced headaches; indeed, Jude nearly despaired of finding a cure. Mike persevered and tried a number of different devices, eventually settling on an oval leather-backed sheepskin pad to replace the standard hard rubber head pad on Jude's headset. Complete, if not instant, success.

That was nearly a decade ago, and now Oregon Aero is well known for its comfort-improving packages. Designed to fit a wide variety of headsets, these upgrade components include conformal foam ear seals and HushKits. For the profusion of ANR headsets, Dennis designed special, thinner ear seals to make better use of the electronics.

Working with all that foam caused Dennis to see possibilities in seat design. The conformal foam can be shaped to about any design you care to pencil out—although Dennis had to design a few proprietary rigs to do so accurately. Word

of Oregon Aero's prowess in this field soon resulted in a number of contracts to supply seat cushions to the military for ejection seats—perhaps the most difficult application because of the conflicting needs of comfort and impact absorption. Dennis notes with some pride that many other companies have tried to mix the two and failed.

Oregon Aero is now doing custom seat work for general aviation. To reproduce our Tri-Pacer's equipment, you'll spend \$495 for each of the front seats and about \$990 for the bench rear seat. Add to that about \$250 for each seat to be upholstered—Oregon Aero handles only the seat and foam refurbishing. Turn-around time varies according to the complexity of the project and company work load, but it is generally less than three or four weeks. If you call the company with specific requests or complaints about your existing seats, Dennis and company can try to accommodate specific changes. As Mike Dennis maintains, "All we want is to make pilots comfortable." At least in our Tri-Pacer, he has succeeded. —MEC



Simple flying pleasure defined: A fine-handling airframe and no-nonsense systems put together with a level of care not found on the production line.

learned to fly in one of these, and wish I had one today." For a large number of those pilots, the Tri-Pacer is remembered fondly as the vehicle of simpler times, and easier and less-expensive flying. It recalls a day when families dressed in suits to fly on airliners; a young family could expand its horizons in those pre-VCR, pre-Internet days.

Come January, one lucky member will be able to relive a bit of that past. Keep your fingers crossed. □

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Help with the process

AOPA would like to thank the following companies that donated or discounted their products, services, and time to create the Timeless Tri-Pacer.

Airframe restoration and painting—Clarksburg Air Repair, 54258 South River Road, Clarksburg, California 95612; 916/665-0006.

Airframe supplies, engine and environmental controls—Aircraft Spruce and Specialty, 225 Airport Circle, Corona, California 91720; 800/824-1930; www.aircraftspruce.com

Avionics: GPS/com, com, audio panel/intercom/marker beacon—I Morrow Inc., 2345 Turner Road, SE, Salem, Oregon 97302; 800/525-6726; www.iimorrow.com

Avionics installation—Avionics West, 3203 Lightening Street, Santa Maria, California 93455; 805/928-3601.

Avionics: transponder and VHF nav—Terra by Trimble, 2105 Donley Drive, Austin, Texas 77380; 512/432-0400; www.trimble.com/avionics

Carburetor and lightweight starter—Precision Airmotive, 3220 100th Street SW, #E, Everett, Washington 98204; 425/355-6400; www.precisionaviation.com

Carpeting—Airtex Products, 259 Lower Morrisville Road, Fallsington, Pennsylvania 19054; 215/295-4115.

Course-deviation Indicator (KI 209A)—AlliedSignal Bendix/King, 400 North Rogers Road, Olathe, Kansas 66062; 913/782-0400.

Custom seat upholstery—Flight Tech Interiors, 3301-A Cornell Road NE, Hillsboro, Oregon 97124; 503/648-9302.

Disk brake and wheel kit—Cleveland Aircraft Wheel and Brake, 1160 Center Road, Avon, Ohio 44011; 216/937-6211; www.parker.com

Engine preheater—Reiff Preheat System, S14W31825 High Meadow Lane, Delafield, Wisconsin 53018; 414/968-2342; www.execpc.com/reiff

Exhaust system components and overhaul—Wall-Colomonoy Corporation, 4700 South East 59th Street, Oklahoma City, Oklahoma 73135; 405/672-1361.

Gyroscopic instruments—Sigma-Tek Incorporated, 1001 Industrial Road, Augusta, Kansas 67010; 316/775-6373; www.sigmatek.com

Hoses, various airframe and engine supplies—Sacramento Sky Ranch, 6622 Freeport Avenue, Sacramento, California 95822; 800/433-3564; www.sierra.net/skyranch

Instrument panel—Avion Research, 1022 West Maude Avenue, Suite 102, Sunnyvale, California 94086; 408/738-1690; www.avion.com

Lap Hugger body warmers—Lap Hugger, Post Office Box 653, Langhorne, Pennsylvania 19047; 888/892-5513; laphugger@md-group.com

Logo decal—Moody Aero-Graphics, Post Office Box 1450, Belleview, Florida 34421; 800/749-2462.

Major airframe components—Univair Aircraft Corp., 2500 Himalaya Road, Aurora, Colorado 80011; 303/375-8882; www.univair.com

Major engine components—Textron Lycoming, 652 Oliver Street, Williamsport, Pennsylvania 17701; 717/327-7278; www.lycoming.textron.com

Millennium cylinders and pistons—Superior Air Parts, 14820 Gillis Road, Dallas, Texas 75244; 610/366-8937; www.superiorair.com

One-year club membership, jackets, and hats—Short Wing Piper Club, 220 Main Street, Halstead, Kansas 67056; www.swpc.com

Re-covering and paint supplies—Poly-Fiber Aircraft Coatings, Box 3129, Riverside, California 92519; 800/362-3490; www.poly-fiber.com

Seat belts and shoulder harnesses—Hooker Custom Harnesses, 1322 South Harlem, Suite B, Freeport, Illinois 61032; 815/233-5478.

Seat remanufacture—Oregon Aero, 34020 Skyway Drive, Scappoose, Oregon 97056; 800/888-6910; www.oregonaero.com

Slick magnetos and SlickStart system—Unison Industries, 530 Blackhawk Park Avenue, Rockford, Illinois 61104; 815/965-4700; www.unisonindustries.com

Strobe and position lights, instrument post lights—Whelen Engineering, Route 145, Winthrop Road, Chester, Connecticut 06412; 860/526-9504.

Windshield—LP Aeroplastics, Rd #1, Box 201B, Jeanette, Pennsylvania 15644; 412/744-4448.