Member Benefits

The Piper Owner Society has been serving its members since 1987. Make sure you are getting taking advantage of all of your membership benefits:

Pipers Magazine
- Published monthly
- Includes technical advice, aircraft profiles, regular columns, and other articles of interest to Piper owners
- Available both in print and online

Members-only Website
- Piperowner.org
- STC searches
- AD updates
- Member chat board
- Technical articles

POS Help Desk
- 1-866-MY-PIPER
- Expert technical advice from CFII instructor and FBO manager
- Parts locating service
- Aircraft valuation reports
- STC help and recommendations

Special Events
- Annual GTO fly-in
- Member gatherings

Member Discounts
As a Piper Owner Society member you receive discounts with the following retailers:

- **Accelerated Flight & Instrument Training**
  - Member Discount
  - (866) 270-8224
  - www.afit-info.com

- **Airplane Things**
  - 10% Discount
  - (800) 365-0357
  - www.airplanethings.com

- **ArmBoard**
  - 15% Discount
  - (866) 735-9276
  - www.armboard.com

- **AvBlend**
  - 10% Discount
  - (866) 775-1900
  - www.aviblend.com

- **Bahamas & Caribbean Pilot Guides**
  - 20% Member Discount
  - (760) 775-1900
  - www.flytheislands.com

- **Cockpit USA**
  - 10% Discount - code: CM123108 (212) 575-1616 ext, 129
  - www.cockpitusa.com

- **Danson Aerosource**
  - 5% Discount - code: 777
  - (480) 720-7995
  - www.dansonaerosource.com

- **eflite, Inc.**
  - 10% Discount - code: CE2
  - (800) 505-2795
  - www.eflite.com

- **Eagle Fuel Cells - Etc, Inc.**
  - Member Discount
  - (800) 437-8732
  - www.eaglefuelcells.com

- **Global Aircraft Industries**
  - 10% Discount
  - Maximum Discount $250
  - (800) 561-6448
  - www.globalparts.com

- **Oxygen of the Rockies (Oxy2Go)**
  - 10% membership discount
  - (860) 656-7720
  - http://oxy2go.com

- **Oregon Aero, Inc.**
  - VK SmartCushion™ Seat Upgrade **“Up to $500 Off”**
  - Offer Valid 9/15/09 - 11/15/09
  - (800) 888-6910
  - www.OregonAero.com

- **Premium Wood Designs**
  - 10% Discount
  - www.premiumwooddesigns.com

- **Safe Flight International, LLC**
  - Member Discount
  - (858) 451-2742
  - www.safeflightintl.com

- **ScaleCraft**
  - 10% Discount
  - Code - Piper
  - www.scalecraft.com

- **Scheme Designers**
  - 5% Discount
  - (201) 569-7785
  - www.schemedesigners.com

- **Woodstock Aircraft Services**
  - 5% Discount
  - (845) 583-5830
  - www.woodstockair.com

To add your company to the POS affiliate program, contact Dan at (715) 445-5000 ext 116.
AIRCRAFT SPRUCE
Everything for your Piper!

FREE
800+ page
Parts
Catalog,
also on CD.

Call Toll Free
1-877-4SPRUCE
7 7 7 8 2 3

Email us
info@aircraftspruce.com

www.aircraftspruce.com
Contents

PIPERS
DECEMBER 2009

The Official Publication of the Piper Owner Society • Vol. 22 • No. 12

Features
15 Be Sure with Shure
16 They Call it Puppy Love
   By Eric Coburn
18 Soloy Aviation Solutions
20 Southern Precision's New Products
21 GloveLite
22 Featured Aircraft:
   LoPresti Lance
   By Bill Cox
30 Brush Up on Your IFR Flying
31 Factory Direct Models
32 What Every Pilot Wants
   By Jim Cavanagh
38 What Every Pilot Needs
   By Kathie Brosemer

Opinions & Advice
6 Editor's Letter
   Holiday Help
   By Maggie Pickart
14 Just Plane Maintenance
   Buying a Used Aircraft
   By Steve Whitson

Departments
42 Cherokee Pilots' Association
47 Flight Market
50 Ad Index
Attention Piper Owners

The Control Saver holds the ailerons neutral and the stabilizer down. This is the best position for the controls in any high wind gust. Plus your plane will be safe to tow with the control lock on and will look great. Installs in seconds, easy to store, weighs 3oz. Only $39.95

Pilot’s who need reading glasses
STOP the hassle of changing glasses the AV-SUN’S were designed to help pilot’s read aviation maps.

New titanium frames are lightweight, flexible and almost indestructible. Same tint designed for U.S. Fighter Pilots, 100% UV protection, non-polarized, distortion free, scratch and impact resistant.
The AV-SUN’S come with your choice of reading bifocal, +100, +125, +150, +175, +200, +225, +250, +275, +300 and the tint fades on the bottom of the lenses for a brighter, sharper view of the instruments and maps.

www.airplanethings.com  Only $99.95!  Case included
Satisfaction Guarantee or money back!

Glasses are pictured without bifocals
It's the holiday season again! Isn't it strange how it seems to sneak up on us every year? I always have great intentions of planning ahead, shopping early and being prepared, but somehow, I neglect those goals every year. Instead, I end up scrambling to arrange Thanksgiving plans. I might have a false sense of relief as the festivities transpire with minimal glitches but then I remember the mountainous task ahead of me: shopping. Now I must fight the crowds at the stores on top of inspiring my creativity to spark the perfect gift idea.

I know I'm not alone on this. I hear it muttered under people's breath in the mall and I see it on the news. (Honestly, how many people need to be trampled to death while running for the $299 big-screen high-definition television before we realize how ridiculous we are?) I also figure it out with the presents I receive. Not that I don't appreciate the blender that can be bought at Wal-Mart for $4.99 on sale, but I already have three of them. The whole situation is rather depressing. Is it any wonder why people dread the holidays?

Thankfully, you still have time to remind your loved ones what you really want for Christmas this year. This issue is stuffed full of gift ideas that are perfect for pilots. Subtly leave hints for your friends and family by leaving the magazine lying around, nonchalantly opened to the page of the item you're interested in. Or, you can take the direct route by digging out the black permanent marker, circling the gifts you'd like and handing the issue to the appropriate person. At the very least, this issue should spark some ideas. Just be sure to share those ideas or you might get another blender!

If, after reading this issue, you're still not sure what you'd like this holiday season, there will be more options on the way. On Nov. 19, check your e-mailbox for our digital aircraft holiday gift guide. It will feature great gifts from some of the best retailers and manufacturers in the aircraft industry. And if there still isn't anything that catches your eye, consider yourself lucky because you must already have everything!

Happy Holidays!

Maggie Pickart
Editor
editor@piperowner.org

P.S. How could I forget to mention our gift to you? Now, any member who is not currently receiving the digital issue of PIPERS can receive it for free, in addition to the printed version! You can have the convenience of reading the magazine anywhere with Internet access, plus you will be able to view the exclusive material available only in the digital edition. Simply e-mail your request to billb@jonespublishing.com. Be sure to mention the e-mail address that you want to receive the publication.

Corrections
In the October 2009 issue, the plane featured on the cover and in the photographs throughout the article, “Piper Dakota: Countering the Skylane,” is not a Dakota; it is a PA-28-235 Pathfinder, the model prior to the Dakota. The specifications listed on page 27 are correctly listed for the Dakota. However, specifications for the Pathfinder are included on this page.
**www.apex-inc.biz**

**Aircraft Parts Express**

<table>
<thead>
<tr>
<th>Air Filters</th>
<th>Instrument Filters</th>
<th>Wheel &amp; Brake Parts</th>
<th>Fuel Drains</th>
<th>Tires</th>
<th>Lighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starters</td>
<td>Batteries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spark Plugs</td>
<td>Alternators</td>
<td>Magneto</td>
<td>Voltage Regulators</td>
<td>Fuel Pumps</td>
<td>Engine Mounts</td>
</tr>
<tr>
<td>Ignition Harnesses</td>
<td>Oil &amp; Fluids</td>
<td>Oil Filters</td>
<td>Paint</td>
<td>Cleaners &amp; Chemicals</td>
<td>Tools &amp; Pilot Supplies</td>
</tr>
</tbody>
</table>

**ABSOLUTELY FREE!**
No login — No registration — No purchase required!

This is **not** a trial or demo. The CAPS (Computerized Aircraft Parts System) is online now for you to use absolutely FREE to look up your part number by your aircraft make and model. See for yourself how easy this is to use, then tell your friends!

Want to know what kinds of preventative maintenance you can perform on your aircraft? Watch the **FREE F.A.A. video** also online at www.apex-inc.biz.
Buying a Used Aircraft

Buying a used airplane may be a stretch for this column on maintenance, but maybe not. (If you start with a hangar queen, you will need more help than we can provide.) Since few in my acquaintance-ship can afford a new airplane, I’m occasionally asked about a used one that’s on the market. I’ve bought a few and know that purchasing a used aircraft is not a decision to be taken lightly. Not only will it cost more than a few thousand dollars but you’re also going to trust the machine to transport you and your family.

So how do you accomplish the due diligence required? In a nutshell, you’re limited to talking to the owner and anyone else who knows anything about the airplane, having a pre-purchase inspection performed and reviewing the log-books. The last of these items will probably tell you more than the others.

Talk to Everyone

Many of us buy an airplane from an
acquaintance once or twice removed. If that’s the case you probably know, or can find, quite a bit about the airplane and its history. Who do you talk to? Try the local mechanics, hangar neighbors, mutual acquaintances and possibly just the guys who hang out at the seller’s airport. I recently was up in the air (no pun intended) about buying an older airplane. I located a friend who knew the seller and when he told me the seller was a man that could be trusted, I bought it.

You’ll want to ask the people you encounter if they know of any accidents, hard landings or major mechanical work. As for the latter, finding out who did it is as important as learning what was done. There are a lot of disreputable mechanics who are in the business of getting the aircraft flying without regard to anything else.

Pre-Purchase Inspections
I heard a story of a prospective buyer who was having a cup of coffee while a mechanic at the seller’s airport did a pre-purchase inspection. A chance conversation brought to light that the mechanic doing the inspection had been the owner up until three months prior, when he had sold it to the man who was now selling it to this buyer. The question became how apt would the mechanic be in pointing out the need for a major engine overhaul, the lack of compliance with an expensive airworthiness directive (AD) or undocumented crash damage?
A pre-purchase inspection really should be done on all purchases. If the airplane is a basic model, such as a Piper Cherokee 140, you can probably have the mechanic perform an annual inspection while doing the pre-purchase for minimal additional costs. Buying a pressurized, turbocharged twin on the other hand, is going to cost more than a few dollars just for the pre-purchase inspection, so spending the extra money for an annual, depending on when its due, may not be best.

In regard to complex aircraft, make sure the mechanic is qualified on that model. Some subsystems are so complex that malfunctions can bankrupt most people. On all aircraft, part of the inspection should be a review of the logs, but normally this only involves an AD search.

Above: If the engine was overhauled, there should be a listing of which internal items were replaced. Below: All reputable shops will keep copies of the bills (for a few years) on all work done and parts replaced. They are a great source of information.

Howard would have loved our fuel cells.

A single flight lasting less than a minute and covering less than a mile was the culmination of one man’s dream to build the world’s largest flying boat.

Today, with state-of-the-art FFC nitro rubber fuel cells featuring autoclave cured seams, an integrated fuel vapor barrier and backed by a “No Hassle” FFC 10-Year Warranty, Mr. Hughes might have been inclined to fly the Goose a little farther and more often.
Logbooks

Not long ago, an acquaintance showed me a logbook that read, “Engine removed, rebuilt and reinstalled.” To the author of that sentence, it probably made a lot of sense and explained everything that was needed. To the reader, there are a number of questions, including why it was removed and what was done during the rebuild.

The logbooks should be a complete history of everything that was ever done to the airplane and its components. But, as so often happens, the paperwork gets lost or some work wasn’t recorded. Maybe the job was done by an unlicensed mechanic, or the mechanic couldn’t decide if it was a major repair requiring an FAA Form 337 and just ignored it.

But in the main, the logbooks usually reflect the overall history and health of the aircraft. It’s simply a matter of knowing what to look for.

First Things First

The very first thing you want to do is collect every last piece of paper available — every receipt, 337 form, logbook, installation booklet and anything else even remotely associated with the aircraft. Once you have all these documents in hand, put them aside and start an inventory, writing down the model and serial number of the aircraft’s major components including the engine, magnetos, carburetor, generator/alternator, propeller, and avionics.

If the airplane is very old or is a rare model, get the Type Certificate Data Sheets (TCDS) from the FAA’s web site at www.faa.gov. This will tell you what is authorized to be on the airplane, and any deviation will require a Form 337. Some of the older mechanics were pretty cavalier about changing engines, figuring any O-320 was OK, regardless of the model.

You should compare your inventory...
“The Name to Remember for Aircraft Engine Parts and Service”

Serving General Aviation Since 1970

GiBSON - AVIATION LLC
1821 W. Elm
El Reno, OK 73036

Telephone 1-800-992-4880
Fax 1-405-262-2959
Email gibsonaviation@msn.com

$345.00 Overhaul of Your Cylinders.
(See Below)

Prices Effective 1-1-9
2 Working Day Turnaround

Let Gibson Aviation return to Service your Cylinders in Overhauled, Yellow Tagged Condition for $345.00. Cylinders must be crack free and the bore must be in manufacturer’s specifications for return to service. The price is inclusive of all parts stationary in the cylinder. (Valve Guides, Seats, Studs, Bushings, etc.) Any moving parts, (Valves, Pistons, Rings, etc) constitute an additional charge which varies from each different make & model.

For additional charges we can supply rings, gaskets and any other related parts you might need.
it was accomplished. The “how” is important because on many airplanes there are options about compliance.

Some ADs give the mechanic the choice of either a repetitive inspection or a one-time fix. If the solution was a one-time fix, great! If it was simply inspected, you will be saddled with the costs of periodically inspecting it or doing the repair. If the AD wasn’t complied with, the associated costs should be negotiated in the purchase price. If there isn’t a separate AD log, you may have a problem reviewing every page of the logs (which easily go back thirty years) to find the appropriate entry.

History
Now it’s time to study the airplane’s history. To be sure nothing is missed, record everything from the logbooks on a sheet of paper or a spreadsheet program with columns for date, time, activity and elapsed time. Start with the most recent entry and record a condensed version of the data in the appropriate column. In the elapsed time column, start with the current time in service (i.e. what’s on the tachometer, and subtract the entry time from that). Continue with each entry, subtracting the two latest recorded times. This information will tell you a number of things.

Long intervals between activities reflect storage or possibly major repair work. The engine logs will tell how diligent the previous owners were about changing the oil. Large amounts of flight in short calendar periods usually show the airplane was used in a commercial venture, possibly a school.

Noting when components were changed, and/or overhauled, especially engines and propellers, gives you their time in service at a glance. Many ADs have periodic
inspection requirements, so if you know the last time they were done, you know how long it is until the next inspection. Some ADs are pretty expensive to comply with, such as the Comanche’s 1,000 hour gear inspection.

**FAA Form 337**

Along with the logbook there should be copies of any 337s which apply to the airplane. If there are none or very few, you can ask the FAA to send them to you. It costs a pittance and is a great way of seeing how the FAA’s records compare to the airplane’s. The address to request these forms is on the FAA’s web site.

Completion of a 337 is required whenever any major repair or alteration is done. Why would anyone not fill in a 337? Well, for one thing, it requires the signature and approval of a mechanic with an Inspection Authorization (IA) rating, and the person doing the repair may only have an airframe and powerplant (A&P) license. If the mechanic was too lazy or too proud to have someone else check his work, you can see what’s possible.

The 337s should be read closely because they will reflect anything of consequence. Also, they are usually the location of the latest weight and balance of the airplane. While the logbooks have a tendency to terseness, the 337s usually reflect what was done with ample detail about the methods used, since a copy goes to the FAA.

Engine overhauls normally don’t require a 337 because the work is routine and usually only constitute part swaps. It is then a fairly easy matter to contact the shop and request a copy of the work order, which should include a list of replaced or reworked parts. The engine components should have a yellow tag somewhere in the logbook which will tell you when, where and who did the overhaul or inspection of that component.

Note that parts don’t have to be changed during an overhaul. If measurements show they are within specification limits, they can be reinstalled. All overhauls are not equal, and without the list of internal items replaced, you’ll never know if you’re dealing with a new engine or one in which the parts have a few thousand hours.

**On Final**

On completion of all of these tasks, you should have a good idea of the state of the airplane. Although you have invested a sizable amount of time and money researching the airplane, if you don’t feel confident about it or the people involved in the sale, don’t make the purchase. If you do, you’ll regret the decision later when you’ve invested a lot more time and money.

---

“Cessna 182 for sale. Needs some sheet metal work.” If it sounds too good to be true, it is.

---

**Quality Used Parts**

- Satisfaction Guaranteed
- Huge Inventory of Parts for Single and Twin Engine Aircraft
- Cessna, Piper, Beechcraft, Mooney, Rockwell, Bellanca, Mitsubishi, etc.
- Engines, Props, Airframe, Avionics, Instruments
- Next-Day Delivery Available
- Call Toll-free from the U.S. and Canada
- The Best Source of Used Aircraft Parts

Say “I saw your ad in Cessna Owner or Pipers and receive 10% off your order!

(Maximum discount $250)

(800) 561-6448
Phone: (780) 458-2801
Fax: (780) 459-4163

sales@globalparts.com

www.globalparts.com

Engine, Airframe Parts & Components for General Aviation Aircraft
You want to organize and update your work station, but how can you know you’re getting a quality product? You can be, with Shure.

Shure Manufacturing Corporation is a privately held company that engineers and manufactures high quality, professional steel fabricated products for various industries. Shure has been a major supplier of quality shop furniture for the automotive service and repair and petroleum industries since the 1940s. Shure’s state-of-the-art 95,000+ square foot manufacturing facility is centrally located in Washington, Mo., just west of St. Louis. Shure re-located its plant to Washington, Mo., in 1995 after 50+ years in St. Louis. Shure’s manufacturing facility features a high tech powder paint line and high tech manufacturing equipment including a laser precision cutting machine and computerized brake presses.

Shure produces professional quality workbenches, tool storage cabinets, technician carts, transmission benches, storage cabinets and various shop equipment for maintenance and repair. Products are available in 22 standard color choices in a high-quality powder paint finish.

Shure operates under its six values:
1. Quality — Quality comes first;
2. Customers — are the focus of everything we do;
3. Improvement — Continuous improvement is necessary to our success;
4. Partners — Suppliers and distributors are our partners;
5. Integrity & Good Citizenship — are integral parts of our corporate character;
6. Earnings — are essential for the well being of our company, its employees and customers.

Shure recently introduced the TC3 System (Technician Customer Care Center). The TC3 System incorporates all of the essential tools and equipment necessary for a technician to maximize efficiency and productivity. Shure’s TC3 System organizes today’s service facility into a high-tech, professional workplace environment.

You’ll be glad you got a Shure product.
**Design Your Own Workstation!**

The SHURETECH® Bench System is a new concept in workbench design and innovation that can meet the workbench and tool storage requirements for any shop environment. Shure has various pre-configured workstations available or customize your own SHURETECH® workstation by selecting individual components such as tool storage cabinets, storage cabinets, service reef cabinets, trash cabinets, cart lockers, sink cabinets and in-ground lift power units.

- All lower cabinets are approx. 36 1/4 H. (Height includes leg levelers and bench top)
- Bench tops are stainless steel over wood core and 29" D / Stainless steel utility chase panel
- Tool cabinets with full extension, 400lb. capacity drawers / Storage cabinets include (1) adjustable shelf, swing-out doors and locks
- Wall mounted upper storage cabinets with 2 computer monitor enclosures that includes a keyboard and mouse pad stand
- Lift power unit brochure/assistant with Rotary and Challenger in-ground lifts

**Shure® Heavy-Duty Portable Tool Storage** is designed and engineered for durability and are essential when working with heavy parts, accessories and tools.

- 11 full-extension drawers with 400lb. capacity including full-width top drawer
- 4/40lbs. weight capacity
- 2 heavy-duty swivel casters with lock and 2 heavy-duty rigid casters
- Heavy-duty reinforced steel construction

**Portable Tool Storage**

**Model #TS7893**

- Heavy-Duty Portable Tool Storage - 52"W x 41 1/4"H x 27 3/4"D

**ShureShop® Workbench**

**Model #811038**

- Improve Your Image, Productivity And Efficiency
- Attract And Retain The Best Qualified Service Technicians
- Increase Customer Loyalty And Service Revenues
- Choose from 22 Signature Powder Coat Paint Colors

**ShureShop® workbenches combine heavy-duty steel construction with all-welded, adjustable height legs (22" - 40"H).**

- Portable, Stationary, semi-portable and wall-mounted styles
- Painted steel, stainless steel and hardwood maple bench tops
- Portable and semi-portable benches have heavy-duty casters with brakes
- Stationary, portable and semi-portable models include a full-length tool rail and are available with backstops and end stops as well as a lower shelf

**Shure's Space Saver Cabinet** is designed to maximize storage requirements and is available as a single or double unit.

- Large storage capacity
- 4 adjustable shelves per cabinet
- 2 point locking system w/ left or right swing door
- Leg levelers

**Space Saver Cabinet - Single Unit** - 30"W x 75"H x 21"D

**Space Saver Cabinet Double Unit** - 60"W x 75"H x 21"D

**Shure Parts Storage - SPS** cabinets are designed to match Shure's equipment and are manufactured as modular, high-density storage cabinets to organize and store parts and tools.

- SPS-8 - 29 1/4"W x 75"H x 27 3/4"D - 8 Total Drawers, 2 Shelves
- SPS-5 - 29 1/4"W x 75"H x 27 3/4"D - 5 Total Drawers, 3 Shelves
- SPS-3 - 29 1/4"W x 75"H x 27 3/4"D - 3 Total Drawers, 4 Shelves
- SPS-0 - 29 1/4"W x 75"H x 27 3/4"D - 5 Shelves

- Full extension drawers with 400lb. capacity and adjustable shelves
- Available with 8, 5, 3 or 0 drawers
- Standard height is 75" - Other heights available upon request
- Stationary and can be easily mounted together for additional stability

**Technician Carts** combine maximum storage capacity and portability with an all-welded design that provides stability and durability for any shop environment.

- Top and bottom shelves with a 1 1/2" lip on all sides
- 4 inch casters with lockable drawer
- Deluxe model offers an additional drawer and a lower storage enclosure with lockable doors
- Includes handle and top shelf net

**Technician Cart**

**Model #60018**

**Standard Technician Cart** - 29 1/4"W x 34"H x 18 1/4"D w/o Handle

**Deluxe Technician Cart** - 29 1/4"W x 34"H x 18 1/4"D w/o Handle

**Mini Technician Cart** - 22 1/4"W x 34"H x 18 1/4"D w/o Handle

**Shure Manufacturing Corporation**

**Workbenches • Storage Cabinets • Tool Storage • Shop Equipment**

**1.800.227.4873 | www.shureusa.com | 636.390.7171-fax | sales@shureusa.com**

1901 West Main Street • Washington, MO 63090 USA

**MADE IN U.S.A.**
Flavor of the Bahamas  
Mar 8-12, 2010  Departing Fort Lauderdale, Florida (KFXE)

Join fellow Cessna Owner and Piper Owner members on a trip to explore the Bahamas Out Islands. Experience island life from a native’s perspective with Caribbean Sky Tours.

Our first stop will be in Marsh Harbour, Abaco, in the northeast Bahamas. After clearing customs and immigration, we will take the island ferry to Hope Town, a colorful Bahamian village located on Elbow Cay. We will be staying at the traditional Hope Town Harbor Lodge. Once in Hope Town, rent a golf cart and explore the island, visit its picturesque landmark lighthouse, enjoy a walk along the narrow island streets, visit small shops and restaurants, or choose to relax on the beautiful beach or the hotel pool in true island fashion.

On the way to our next destination, you will be able to enjoy some of the best aerial views and photo opps the Out Islands have to offer. A relaxing lunch stop at the Staniel Cay Yacht Harbor located in the Exuma chain of islands is planned on our way to Cat Island. During our stopover, you can join an optional snorkeling tour of the “Thunderball Grotto”, or simply relax at the marina. A short flight over to New Bight will take us to Cat Island, known for its “rake and scrape” music and friendly people. We will stay at the Fernandez Bay Village resort nestled under tall casuarina pines on a beautiful half moon bay. During our stay on Cat Island, you can use the resort’s kayaks to explore the nearby creeks or visit “The Hermitage”, a miniature monastery built atop “Mount Alvernia”, the highest point in the Bahamas. Later in the day, come home to enjoy a spectacular view of the Bahamian sunset at Fernandez Bay.

Enjoy the beauty of the Bahamas in the comfort and convenience of your airplane guided by Caribbean Sky Tours, natives to the region. Share the experience with fellow pilots, members and friends.

For more information call toll free (866) 420-9265  
www.caribbeanaskytours.com
Aircraft owners know the advantages of flying at higher altitudes when traveling to far off destinations. As the pilot plans the trip to the special destination, he or she knows oxygen will be needed in order to breathe while climbing to altitudes that are best for the aircraft's performance. Supplying oxygen to oneself and other passengers is not complicated, but what about the “other” family members?

More and more pilots are taking family pets on vacations and business trips. Most pilots notice the effects of flying on their pets, stating, “The dog just goes to the back of the plane, lies down and goes to sleep. When we arrive, the dog sometimes acts lethargic, walks sideways and generally doesn’t act right for about an hour, but then he is just fine.” These symptoms are just some examples of the short-term side effects of hypoxia.

Hypoxia is the reduction of oxygen supply to tissue below physiological levels despite adequate perfusion of the tissue by blood. To a pilot, it means a lack of oxygen in the blood, which leads to headaches, dizziness, shortness of breath, blurred vision and mental confusion. Most of these effects are short-term and a person or pet can recover. But what about long-term effects of hypoxia?

According to veterinarians, some long-term effects of hypoxia include brain damage, blindness, congestive heart failure and even death. What can be done to prevent these health issues in pets while continuing to have them as flying companions?

This was a major concern of Kent and Lori Carter, who frequently fly with their “family,” two male Brussels griffons named Cody and Moe. The dogs love to fly and go everywhere with Kent and Lori in their airplane, regardless if it’s for work (Kent and Lori own two businesses, Precision Grinding and 4 Paws Aviation, both located Warsaw, Ind.) or for pleasure.

In 2006 Lori read an article published by the Aircraft Owners and Pilots Association (AOPA) called, “Flying with Pets.” The article recommended not flying over 5,000 feet with short-nose dogs. Going higher increases the chances of hypoxia and creates health issues.

While taxiing on a trip planned to Gatlinburg, Tenn., Kent felt something when he received his clearance to 12,000 feet. He knew right away it was the feeling of Lori looking at him from the right seat. Being the husband that he is, he asked what she was thinking.

Lori replied, “We’re not going over 6,000 feet with the dogs.” After a short discussion, they compromised and agreed to not go above 8,000 feet. Clearance delivery amended his new altitude request.
and off they went. This was the moment the idea of an oxygen delivery hood for their dogs was born and the beginning of 4 Paws Aviation.

On the following Monday, Kent and Lori started searching for some type of oxygen delivery for their dogs. Outside of an oxygen box, nothing they found would work. They contacted their local veterinarian and together it was determined that a hood covering a dog’s head was ideal and needed to be attached in a way so dogs could not remove it. With logistics in the making, Kent and Lori had to determine the practicality of an oxygen hood for animals.

4 Paws Aviation conducted research with several volunteer animals. Test results show animals’ blood oxygen levels decrease starting at 8,000 feet, with a significant decrease at 10,000 feet and above. 4 Paws Aviation believes oxygen should be given to pets at 10,000 feet and above — lower if the owner thinks it is necessary. Now, providing oxygen for pets has gotten easier, as 4 Paws Aviation successfully created its animal oxygen hood after more than three years of research and development. The oxygen hood is available for purchase to the public.

Since the hood unit uses constant flow oxygen, large dogs need about 60 percent of the flow rate for humans. With the oxygen hood, large dogs’ blood oxygen levels have stayed in the middle- to upper-90 percentile. With oxygen, animals are alert and responsive, a major improvement from lethargy, unresponsiveness and labored breathing. These symptoms of hypoxia are eliminated, something every loving pet owner can be thankful for.

To date, 4 Paws Aviation has displayed and sold the hoods at Sun ‘n Fun and EAA AirVenture with great interest. Several units are in use today and feedback is upbeat and positive. Dogs have adapted to the hoods well and know when they see the hood, they’re going flying! What could be better than that?

4 Paws Aviation is continuing its research and Cody and Moe are a vital part of that. They love to go on trips and meet new friends during testing. The oxygen hoods can be found at www.4pawsaviation.com or at Dr. Brent Blue’s site, www.aeromedix.com. The hoods come in five sizes, ranging from small to XX-large. Custom colors and sizes are also available. 4 Paws Aviation is currently in the process of developing a new line of noise reduction earmuffs for pets, which should be available soon.

If you have four-legged family members and hate to leave them behind, you can now take them with you knowing they will be safe from hypoxia and any of its short- or long-term effects. Keep them happy, safe, healthy and flying.

---

**Aeromedix is the exclusive retailer of 4 Paws Aviation innovative new oxygen hood for dogs. Treat your finest companion to the safety they deserve!**

- Helps prevent hypoxia in dogs
- Designed with comfort and safety in mind
- Simple to use with the attached velcro straps

List: $219.95 • Our Price: $199.95 • Savings: $20.00

**www.aeromedix.com • (888) 362-7123**
Soloy Aviation Solutions is a world-renowned engineering and manufacturing company that specializes in the design and development of major Supplemental Type Certificate (STC) modifications for the aviation community. Founded more than 40 years ago on the idea of bringing superior turbine engine technology and reliability to piston aircraft, Soloy has engineered, developed and manufactured hundreds of aviation products, including several industry-first major STCs and patented aviation solutions. Soloy is on the cutting edge of aircraft design innovation for the enhancement of performance, safety and efficiency in fixed wing and helicopter aviation.

Forty years ago, piston aviation had evolved to a point where there was a diminishing horizon for improvement. Fortunately, there was a better performing and vastly more reliable solution to the failings of piston technology.

Soloy Aviation founder, Joe Soloy, developed the concept of converting piston aircraft through his real world experience of having multiple piston engine failures. His innovation was a direct result of self-preservation as a commercial bush pilot. The results were more capable and significantly more reliable aircraft for the commercial and general aviation market.

The turbine technological horizon continues to rise and Soloy’s efforts to make aviation more safe and economical go forward in such spectacular aircraft as the new Soloy Turbine 206 Mk II.

The attractive power to weight ratio that made turbine application universal for military aircraft is equally useful to civilian aircraft design. The inherent reliability and longevity that is a result of the turbine’s simple operating dynamic is especially attractive. Soloy aviation has been leveraging the superior reliability and power of the turbine in several highly successful STC aircraft applications, both fixed wing and rotor wing. It is the Soloy Aviation perspective that all general aviation or light commercial aircraft applications should have the turbine option available. Soloy is delivering on that demand for more power, lighter weight and spectacular turbine reliability in STC conversions for general aviation.

A pilot’s desire is for 50 percent more power at half the weight and a powerplant that is many, many times more reliable. Fortunately for the aviation community, we have a highly refined, well-established turbine, that exceeds those criteria in the Rolls Royce B17/F2 turboprop engine. And in Soloy Aviation we have a team that possesses the design and manufacturing capability to combine world class airframes with a world class powerplant.

The Soloy design team, in conjunction with Rolls Royce, is taking innovation and leadership a step further in aircraft STC improvement. Soloy is already developing a seamless integration and installation design for the next generation Rolls Royce engine, the R500. This will function as a conduit installation option for a TBO replacement engine, that will significantly benefit aircraft owners of the B17/f2 powered aircraft.

Soloy developed the new Turbine 206 Mk II, the A36 Propljet Bonanza, T-35 Pillan and many other great aviation STC innovations. We are constantly moving forward with turbine design innovations to serve the aviation community.

Soloy Aviation has become synonymous with reliability, safety and the unmatched power of turbine technology in the general aviation community.
Introducing the new

Soloy Turbine 206

Powered by the proven, 450shp, Rolls Royce 250-B17F/2 engine, the Soloy Turbine 206 offers significant increase in useful payload, climb to altitude and reliability.

Also available in amphibious, sky diving and law enforcement configurations.

The latest innovation brought to you by Soloy Aviation Solutions.

For a brochure or to learn more, please visit www.soloy.com or give us a call at 360-754-7000.
Tire Pressure: Best Friend or Worst Enemy

Airmen as a whole were not well informed on aircraft tires during their schooling to become pilots. The general consensus is that tires have a limited use in flying, yet proper tire inflation can be the difference of a good takeoff and a safe landing.

With the advent of Southern Precision’s new tire pressure/temperature monitoring system (TPMS) for general aviation aircraft, you can now eliminate the once tedious and sometimes aggravating job of checking the tire pressure of an aircraft. With the flip of a switch, this battery-operated, hand-held unit displays the actual tire pressure and tire temperature.

Small, removable, electronic valve sensors transmit the pressure and temperature to the LCD monitor. Pressure can be read as PSI, KPA, BAR, or KC/CM squared. Temperature can be read in Centigrade or Fahrenheit. The monitor also has an alarm setting for high or low pressure.

The bottom line is accuracy of tire pressure and convenience as well as safety, and all while standing up.

Save Your Carpet — Get a Heel Plate

Is the carpet under your feet looking a little thin? What can you do about it? Rugs don’t stay stationary, and if you replace the carpet, it will only wear out again. Southern Precision’s heel plate is the answer to your problems.

The heel plates are 8” x 12” stainless steel with rolled edges. Using Velcro hook material, the heel plates secure to the carpet area in front of the rudder pedals. The plates will not move when shoe heels slide across. The plates also prevent damage to the carpet.

At annual inspection time, the plates can be removed by simply pulling them up and off the carpet. To reinstall, place the plates back in front of the pedals and push down. No screws are ever required to retain the heel plates.

The heel plates will last as long as your aircraft and can be personalized if you so desire. Thanks to the heel plate, you can keep your aircraft’s carpet looking new with hardly any effort!
Ever wish you had a convenient light inside your airplane instead of flashlights? Would you sometimes like a third hand to hold the flashlight while you attend to other tasks? With GloveLite, it’s like you have both!

GloveLite is the perfect tool for flying at night. You can’t drop it, light shines where you need it and you don’t need a third hand to use it. Simply pull the comfortable neoprene“glove” over your hand to expose the tips of your index finger and thumb, and you have a flashlight ready to go.

The bright LEDs are available in your color choice of white, red or green. They are battery-operated and offer eight hours of continuous use. The 2016 batteries are easy to replace when necessary.

We’re positive that you’ll have a great experience with GloveLite, and that’s why we’re offering a lifetime warranty! Never fumble with flashlights in the cockpit again. Order your GloveLite today at www.glovelite.com.

“What a wonderful product!” — Suzanne C., Maine

Presenting ACE — Absolute Cost Efficiency

Upgrade from ACK Two-Frequency ELTs to 406Mhz Technology

- No alterations of instrument panel necessary for remote switch
- Re-use existing wiring harness from remote switch to ELT
- Mounting holes on Artex ME406 line up with existing holes for ACK ELT
- Extremely simplified installation for maximum cost efficiency
- Based on popular ME406 system
- 6-year battery
- Made in the USA

Artex Quality • Artex Technology • Artex Service

The most important thing we build is trust

Cobham Avionics Artex Products Aurora, OR 97002, USA 800-547-8901 Email: sales@artex.net

www.cobham.com
The Lance was a partial answer to a problem for Piper. The LoPresti Lance is the whole answer.

By Bill Cox
Photos provided by LoPresti

Following the demise of the Comanche, Piper suddenly had a gaping hole in its product line. For several years after the Comanche was discontinued, Piper had no airplane to compete with the Cessna 210 Centurion, Bellanca Viking (remember Bellanca?) and Beech Bonanza. Yes, there was the Arrow, but that airplane more appropriately matched the Mooney Executive, Beech Sierra, Cessna Cardinal RG and Rockwell Commander 112.

Shelving the popular 260-hp Comanche was actually a carefully considered plan intended to allow time and resources to develop and introduce the Piper Seneca utility twin. Though some hard-core Comanche and Twin Comanche fans were probably disappointed to see the PA-24/30/39 retired, Piper knew the Seneca and Lance were the wave to the future.

The company didn’t get the Seneca quite right coming out of the gate in 1972, but by 1975, the Seneca II had finally come of age and a variation continues to this day.

The aforementioned Piper Arrow, which was essentially a Piper Cherokee 180 fitted with retractable gear, had been selling well. In fact, in 1972, 1973 and 1974, the Arrow (with the benefit of 20 more horsepower) sold more than the total sales of Cessna Cardinal RGs, Beech Sierras and Rockwell Commander 112s combined.

Inevitably, there was a “but” coming. Piper didn’t have a six-seat retractable. What they did have was one of the most popular, six-place, heavy haulers in the Cherokee Six. Why not, they reasoned, simply mount the Seneca’s retractable gear to the Cherokee Six to create a gear-up people-mover that could haul a hockey team?

The Piper Lance was that airplane. In fact, the Lance was one of the industry’s worst-kept secrets. It had been flying for two years. It was after all, a logical development of a proven idea, a mix-and-match that worked better than Piper ever could have hoped. Putting the wheels to bed on an airplane originally designed for landing gear down and welded had already become a standard trick among bottom-of-the-line retractables, evidence the Piper Arrow, Cessna Cardinal RG and Beech Sierra. The Lance’s distinction was that it was the first airplane to make the transition from fixed-gear super-hauler to high-performance retractable.

Predictably, Piper wasn’t about to compromise the Cherokee Six’s strongest selling point — an excellent payload — by

LoPresti

The Lance was a partial answer to a problem for Piper. The LoPresti Lance is the whole answer.

By Bill Cox
Photos provided by LoPresti

A completed LoPresti Cowl with the LoPresti signature round inlet design and large access panel doors. This cowl offers extremely efficient cooling and air ducting improving speed by approximately 10 to 12 mph.
letting the weight of a retraction mechanism cut into useful load, at least no more than absolutely necessary. Any time you retract a landing gear, the mechanism and structure necessary to support the new system adds weight, and Piper wanted to retain the Cherokee Six’s impressive useful. Not content to increase empty weight and gross by the same amount, Piper began looking for ways to improve the Lance’s carrying ability.

The most obvious was more horsepower, and in one sense, at least, that’s the route they took. The engine didn’t change.

**Q:** Cylinder Problems?

**A:** Nickel.

- worn barrels
- 600 hour top overhaul
- pitting

TITAN® Nickel Cylinders
- corrosion resistant
- 5-year warranty
- over 150,000 barrels strong

[www.eci.aero/nickel](http://www.eci.aero/nickel)
Featured Aircraft

It remained the same reliable, 300-hp Lycoming IO-540 used on the Cherokee Six 300. Nor was there any attempt to pump up power by fooling with compression and thereby compromising engine life.

Instead, Piper elected to attack the intake and exhaust systems, too often paragons of inefficiency on most airplanes. Intake and exhaust systems typically rob an engine of as much as 10 percent of its rated power so that a 300-hp engine may actually only deliver 270 hp “out the pipe.” (Any pilot who flies with reference to a manifold pressure (mp) gauge can appreciate the loss by monitoring it during takeoff. The mp will rarely exceed 28 inches at sea level, whereas full power should be 29.9 inches.)

Following Mooney’s lead, Piper introduced its own version of ram air induction. They installed a side-mounted air scoop on the cowling to route induction air more directly through the air cleaner, thereby minimizing temperature rise. The result was an extra one-half to three-fourths inch of manifold pressure. (Unlike the Mooney “Power Boost” system, there is no provision to bypass the air cleaner altogether.)

Additionally, the Arrow’s comparatively free flow exhaust system was adapted to the bigger engine, and three small stacks replaced the single large pipe used on the Cherokee Six 300. The power increase was therefore “free” in that it exacted very little additional fuel consumption and no reduced time between overhaul (TBO) or reliability. In fact, by coincidence, Lycoming raised the engine’s TBO from 1,800 to 2,000 hours in 1976.

With slightly increased power and less drag from the retractable gear, Piper raised the gross from 3,400 to 3,600 pounds. Maintaining commonality was a prime objective, so the wings and landing gear were adapted from the Seneca
and the nosegear and automatic gear extension system came from the Arrow.

When the design was finally frozen for production, empty weight wound up only 86 pounds greater than that of the stiff-legged Cherokee Six 300. The extra 114 pounds from the gross weight increase was pure gravy. Payload worked out to 1,120 pounds, a mere 80 less than the Seneca twin’s number. This meant that in theory, you could haul a full six folks in the airplane’s buckets, an unusual qualification. (This assumes you purchased a Lance in standard configuration with no options of any kind, something no one ever did.)

Airplanes capable of carrying heavy loads sometimes are susceptible to center of gravity (CG) problems that partially negate their utility. The Lance sidestepped such conundrums by offering baggage compartments at each end of the cabin — one behind the aft seats and another between the cabin and engine. Yes, there are loading combinations that could push the balance point outside practical limits but they’re unlikely. The forward baggage area is deliberately intended to offset problems with an aft CG, the most common situation when loading the airplane to gross.

The big benefit of the Lance was the sheer cabin size. The airplane featured a cabin width of 48 inches compared to 42 inches on the Beech A36 Bonanza and 43 inches on the Cessna 210 Centurion. The six-seat Piper retractable was the most spacious in its class, more reminiscent of a twin than a single.

Such size did limit cruise performance, however. The original Lance managed only about 158 knots, compared to at least 167 knots in the Beech Bonanza and perhaps 164 knots in the Cessna Centurion.
## Featured Aircraft

All numbers below are courtesy of Aircraft Bluebook Price Digest.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Used Price</td>
<td>$78,000</td>
<td>$108,000*</td>
<td>$104,000</td>
<td>$88,000</td>
</tr>
<tr>
<td>Horsepower</td>
<td>300</td>
<td>300</td>
<td>285</td>
<td>300</td>
</tr>
<tr>
<td>Cruise (kts)</td>
<td>156</td>
<td>171*</td>
<td>170</td>
<td>170</td>
</tr>
<tr>
<td>Climb (fpm)</td>
<td>1,000</td>
<td>1,000</td>
<td>1,030</td>
<td>950</td>
</tr>
<tr>
<td>Gross Weight (lbs)</td>
<td>3,600</td>
<td>3,600</td>
<td>3,600</td>
<td>3,800</td>
</tr>
<tr>
<td>Empty Weight (lbs)</td>
<td>1,968</td>
<td>2,002</td>
<td>2,195</td>
<td>2,219</td>
</tr>
<tr>
<td>Useful Load (lbs)</td>
<td>1,632</td>
<td>1,598</td>
<td>1,405</td>
<td>1,581</td>
</tr>
<tr>
<td>Fuel Cap (gals)</td>
<td>94</td>
<td>94</td>
<td>74</td>
<td>90</td>
</tr>
<tr>
<td>Payload (lbs)</td>
<td>1,068</td>
<td>1,034</td>
<td>961</td>
<td>1,041</td>
</tr>
</tbody>
</table>

*estimated
New forward baffles are being installed to improve cooling and efficiency. Long nose gear doors and top and bottom pieces of the cowl are already installed (shown with gray primer).

All gray components are included in the LoPresti Howl Cowl kit.
This meant the Lance was only about 15 knots quicker than the fixed-gear Cherokee Six, perhaps a questionable advantage for a retractable-gear machine.

The late Roy LoPresti was acknowledged as one of the world’s leading aerodynamics experts. Roy was the principal designer of the Mooney 201 and 231, Grumman-American Cheetah and Tiger and, in his younger days, he worked for NASA on such exotic hardware as the Apollo program and the Apollo Lunar Module. In a sense, Roy truly was a rocket scientist, in total contradiction to the cliche. LoPresti’s working motto was, “Life is short. Fly fast.”

LoPresti saw the Lance as a perfect target for a speed improvement program. Though the airplane’s cowling was slightly more aerodynamic than that of the original Cherokee Six, LoPresti had some ideas to improve it further and extract more performance from the Lance. He also felt he could improve the airplane’s overall drag profile, a tall order in view of the Lance’s considerable frontal area.

Consequently, LoPresti’s company, Speed Merchants of Vero Beach, Fla., introduced an entire package of aerodynamic modifications in the late 1990s that significantly improved the Lance’s performance. The original prototype airplane belonged to Scott Muntean of Severna Park, Md., and Muntean’s Lance sported a cruise specification that was about 15 knots quicker than the stock machine.

Certainly, the major contributor to the speed-up is the cowling. The engine enclosure is faired in at both top and bottom, making a clean transition from cowl to windshield on top and cowl to belly on the bottom. LoPresti was well aware that simple air flowing in or out of the cowling could induce major drag and that any protrusion, no matter how small, could disrupt airflow and contribute additional drag. For that reason,
Speed Merchants mounts an aerodynamically clean fiberglass unit with axisymmetric inlets abeam the spinner that are responsible for a significant portion of the additional speed. The Howl Cowl modification introduces induction and cooling air with minimum drag, and equally important, evacuates air with equal efficiency.

The airplane also incorporates a set of Zip Tips, wingtips incorporating landing, strobe and position lights. These are good for two to three knots. Additionally, there are flap gap seals, called Speed Seals in the LoPresti language. There are aileron lobes that fair in the main landing gear (Speed Spats), flap track fairings to improve airflow across the underside of the flaps (Speed Splitters) and probably some other stuff we forgot.

Put it all together, and the result is a fairly realistic 20 knots better cruise in exchange for about 35 pounds of additional fiberglass hardware and roughly an extra $30,000 for the various LoPresti supplemental type certificates (STCs).

Consider for a moment what that does to the Lance’s comparative performance. The retractable Piper single becomes faster than a comparable vintage Beech A36 Bonanza and also easily outpaces a stock Cessna 210 Centurion.

Perhaps sadly, the standard Lance was only to last for two years before Piper switched to a T tail, then switched back to a low tail four years later with the introduction of the Piper Saratoga SP.

It’s interesting to compare the difference in pricing and performance on a typical 1976 Piper Lance versus a 1976 LoPresti Lance, a 1976 Beech A36 Bonanza and a 1976 Cessna 210 Centurion. (Page 26 features a table with this information.) After analyzing the numbers, you can see that if you truly need six seats, if you’re interested in outrunning anything else in the class and if you need to do all that on a budget, it’s hard to beat the LoPresti Lance.
Instrument flight rules (IFR) flying can be challenging for all pilots. Regardless of how much experience a pilot may have, a situation may occur that tests a pilot’s knowledge. For this reason, refreshing one’s skills can never be a bad thing. Chuck McGill, a Master certified flight instructor (CFI) and owner of SafeFlight International, recognized this and created the Practical IFR Flying training DVD.

The DVD is not intended to teach pilots IFR flying but should be used to enhance a pilot’s current skills. It covers a wide range of topics, from basic preflight steps to complex avionics. The training is easy to navigate, allowing a person to rewind and pause topics when necessary. The best part of the training DVD is that it can be watched at your convenience in the comfort of your favorite chair, knowing McGill is providing you with quality training.

McGill is not only a Master CFI; he recently was named the 2009 FAA CFI of the Year, Western Pacific Region. He has been instructing pilots since 1980 and has over 11,000 flight hours in general aviation aircraft. In addition to teaching his own insurance-approved courses, McGill has provided both ground and flight instruction for the Cessna Pilots Association’s 210 course for many years and taught at the AOPA Flight Safety Foundation’s Flight Training Clinics. He has served as an FAA designated aviation safety counselor for over 18 years.

McGill’s pilot ratings include commercial FAA certificates for ASEL, SES, MEL, instrument airplane, as well as his CFI and CFII. He holds a bachelor’s degree in business management and an MBA in finance and marketing and is a retired Lieutenant Colonel, U.S. Marine Corps.

Additionally, McGill owns and operates SafeFlight International, which offers insurance-approved, one-day recurrent training, as well as two- and three-day initial model specific training in the Cessna 210 series aircraft and the Mooney M20 series aircraft.

To purchase the Practical IFR Flying training DVD and to read more about Chuck McGill and SafeFlight International, visit www.safeflightintl.com.

“Chuck McGill’s love of flying and teaching is obvious. He tailors instruction to the student and maximizes learning. He emphasizes practical flying skills. My time with him has made me a better, safer pilot.”

–Donn Larson
Factory Direct Models

Factory Direct Models offers over 1,200 different made to order commercial airline, civilian aviation and helicopters models. If you don’t find the plane model you are looking for, send us a product suggestion. Custom models are made completely to your specifications. You pick the model, the markings, and finish your model with a fully personalized base. We can custom make any model you’d like in sizes ranging from a desktop model to a full-scale replica. We can custom make any model you’d like up to 72” in diameter. If you would like to change the models in any way, a personalized model can be built.

Our U.S. operations are managed by Mike Gibson, founder of Factory Direct Models. Mike, a former pilot, brings 16 years of modeling expertise and aircraft knowledge to our customers. He is widely recognized in the aviation community as a man of integrity and honesty. A graduate of Arizona State University and active member in the aviation community, Mike enjoys working with veterans and has a passion for collecting just about any aviation artifact he can find. Mike’s commitment to customer service is unprecedented in this industry. His love for the business shows everyday as he interacts with fellow pilots and aviation enthusiasts worldwide offering advice, marketing solutions, and just good old-fashioned pilot chatter.

“I can’t tell you how impressed I am with your customer service, attention to our needs, and the feeling that you treated us as though we were your only concern.”

–Dale Dunham

“After three models I am still amazed at the attention to detail and craftsmanship. Your models are truly phenomenal.”

–Bill Davis

You can be assured that our standard of excellence will exceed your expectations. Factory Direct Models allows you to interact directly with your craftsmen. Our company is completely transparent and offers you full access and visibility during the construction of your model.

Give us a try. We guarantee you will not be disappointed.

SCS Aircraft Interiors is an OE Manufacturer of seating components, custom floor mats, and aviation accessories for the General Aviation. We offer an expanded line of aviation products using FAA approved materials. Now SCS fine Floor Mats are a click away from you: www.scsairinteriors.com

SCS Carpet features:
- Meets FAR 23.853 part I(a)
- Lightweight
- Extremely durable
- Backed with foam for noise and vibration reduction
- Custom tail number
- Custom logo embroidery
- Free carpet samples
- Satisfaction Guarantee

NOTE: MATS ARE NOT SCALED PROPORTIONALLY

PIPEROWNER.ORG • 3814 Prosperity Road, Duluth, MN 55811 • Call: (218) 728-1614 • Fax: (218) 728-2674

PIPEROWNER.ORG

PIPEROWNER.ORG
Want to get your favorite pilot something that will be thoroughly enjoyed and cherished this Christmas? Any pilot who is serious about flying can receive nothing better than a gift that reflects his passion for airborne things. The problem is that aviation is not only an esoteric activity, it’s rather expensive, so loved ones often have no idea what a pilot wants or needs.

Traditionally, gift givers have always provided pilots with things like caps, bomber jackets and headsets. Anyone can go online and find plenty of these presents in varying price ranges. These are all great gifts but most of us have them. This year, it is time to pull out the stops and try to get your pilot something that is very special, personal, and something that he might not do for himself.

Since it is the low-activity season on top of the fact that most pilots’ activity has slowed because of the economy, we have come up with some gift ideas that will take advantage of the downtime. Some of the following items can be installed or done to an airplane during the lull, making it ready for glorious spring weather. Your pilot and/or his mechanic may need to get involved, but these will not only be gifts, they will add value to the airplane.

Oregon Aero’s VK SmartCushion
A serious pilot wants safety and comfort. One gift that will provide both of these is a seat upgrade from Oregon Aero. This is a dependable company that does business with the U.S. military and civilian
pilots. Oregon Aero is built on providing more comfort for the pilot and crew, and in an airplane, this also means safety.

I met Mike Dennis, president of Oregon Aero, around 1990. His then new company came to Oshkosh with kits designed to take the headache out of headsets. The memory foam ear cup pads and the soft top head cushion revolutionized comfort and doubled the noise reduction offered by most headsets. (This was back before active noise reduction technology.) The military and pilots, particularly aerobatics guys and instructors, virtually gobbled up all of the kits he could make, providing a base from which he built one of the more aggressive, creative companies in the business.

Oregon Aero offers two versions of a seat upgrade kit. The VK SmartCushion is a totally rebuilt seat, repaired as needed, using shock-absorbing memory foam and new, matching upholstery. The memory foam was developed by NASA for use on long space flights, molding to the natural contours, or pressure points, of the individual sitting in it.

In addition to the benefits provided by the memory foam, the seat can be redesigned to help the pilot sit taller or more forward, depending upon his or her needs, and will be ergonomic, providing a painless natural position. Besides the amazing comfort, the shock-absorbing memory foam lessens fatigue.

Oregon Aero will send you a crate with prepaid shipping and you simply insert the seat and return it to the shop in Scappoose, Ore. In one to three weeks, depending on how customized you want the foam and upholstery, the seat will be returned, ready to install. A typical Piper seat costs $1,450 and for an additional $50, you can add monogramming.

If your pilot doesn’t own an airplane but you want to provide this level of comfort, Oregon Aero offers a portable cushion set that is matched to the pilot’s physical needs and can be carried to different aircraft. The
portable cushion retails at $199 for the one-inch-thick memory foam and $215 for the two-inch-thick memory foam, including removable lumbar support and upholstery. Many pilots own both and use one for a passenger if they don’t rebuild both front seats.

If the seat upgrade is outside your budget, consider any of the other myriad comfort products offered by Oregon Aero, including different headset upgrades. The upgrades, starting at $133, will greatly improve comfort and are available for just about every headset.

Oregon Aero ran a very enticing special this year, offering discounts on the second or more seats and a number of other incentives. While this was a limited offer, I would bet that as long as the economy stays where it is, more specials will be offered. You should always ask.

LP Aero Plastics’ UV-Blocking Tinted Windows

Your pilot has one thing on his airplane that is his most basic safety item: the windshield. A good windshield enables him to see everything from birds to clouds to other aircraft, and protects him from wind, weather, noise and hard things with wings. Good windshields are clear, tinted for glare and brightness, and free of optical distortions where they are curved or bent. The problem with windshields is that, being made of plastic, they are soft, scratch easily and are affected by cleaning chemicals. Swirls and scratches diffuse light and reduce visibility and in some situations, are actually dangerous. They are also susceptible to moisture absorption and become cloudy as they age.
For some reason, pilots always seem to “make do” with the windshield they have. Until it becomes very opaque, pilots just seem to let them go. Fortunately, it only takes a few hours to replace most windshields. If that wasn’t persuasive enough, there is now a new product that makes older windshields virtually obsolete.

The one thing that kills aircraft interiors is ultraviolet radiation. It fades upholstery, embrittles plastics, vinyl and leather interiors, and is generally harmful to the pilot and his passengers. Since you can’t go rubbing SPF 40 on everything in the cabin, the next best thing is to keep the UV rays out entirely. LP Aero Plastics does this with a revolutionary formula used in its aircraft windshields and windows.

Available in either the traditional green tint or the racy dark gray, the UV-blocking plexiglass parts will keep the cabin up to 20 degrees cooler during the summer months and help interior items last much longer. A pilot no longer has to fear visual flight rules (VFR) on top if he has sensitive skin.

LP Aero Plastics had been making plexiglass parts for airplanes for over fifty years. The company has forms for about every certified and most kit aircraft. I have used LP Aero Plastics parts on a number of occasions and found that the fit is spot on right out of the box and the optics are always perfect.

Most mechanics, fixed base operators (FBOs), or mail-order houses can order a windshield for your airplane. The company also discounts large orders. They have an online catalog for you or your mechanic. Piper windshields are usually two-piece, with a set for an Archer costing about $645, plus shipping and installation.
GAMIjectors
If your pilot has an airplane powered by an injected Lycoming IO-series engine or a larger, fuel-injected Teledyne Continental Motors engine, then take our word for it, he would love a set of GAMIJECTORS. These are fuel injectors that are tuned to provide the correct amount of fuel to a particular cylinder and allow smooth operation and running lean of peak (LOP). You don’t have to know what this is, because, believe me, he does.

General Aviation Modifications, Inc., also known as GAMI, sells these injectors through dealers and you can get a list of them by visiting www.gami.com. The parts are easy to install but do require a minimum of a mechanic’s supervision and a logbook entry.

The six injectors cost from $699 to $999, depending upon the engine, but they can save up to eight gallons of fuel per hour (around $25 or more per flight hour). Running lean of peak also cleans up an engine and smoothes it out, resulting in much less wear on the internal parts. Bottom line, it will run better longer.

Hardware and Tools
More and more owners are getting involved in the day-to-day maintenance of their airplanes. The sport pilot movement is also enticing a lot of new sport pilots to work on their airplanes. What all of these guys will need, besides training and hardware, or a school for the repairman’s certificate, is tools and hardware.

While regular mechanics’ tools have a place in a pilot’s tool chest, there are some pretty specific items he will need, including safety pliers and safety wire, brake tools, spark plug gapers, oil filters and sparkplug wrenches, plus a few more tools, depending on how much maintenance he wants to do.

It is difficult to find all of the items you need in one kit, but if you go to www.yardstore.com, you will have help assembling the best kit your pilot could ask for. For hardware, Aircraft Spruce offers kits ranging from $54 to $274 that provide about everything any owner would need for day-to-day maintenance and care.

Finally, the Ultimate Cockpit Toy
If you want the ultimate cockpit toy, look no further than Garmin’s portable GPSMAP 696. This thing is so capable it probably makes controllers cringe. It has a huge 7-inch, full-color screen, making it a virtual primary flight display (PDF). Besides all of the normal databases and Garmin flight-page information, it offers Garmin’s electronic FliteCharts for instrument flight rules (IFR) en route and approaches, terrain, and XM WX Satellite weather, which includes next generation radar (NEXRAD), terminal aerodrome forecasts (TAFs), aviation routine weather reports (METARs), and even temporary flight restrictions (TFRs). Confused yet?

To put all of this into perspective, this one little box has more capability than every instrument available for any airplane ten years ago. This is truly amazing stuff! And you can get it for the pilot of your dreams with just a little plastic. Listing at $3,595, the going street price at mail-order houses is $3,295.

A Gift for the Two of You
If you want the gift that gives back, go online and visit www.airjourney.com and www.caribbeanskytours.com. Touring these sites will leave you breathless. These small but dynamic companies will put you into a group of airplanes and take you on a guided tour of nearly anywhere in the world you would want to visit. This time of year, they are putting together trips to places like the Bahamas, Bermuda, Central America and Mexico. You and your pilot, in your own airplane, (naturally with its new windows, GAMIjectors, VK SmartCushions, tool kit and...
Garmin 696) will be treated to a true aviator's adventure. All paperwork, customs work, fees, tips and taxes are handled by the company. All guesswork is removed. You just get in and go.

Wrap-Up
These are not only some of the more expensive gifts you can get your pilot, they are some of the nicest. Your pilot isn’t getting any younger and one of these days flying will be a thing of his past. Why not take this year to make Christmas one to remember for the rest of his life? You’ll also score some big points at the airport when he tells his buddies what you’ve done. And while you shouldn’t put a price on Christmas and giving, if you can handle bigger items, why not go ahead and do it? With pilots, they will think more about the thought than the price tag.
What Every Pilot Needs

A helpful shopping guide for new aircraft owners and a handy reminder for those with experience • By Kathie Brosemer

When you bring home a new puppy, you know you will have to buy a leash, collar, bowls, perhaps a bed, crate or kennel, chew toys, training treats and an endless list of other accessories. Abundant paraphernalia comes home with any new addition and your new-to-you airplane is no different from that furry fellow.

What do you need and where can you find it? The experience can be exciting, though a little bewildering, for a first-time owner. Here we’ll cover what you need for regulations, safety, protection, weather gear, tools and supplies for owner maintenance.

Regulations
If your aircraft has history, one or two things may have gone missing. The first thing to spend money on is replacing any missing airworthiness documents. The airworthiness certificate will have been handed to you as part of the sale, but if it ever goes missing, it can be obtained from the FAA. Ownership is that pink slip from the FAA form you sent in, which is temporary until your official document arrives in the mail. The certificate of registration might need updating if you’ve brought the airplane across state lines and that can be costly. Many states have use tax, similar to sales tax but for items bought out of state and brought home, which you’ll have to pay to get your registration.

Then there’s the flight manual with weight and balance information that must be in the aircraft. Do you have yours or do you need to replace that? A replacement manual can be purchased from the manufacturer. You must supply the model and serial number, and you’ll receive the most recently updated manual for your aircraft.

Safety
For safety, the first thing to buy is a fire extinguisher. Did you get one with the aircraft? Is it the right kind? What’s the date of the last check and recharge? Does it need service? Is it properly mounted where you can reach it in a jiffy, but where it won’t roll around or become a projectile?

After that, the next purchases should be survival gear. Assemble or purchase a kit appropriate for the kind of flying you’ll do and terrain you’ll be over. The subject has been covered thoroughly in previous issues and numerous books, so researching what you need should be easy. Be sure to include first aid, signaling, food, water, shelter and protection. Get a bag, stock it, weigh it and keep it in the airplane.

Consider life jackets if you’ll be flying over water or cross-country over land with lakes as your best forced landing site. Manual inflatable jackets are best. Underwater egress training would also be a good investment if you do that sort of flying.

Protection
Three words: Rent (or buy) a hangar. It’s the best protection for your sizeable investment, preventing rain infiltration, heat damage to avionics, sun damage to upholstery and vinyl, and significantly reducing your risk of theft and vandalism.
Even if you have a hangar, get an engine blanket. You’ll no doubt have your airplane outside overnight when away from home, so it will come in handy eventually. A cabin cover that keeps out the rain would also be a good investment if you’ll be away overnight. It beats putting tape over the upper door opening!

Having chocks, a tow bar and tiedown ropes or nylon straps will make your life easier if they’re not already in the aircraft. You can’t count on the fixed base operator (FBO) at your destination to have these things for your use. On my first cross-country as a newly licensed pilot, the FBO at Timmins, Ontario did not provide tiedowns nor any assistance digging out tiedown loops from the thick ice coating the ramp. I had to leave the airplane out in a cold wind and head for Canadian Tire to buy rope, then use the tow bar to bash the ice apart enough to pry the iron loop from its resting place.

When making these purchases, I would recommend nylon rope; it has abrasion resistance, holds a knot well and won’t shred into nasty sharp bits like polypropylene will. For a tricycle gear aircraft, one set of chocks for the nose will do, but get two for a taildragger and chock both mains. You should also get pitot tube covers and look for covers and plugs to stop openings in the aircraft, in places like the cowl and tailcone.

Weather Gear
If you keep the airplane in a cold climate, get set up with some sort of engine preheat system. Tanis makes an electric probe system but there are other ways to get the job done, ranging from a light bulb inside the cowling and a heavy blanket thrown over, to a kerosene heater (don’t leave unattended), to a remotely-activated electric unit rigged to turn on with a phone call. Pilots are clever ones.
Pick up some de-ice fluid and a pump sprayer unless you’re prepared to wait for the sun to melt frost off your wings after it has been out overnight. Be careful with de-icing fluid near plexiglass — it can have adverse effects on the plastic.

**Tools, Spare Parts and Supplies**

The most important thing you’ll need for owner preventive maintenance is a set of manuals. The service manual and parts manual can be found online; search for the manuals using your model number. While you’re assembling reference material, get catalogs for all the major parts suppliers too. If your mechanic doesn’t mind you sourcing your own parts, you might save some money doing so. At the very least, you can get items for maintenance you’ll do yourself and you’ll be able to research and compare pricing on the items you can’t do yourself.

Get a small tool kit to keep in the airplane. Include open-end wrenches, a socket wrench set, pliers and screwdriver with multiple bits. Weigh it and keep it in the baggage compartment.

Find a local supplier of aviation oil and get a case of oil and some filters. A set of stainless steel replacement screws and washers, an alternator belt and one or two landing light bulbs would also be handy to have. If you do a lot of cross-country
flying, keep these items with your small tool kit in the baggage compartment.

You’ll want certain specialized tools and duplicates of things you already have in your garage to keep in your hangar. A creeper is convenient to use under the engine, removing cowling, and belly and underwing work. It’s nice to not have to kneel or slither around on cold, dusty, greasy concrete floors. A torque wrench with a socket for your spark plugs and a good set of wire twisters and safety wire will round out your standard mechanic’s tool set for aircraft use.

A battery charger is useful to have in your hangar, as well as a small electric air pump to help you keep your tires inflated. Work lights are critical because even in a hangar, there is never enough light. Get several of them and any necessary extension cords to operate them where you’ll need light.

Add some supplies to keep your craft pretty — degreaser, buckets, towels, soap and a hose if water is accessible nearby, plus a small vacuum cleaner for the interior. If the upholstery is clean and in good condition, spray it down with some Scotchgard to keep it that way.

Other Odds and Ends

Over time, you’ll think of other things you ought to have for the airplane, but this will get you started with your first or keep you up-to-date with your current. Enjoy shopping!
Cherokee Hints and Tips

The following are excerpts from Cherokee Hints and Tips 2000: A Piper Cherokee Sourcebook edited by Terry Lee Rogers. The book compiled the best articles and information that appeared in several publications.

While this information is extremely helpful and valuable, keep in mind that some recommendations may not apply to your airplane. The hints and tips are intended to be a supplement for you and your properly-licensed technician or mechanic. The Cherokee Pilots’ Association and the Piper Owner Society cannot be held responsible for the accuracy or airworthiness of any information provided in these articles. You should always consult with a professional mechanic or a local general aviation district office (GADO) for advice.

How to Fix Your Lance Problems

Lance Has Rough Idle

I have a Piper Lance which, after flight and during warm weather, does not idle well. It hunts and then eventually dies at 1,000 rpm if the fuel pump is not turned on. Any thoughts?

Steve Richard
Pleasanton, Calif.

The “Engine Troubleshooting Guide” from Light Plane Maintenance magazine lists 14 potential causes of poor idling, many of which fall into two major areas: high fuel pressure and an over-rich mixture, or conversely, low fuel pressure and an over-lean mixture.

Your airplane is suffering from the latter condition, as evidenced by the improvement when using the fuel boost pump. Items to check include idle mixture adjustment, plugged nozzles, induction air leaks and defective engine fuel pump.

However, before you spend too much money on these items, be aware that this is not an uncommon problem and it may simply be caused by too much heat in the engine compartment causing fuel to boil in the lines (a vapor-lock type of condition). The only suggested cure here is to keep ground operations to a minimum and use the boost pump as necessary.

Hot-Running Lance Had Bad Gauge

By Owen Waggoner

A few months ago I wrote asking if anyone knew why my PA-32-RT always showed an oil overheat indication. I received letters from other Lance owners with the same problem, but no answers. I also researched letters from past magazines and found that this has been a problem since the first Lance was produced. I am writing now to announce that I have solved this problem (at least in my own airplane).

I installed an Electronics International ultimate scanner and found that when the original oil temperature gauge shows 180 degrees Fahrenheit, the scanner also shows 180 F. However, when the gauge indicates halfway between 180 F and 260 F, the scanner shows 190 F. When the gauge is redlined, the scanner shows 212 F.

I had the gauge inspected prior to the installation of the scanner and it checked out OK, so I believe the problem is that the gauge is reading the best it can, but the calibrations between 180 and 260 degrees Fahrenheit are too small for the gauge to show correctly.

I have always wanted this engine scanner and now I really appreciate what it can do. Without the digital accuracy on each cylinder’s head temperature (CHT), exhaust gas temperature (EGT) and oil temperature, I was just guessing at how the engine was running. I do not want to guess when there is so much at stake. I want to know and now I do.

Troubleshooting Lance Landing Gear

By Donald A. Turner

Several months ago, I sent a letter requesting advice on how to fix the hydraulic system on my 1976 Lance so the nose landing gear would always go down and lock at speeds of approximately 125 knots. My logbook indicated the hydraulic pump motor had been replaced twice by the previous owner due to the high limit pressure switch failing to turn off the motor. The motor ran continuously in flight until it failed. I assumed that since the hydraulic pump motor had been replaced, the pump must be putting out the right pressure.

Consequently, I received a very helpful letter plus a phone call from two readers. They told me how to test a system to find the problem. As usual, after the problem was pinpointed, fixing it was easy.

To test the gear, we put the airplane on jacks and lowered the gear. As the gear lowered, a mechanic tried to stop the nosegear from going down. He stopped it by pushing on it with his hands. Next, we checked the nosewheel hydraulic cylinder to be certain that we did not have a bad cylinder. We did not, so we knew that proper pressure was not being developed or the pressure was being lost somewhere in the system.

We felt the problem was either in the hydraulic pump or that the bypass valve was leaking. Since we had recently replaced the O-rings in the bypass valve, we felt we should check the pump.

Previously, we felt the pump must be good because two motors had been replaced. This was a wrong assumption. The electric motor had been replaced twice.
without anyone running a bench check on the pump itself. The output pressure was only about half of what it should have been, so we had the pump rebuilt.

Upon installing the pump we found the nosegear was much harder to stop but we could still stop it with our hands. We were puzzled. Our mechanic felt he should pressure test the bypass valve, upon which he discovered it was opening too soon.

Over the years, the spring had weakened a little so he adjusted the tension on the spring until the bypass valve did not open until the normal/high operating pressure was exceeded. The mechanic reconnected everything and we retested the nosegear.

Now, when the nosegear is lowered, it will push you across the hanger if you try to stop it. In flight, we can feel the jar when the wheels hit the stops and we have “three in the green” every time.

To eliminate the problem of the hydraulic motor not turning off because the high pressure switch fails, I installed a yellow light on the instrument panel that is lit when the motor is running. When we activate the landing gear, we expect this light to turn on until the wheels are positioned and then it should go out. When it fails to go out, we will pull the breaker on the pump to prevent the motor from burning up. When we want to lower the wheels, we can turn the breaker on and know we still have a hydraulic system that works.

Points to Watch on PA-32
By Henry N. Oldham
I have flown Cherokees for more than 15 years and have owned two: a 1978 Archer II which I sold in 1981 and a 1979 Lance II which I still have.

The Lance is a fine ship, but I want to pass on two hints to the readers:

1. There is increasing evidence, as stated in the media, of muffler and exhaust system problems with the airplane. There have been instances where they failed and torched the mags. In my case, the center muffler ruptured and burned holes in the shroud and air induction assembly, ruining the engine.

An 80 percent loss of power on takeoff at night at gross is no fun. Pay particular

Continued on Page 46
What Everyone Ought to Know about Piper Brakes

By Terry Lee Rogers

There have been numerous articles written on aircraft brake systems and many are very good. Unfortunately, few stop to explain a common complaint applicable to Piper brake systems.

The common scenario: the operator bleeds and bleeds the brake system, but no matter how long and how hard he bleeds the system, the brakes remain spongy. This is a typical problem which applies particularly to Piper systems, but the problem is not necessarily that an elusive air bubble cannot be purged from the system. The spongy condition may result from internal hydraulic leaks within the system and no amount of bleeding the brakes is going to help.

Let’s take a look at the typical Piper brake system and see how it operates and why many operators have the spongy brake syndrome.

The Piper system uses three separate master cylinders to operate the brakes — one for the left toe, one for the right toe and one for the hand brake. In each of these cylinders, there is a small but important seal known as the DynaSeal.

The DynaSeal is designed to seal off fluid flow in one direction. Without the seal, when you apply the hand brake, the fluid would flow through the toe cylinders back to the reservoir and there would be no brake action. Also, the same result would apply with the toe brakes; the fluid from these cylinders would flow through the hand brake cylinder back to the reservoir.

How the System Operates

The Piper hand brake and toe brakes are in the same hydraulic system. The pressure line connects to both the left and right toe brake pressure lines which connect to the wheel disk cylinders.

When the hand brake is applied, its DynaSeal permits hydraulic fluid to enter the pressure line. However, DynaSeals in each of the toe brakes’ master cylinders activate to prevent fluid from passing. In effect, the DynaSeals lock out the toe master cylinders.

Likewise, when the toe brakes are applied, the DynaSeal in the hand brake master prevents fluid from passing and the DynaSeals in the toe brakes’ masters cause fluid to pass from the individual master cylinder to its corresponding wheel cylinder.

This is the reason why you cannot pull the hand brake up when the toe brakes are applied and why you cannot use the toe brakes when the hand brake lever is applied. It is a clever system which permits the hydraulic system to perform two duties rather than just one.

However, when one of the DynaSeals develops a leak, hydraulic fluid is diverted to the reservoir rather than to the appropriate wheel cylinder(s) and you get that spongy feeling. Note that only one DynaSeal needs to go bad to cause such a leak.

What you end up with is a system that acts like you have air in the system, but no amount of bleeding will help. The only cure is to overhaul the master cylinder and replace that leaky DynaSeal.

Bleeding the Brakes

We have seen that bleeding Piper brakes cannot solve all problems with spongy brakes. However, whenever air is allowed to enter the system, such as when brake cylinders are repaired or replaced, the system is going to have to be bled.

There are several ways to bleed the brake system. Your mechanic may use a pressure system which applies fluid under pressure from an air tank.

Assuming that you do not have a pressure bleed system available to you, you will be bleeding the system using one of two similar methods. In one method,
you put a short length of Tygon tubing (available at your auto parts store or at the local pet store — it’s also used in fish aquariums). You want tubing with an inside diameter of 3/16 inches.

Put one end of the tubing inside a partially filled glass jar of hydraulic fluid (use only MIL-H-5606 aircraft hydraulic fluid). Make sure the end is kept submerged in the fluid and attach the other end to the orifice on the wheel cylinder. Then pump both the hand and the toe brakes until the bubbles stop. Then do the other side. When all bubbles are evacuated from the system, the system is properly bled.

The other method is a variation of the first. You simply use longer lengths of tubing (about 15 feet on each side of the airplane) and run these two tubes from the respective orifices to the main fluid reservoir on the firewall. Now pump both the hand and each toe brake until all bubbles are evacuated from both sides. The entire system has now been purged of air in one operation.

The only thing left to do is to tighten each of the bleeder fittings and remove the tubing. The job is complete.
Winter and Your Aircraft

When Should You Use a Winterization Plate?
The oil winterization plate is not a red-line item. There is no specific temperature or flying condition when the plate must be installed and one at which it must be removed. A pilot is on his own in making the determination. In fact, there are a lot of Cherokee 140s out there with no plates — they were lost years ago, yet the airplanes are being flown regularly with no winterization plate at all.

Generally, you should make your decision based on ground temperature. The 10 or even 20 degree Fahrenheit difference between ground and aloft temperatures will not make that much difference to your engine. What you are concerned about is bringing up oil temperature to a working range before takeoff. High power with semi-congealed oil is what does the damage to your engine.

The plate should remain installed for the worst of the winter and removed when you can expect temperatures to remain generally above the 50 F. It is not an item which you should have to install and remove on a regular basis for each individual flight you make.

Helpful Hints for Winter Starting
By Bradford Parker
Although high-wing airplanes are preferred here in Alaska, I have seen some PA-28s with 850 tires and a PA-32 fork on the main. This makes them look really tough, like a jeep of the air.

My Cherokee 140 is a 1975 with wing-tip and tail strobes, copper cables, loran and an auto gas supplemental type certificates (STCs). I don’t have any problems at all with auto gas, although finding suitable auto gas without alcohol in it during the winter months is difficult.

One thing I keep in mind when draining tanks in the winter is to not force the drain. If the sump does not work, it is because there is ice there. Forcing it will only loosen it up so it can possibly float around and plug the fuel line. You need to get it in a hangar where you can get the ice inside to melt and then drain it out.

I heard another winter flying tip at an FAA seminar that I plan on trying this winter. One of the presenters, a commercial air taxi operator, recommended not turning the prop over by hand in cold weather prior to starting. He said that the oil really does not lubricate well because there is no oil pressure and you are just scraping bare metal against bare metal. After preheating, he says you should just get in, prime the airplane and start her up.

Continued from Page 43
attention to the exhaust on inspections and pre-flights.

2. Watch for cracks in the engine mounts near the firewall attach points. They are hard to see. Flickering of the gear warning light is an indication.

The former problem is probably caused by the engine being too tightly cowled and running too hot; it runs too near red-line. This certainly doesn’t help engine longevity. Look at Trade-a-Plane. See any Lance that got close to time between overhaul (TBO)?

The latter problem is caused by the lack of elevator authority in the flare. It is very difficult to hold the nosewheel off, especially with two aboard up front, causing the nose to come thudding down. Look at the moment arm between the nosewheel and the firewall. Then add the weight of the engine to the picture.

Tips on Starting a Six or a Lance
By Donald A. Turner
I read an article about difficulty starting a Cherokee Six 300. We have a Piper Lance which is almost identical to the Cherokee Six 300. Here is what works for us every time:

Cold Start
• Prop set to high speed
• Mixture control full rich
• Turn on fuel pump for five to seven seconds
• Turn off fuel pump

Hot Start
• Prop set to high speed
• Mixture control full rich
• Turn on fuel pump for five to seven seconds
• Set mixture control to idle cutoff
• When engine fires, quickly move mixture to full rich

Note: leave throttle wide open

Engage starter
• When engine fires, quickly move mixture control to full rich and quickly move the throttle back to ¼. Be careful. You must get the throttle back quickly since it is set at full throttle.

• If engine does not start after 10 seconds of cranking, set mixture control to full rich, turn on fuel pump for five seconds, let starter cool and crank again.

After a short runup, such as taxiing to the gas pumps, use the hot start procedure. The engine likes to find any excuse to flood itself.
First Mass Arrival of Piper Cherokees at EAA AirVenture 2010

The Cherokees 2 Osh committee is excited to announce the first mass arrival of Cherokees at EAA AirVenture. The day will begin on Friday, July 23, 2010 with staging in Waupaca, Wis., flying the mass arrival to Oshkosh, and ending with a celebration dinner in the nature center on EAA’s grounds, commemorating the 50th anniversary of the first Cherokee built in Vero Beach, Fla., by Piper Aircraft Corp. Fifty lucky Cherokee pilots will go down in history as those who flew the “50 on the 50th”.

Training will begin on Thursday, July 22, 2010 at Waupaca Municipal Airport (KPCZ). The FAA and EAA have mandated the 1 p.m. time slot on Friday for the arrival of these special airplanes. Because the FAA limited this first arrival to 50 airplanes, the slots will be given by date of pre-registration and after 50 have been received, a waiting list of hopeful pilots will be kept. The earliest built Cherokee to participate in the mass arrival will receive special recognition.

The details and registration for this adventure to EAA AirVenture 2010 are on www.cherokees2osh.com.

West Coast Piper Cherokee Fly-In Plans a Celebration

This year, the West Coast Piper Cherokee fly-in wants to do something big to celebrate the 50th birthday of the Cherokee. To do so, they have decided to join forces with the Arlington Fly-In, which is the third largest sport aviation fly-in, only behind EAA AirVenture and Sun ’n Fun.

The event is attended by hundreds of airplanes, thousands of pilots, and tens of thousands of the general public. For this special anniversary, the Cherokee will be the featured airplane at the event, and the West Coast Cherokees have secured parking dedicated solely for Cherokees. For more details, visit www.arlingtonflyin.org and http://cpa-w.org.
Advantage Aviation Insurance

- Over 30 Years of Aviation Insurance Experience
- Private Aircraft, Corporate Aircraft, Helicopters, FBO’s, Charter Operators, AG Operators, Airports, Flight Schools and more!

AAI’s “Advantage Service Plan” Means

- Available When YOU Need Us
- 24/7 Service Assistance
- Easy Payment Plans Available
- Best Coverage at Best Price
- Professional, Prompt, Courteous
- Representing All Major Companies

“Service You Can Depend On”
Toll Free (866) 833-5224
www.IFlyAAI.com • E-mail: jzimmer@IFlyAAI.com

LUXURIOUS LEATHER INTERIORS

UPGRADES FOR “DO IT YOURSELVES”
It’s simple: you remove, we do the work, then you reinstall.

For all PIPERS! Full LEATHER cushions/back/sides the works!
Shaped/Contoured Seat Foam, rewebbed belts
All LEATHER Side Trim Panels,
Plush cut pile carpets...nylon/wool
Custom Embroidery Logos or Whatever
Two part Sound Deadening system (it works)
Everything meets or exceeds FAA 23.835/25.583

Call or email for complete pack of info lots of designs to choose from.
Outstanding Quality & Outstanding Prices
Ph: 480-998-1752, Fax: 480-998-1781
www.aviationscreations.com
We also offer complete in house refurb's in Arizona

“What’s in YOUR Engine?”

Member’s Discount
Only $13.95
Pre-Paid
Postage to Lab

- Catch wear BEFORE it becomes critical
- Increase resale value with trend history
- View Your Results On-Line @ avlab.com
- Save Time & $$$ - Pre-Paid Postage to Lab

AVIATION LABORATORIES
800-256-6876
Visit: www.AVLAB.com

SEAT CYLINDER
“AV-LOK”

FAA/PMA Approved Part
Applicable To PA-28,
PA-32, & PA-34 Models
Direct Replacement For Piper Cylinder
Substantial Discount Off Of Factory List Price
Call Chuck at (666) 885-8317 or
Email: chuck@avfab.com

SEAT BELTS
PA-23 / 24 / 28 / 32 / 34 / 44

Shoulder Harness Kits
PA-23 / 24 / 28 / 32 FAA PT
5 999 Fixed Straps Kit
5 999 Velcro Reel Kit
Replaces Your Warn Harnesses
Direct replacement assemblies:
PA-23 / 32 / 44
$ 309.00 per Set
Rear Lap Belts available

AIRCRAFT JACKS

Alpha Aviation Inc.
1505 Chasen Lane
Burnsville, Minnesota 55337
1-800-653-5112 Fax: 1-800-521-9948
www.alpha-aviation.com

AVIATION INSURANCE
RESOURCES

WARNING!

Don’t even think
of calling another agent.
Call AIR-PROS first!

Save Time & Money!
ONE CALL
1-877-247-7767
ALL MARKETS

Best Rates, Broadest Coverages Available
Association Member Discounts & Coverages
Single & Multi-Engine Pistons, Turbines, Jets, Helicopters, Hangars, FBO, Renters, Sport Pilot, LSA

PIPPERS
22 years of service
Your display advertising manager is Dan,
ext. 116.
Call today!
(866) MY-PIPER
697-4737
danielw@piperowner.org
The world’s smallest, most convenient portable oxygen system ever developed

- 5” high by 1” wide fits in your pocket or optional holster
- A total of 14 one second blasts available in each unit
- Oxygen fights fatigue and doziness

(860)656-7720
www.oxy2go.com

For Portable Oxygen Systems or Windsocks

Bookmark This Useful Website

www.skyox.com
or call 800-253-0800

Tell our advertisers you saw their ad in PIPERS magazine!

The Plane Tug
Affordable Cordless 12 Volt DC Tow

- 12VDC cordless power
- Adjustable yoke for many aircraft
- Rocker switch forward and reverse
- Easy nose wheel hook up
- Battery maintainer
- Wt. 85 lbs with battery

The Air Store
(402) 748-3860 • Box 456
Osmond, Nebraska 68765
www.airstore.biz

PIPER PLASTIC
HEINOL & ASSOCIATES
PROFESSIONAL’S CHOICE
#1 AROUND THE WORLD
WWW.PIPER-PLASTIC.COM
903 534 1897 FAX 903 534 3944

PIPER OWNER.ORG PIPERS 49
www.oxy2go.com

Organizer consoles

PIPER
PA32/34
Cherokee 6
Performance
Package
Available accessories:
Device Mounting Plate
MicCoPlex Armrest
Cupholders
and more
Gift Certificates
Available

Yoke reconditioning

Call for Christmas Specials

330-669-9099
www.Saircorp.com

NEW!! FOR YOUR TOMAHAWK FAA/PMA’d
WING LIFE EXTENSION KIT...$3,675.00
Now EASA approved
Add years to the life of your Tomahawk
*18,650 hrs minimum with our kit*
SUN VISORS (set)...$425.00
FS 221.42 Bulkhead...$990.00
Vertical Fin Attach Plate...$120.00
Anti-Shimmy Nose Gear Link...$550.00
Tail Skid...$145.00 • Wing Walk Kit...$55.00
Upper Cabin Door Handle & Lock...$70.00
Upper Cabin Door Loop...$55.00
F.S. 240.62 Tail Bulkhead...$75.00

STERLING AVIATION TECHNOLOGIES, INC.
20624 193rd Ave Ct. E • Orting, WA 98360
Phone: 360-893-6378 Fax: 360-893-8376
www.sterlingaviationtech.com

LEATHER COVERS FOR YOUR CONTROL YOKE!

PILOT INSTALLABLE with our exclusive Velcro “zippers.”
FREE INFORMATION CALL TOLL-FREE
1-800-634-0094
WARREN GREGOIRE & ASSOCIATES LLC
1933 Davis St. Suite 276, San Leandro, CA 94577
Phone: (510) 633-9353 • Fax: (510) 633-9355
WEBSITE www.warrengregoire.com
Piper Cherokee PA28/32/34/44
Brand New Interior Plastic Trim Parts

FAA-PMA Approved

Plane Parts Company

Parts are trimmed and ready for installation!

Certainly you care about your airplane, and you want to ensure that the parts you put in it are approved, of the highest quality, and will install without headaches.

Take the time to compare.

Our parts have been precision engineered and manufactured with care and attention to detail not found even in the original factory parts. The high level of craftsmanship will be clear to you as soon as you open the package. Our staff of Piper Cherokee interior experts are available to help you.

And we stand behind what we sell: if you have any issues whatsoever, you can return any order within 60 days for a full refund. No restocking fees!

Check out our comprehensive catalog on the web...

www.planeparts.com

Call Today to speak with our Piper Cherokee Interior experts!

Expert assistance
Mon-Sat
8:00am-6:00pm
Pacific Time

(310) 318-1902

1413 Prospect Avenue - Hermosa Beach, CA 90254 - Fax (310) 318-1116 - email: sales@planeparts.com
VANTAGE PLANE PLASTICS
3161 College Blvd. Alva, Oklahoma (AVK)
The General Aviation Leader in Interior Plastics

Increase the Value and Appearance of your Piper with a New Plastic Interior!!!

Check out our full line of accessories

Vantage Plane Plastics is the world’s largest manufacturer of FAA/PMA approved interior plastics for general aviation aircraft.

www.planeplastics.com
info@planeplastics.com

Toll Free: 866-307-5263 / Fax: 580-327-0526