

# Comanche

# *Flyer*

MARCH 2004

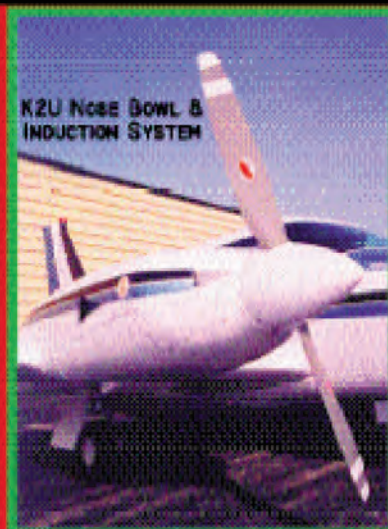
VOLUME 31, NO. 3



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**Cover Photo**

Bruce Huester's Twin Comanche N8764Y. See page 4 for story.

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### Editorial Statement and Submission Guidelines

The Comanche Flyer is chiefly a member driven publication and as such, written contributions are strongly encouraged. The International Comanche Society, Inc. (ICS) publishes contributions in the spirit of open discussion, and the opinions, statements and claims made by the contributors are their own and not those of the Society (ICS). Readers should not rely solely on the information published herein without independently verifying that the applicability of the information contained herein is suitable or advisable for their purposes. Contributions are subject to editing and revision unless specifically requested to be published as submitted. The right is reserved to publish or not, any submission.

Minimum deadline for all submissions is the First of the month preceding the anticipated month of publication.

# Letter From The President

## Greetings to Comanche Enthusiasts:

As you are reading this column, Barb and I are flying to Australia (not at ICS expense) to visit the Australian tribe and their fly-out to Bendigo. Some of you may have attended the Convention in Australia in the 1990s and understand the area. I regretfully was unable to attend, so this will be my first opportunity visit this fascinating place. Throughout the whole process of setting up the trip, it has become apparent that they are a very hospitable group.

My primary intent in relating this is that in August 2006, the Australian Tribe will be hosting the International Convention. Details for this will start appearing in the future. The tribe has planned to offer some flying before and after the convention, which will give people the opportunity to see and enjoy the countryside. I would suggest setting some time and money aside for this great trip. It will be worth your while.

How is our Society doing at this time? I can give a positive report on what has been transpiring and some thoughts on the future. I am pleased to report that since before 1989 (I personally do not have previous records), 2003 is only the second year that we have shown a profit. The other was in 1997 when shoulder harness sales helped to provide a profit of approximately \$6,000 for the year.

Our profit for 2003 was approximately \$18,000. Because the purpose of ICS is a not-for-profit information dissemination service, it is not the goal of ICS to make an excessive profit every year. The question now becomes one of balancing costs with the dues such that costs are covered and a little money is put away to finance

unforeseen expenses such as replacement machinery for the office, etc.

The Board of Directors will be examining where we are going with our costs and look at how far we need to go in putting away reserves for the future. At that point, we can review the need for income from the dues and look to making an adjustment. Our bottom line is that ICS needs to remain financial strong to serve you, and we want members to realize a value for their membership.

The next good news is that our membership numbers have stopped decreasing and some people who had left ICS are now coming back. As members of ICS, we are all salespeople for the organization. If you run into a former member, let them know that ICS is open for business and that we want to again serve their needs where we can as a type club organization.

Our Web site is starting to become a good source of Comanche information as new data is continually being added to the site. We have a technical committee who can provide you with advice. There are people in ICS who run the gambit with the issues that arise in the Comanche. There is no need to reinvent the wheel when something strange develops. We want to talk Comanches. The next time you run into an unfamiliar Comanche at your airport, encourage that owner to join ICS, if not already. If you do not know by now, the ICS Web site, [www.comancheflyer.com](http://www.comancheflyer.com), will now take a credit card and allow members to join or renew on-line. That is progress!

We stumbled December and January in delivering the *Flyer* to you in a timely manner. For that,



we apologize as we realize that many people, including myself, look forward to the *Flyer* every month. It is certainly our charge to get it to you in a regular and timely manner. If I may say so, it also really appears to me that the content and appearance of the *Flyer* have continued to improve. Your support of our effort in articles is really appreciated. Please continue to forward articles to Gaynor at headquarters ([iesadmin@sbeglobal.net](mailto:iesadmin@sbeglobal.net)) and if you can, copy our managing editor, Dianne White at [diannew@kc.rr.com](mailto:diannew@kc.rr.com). Dianne has been assembling the *Flyer* and has been doing a great job. I am sure that as a deadline for a *Flyer* approaches, she would appreciate a backlog of articles.

Finally, a great story from an ICS member and longtime Comanche owner. Chip Groner wrote, "When my father and I picked up our Twin Comanche, N837PG, on March 17, 1966, it was a brand new airplane. We picked it up from Montgomery Aviation in Montgomery Ala. They were the Southeast Piper distributor at the time. I was 13 years old. It has been in the family since new. It has 6,800 hours on the airframe; my father and/or I flew most of the time. My father has written a book about his life experience with our Comanche. ([airbus911@aol.com](mailto:airbus911@aol.com).)"

Please continue providing information on your Comanche. I find it easier to talk about what you have to say, instead of what is on my mind.

Regards,  
John van Bladeren  
ICS #1282

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# The Twin Comanche is Reliable, Quiet, Fast and Efficient. What More Do You Need?

by Bruce Huester - ICS #12543

In 1998, while working part-time for a rapidly growing aircraft finance company, a fast and economical aircraft to fly for commodity inspections with aircraft dealers was the most efficient way to get this job done. I originally planned to purchase a single-engine Comanche and joined the ICS to learn more about the aircraft. After renting several singles to fly to some of these inspections, I determined that the night flying and occasional low visibility approaches would be safer and less stressful in a two-engine aircraft. I narrowed my search to Twin Comanches and Beech Travelairs.

While on a layover in San Juan, Puerto Rico, I was reading the ads

*This photo was taken just north of Miami Beach on our way to Key West. We flew along the coast all the way from Stuart to Key West.*



in the *Flyer* and noticed that the area code on one of the ads matched the area code on my hotel phone. I immediately called the owner and as fate would have it, I was able to walk from my hotel to the Isla Grande Airport to meet him there. It was obvious that the airplane was fully equipped for long-range, IFR flying and had been meticulously maintained. The engines and props had only 120 hours SMOH, and the overhaul had

been done by Charlie Melot of Zephyr Engines.

The total time on the airframe was a low 1,850 hours with new paint and original interior. The owner replaced all the fuel bladders and added tip tanks and nacelle tanks so he could fly from Puerto Rico to the states without stopping for fuel or customs. The instrumentation included dual Bendix/King nav-coms, DME, ADF, and Mode S Transponder, a Northstar M-3 IFR GPS, slaved Stormscope, radio altimeter, digital fuel flow and two autopilots.

He also installed a radar nose-cone, Miller tail, LoPresti Wow Cowl, stainless steel fasteners, the small nose wheel and numerous Knots-2-U speed mods. And, his wife threw in their thermal insulated ice chest for long trips. I was sold!

The pre-buy/acceptance flight was non-stop from Isla Grande to Witham Field in Stuart, Fla., and except for the loss of both alternators en route, the flight went well. The owner was quite embarrassed about the alternators and quickly agreed to repair or



replace both of them. Everything else about 64Y was flawless and the deal was done!

Not having a lot of light twin experience and only a few hours of PA-30 time, the first flights I had with my new Comanche were under the supervision of Larry Larkin, when he still lived in Vero Beach. I took a two-day ground school/flight training course from Larry and learned an immense amount of information about owning, operating and maintaining the Comanche. Thank you Larry!! The money spent early on has saved me thousands since!

Since 1999, the airplane has been maintained and serviced by Dave Johnson and Steve Kindig of Palm Beach Aircraft Services in Lantana, Fla. They are extremely knowledgeable with Comanche's, and have worked on the Bailey Bullet. They are conscientious, honest, and quick. What more could you ask for?

We've added a JPI engine monitor, GAMI injectors, Hartzel Q-Tip Props with stainless spinners, extra soundproofing and the Precise-Flight flashing halogen landing lights – my “poor man's” TCAS (Traffic Collision Avoidance System).

Future plans include a new interior

and an upgrade to “picture” avionics. I am hoping that by the time the engines reach TBO, there may be a diesel or turbine-powered option available. (Don't tell my wife!)

I have flown 64Y for almost 900 hours with very few problems. She has never “stuck” me anywhere. I think the regular flights and proactive, expert maintenance, contribute to the reliability of my 35-year old mistress – as my wife likes to refer to her.

Besides the many business trips, my wife, Wanda and I, have taken many enjoyable and memorable trips to the Bahamas, New Orleans, Spruce Pine and Asheville in N.C.; numerous spots in Florida and back to her huge family in Fallston, Md. (W-42).

We draw a crowd (family) every time we land! I think the two engines and proven reliability of 64Y help put Wanda at ease during our flights. The cabin is so quiet that this is the only piston airplane I have ever flown without needing a headset. →



Our niece Samantha Wisniewski (right) and her friend Kelly pose beside 64Y outside my hangar at Witham Field. The trip to Florida and airplane flight were part of her high school graduation present.

Here is the other “light twin” I fly. This American Airlines Boeing 777, which I fly primarily from Miami to South America and Europe, has a maximum takeoff weight of 648,000 pounds, cruises at 500 kts., and can carry 302,900 pounds of fuel. That's about 45,200 gallons – and at 16 gph that's enough fuel to keep N64Y flying for almost four months.



Another dog day at the airport. The twin Comanche provides a respite from the sun for this four-legged friend.



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*During a Sunday brunch fly-in at Jumbolair near Ocala, Fla., I photographed Bud and Joan Wilcox's Mooney landing over top of my twin Comanche. Jumbolair features a 7,500-foot runway and is private fly-in community. The 50-foot concrete wall keeps the jet blast and noise from spooking the horses on the other side.*

We are involved with the Florida Aero Club, and I do some volunteer flying for several local organizations as well as Angel Flight SE. I've also had the honor of taking more than 50 Young Eagles flying for the EAA. Everyone who flies with me comments on the quiet and comfort of the cabin. I personally enjoy the speed and economy of 64Y.

The ICS has been an invaluable source of information with my Comanche. I attended the seminars organized last year by Skip Dykema at Zephyr Engines and Palm Beach Propeller. Maurice Taylor is always there when you need him, and I am especially grateful for the time I called from Aruba trying to get the gear up on a PA-30 I was ferrying home for Wings of Hope. Thanks

Maurice!! We look forward to each issue of the *Flyer* and the articles and stories from other members' trips, experiences and recommendations.

I have been very fortunate and have flown many different types of military, airline, and light aircraft for more than 30 years. The best flying for me is in 64Y, heading down the beach "wing-waving" to our neighbors, and landing some place different every week to meet friends or family for breakfast, lunch or dinner!

*Editor's note: A Boeing 777 captain, Bruce holds ATP, commercial, instrument, multi-engine ratings. He has accumulated more than 22,000 hours and has been flying since 1971. He previously owned a PA-23 Aztec, a Bellanca Viking and a Cherokee 140. He bases N64Y at KSUA in Stuart, Fla. ✈*

**Call for ICS 2004 Officer Nominations**

In accordance with the Sept. 11, 2003 amended ICS Bylaws, a general call for nominations for the 2004 ICS Offices of President, Vice President, Secretary and Treasurer is hereby issued.

Any member in good standing of ICS may be a candidate if he or she submits to the Chairman of the Nominating Committee (David Buttle) a letter or e-mail agreeing to serve (if elected) and letters (or e-mails) from three other members in good standing (not more than one of whom is from the same Tribe as the potential candidate) nominating the candidate and attesting to the candidate's fitness for the position sought.

The Chairman will acknowledge each communication received from a member wishing to be a candidate or to nominate and attest to another member's fitness to serve.

The closing date for nominations is May 15, 2004.

**The 2004 ICS Nominating Committee Members are as follows:**

Chairman:	David Buttle	EU	DButtle@compuserve.com
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Member:	Mark Pfeifer	MS	mpfeifer@i2roam.com

Respectfully Requested,  
 2004 ICS Nominating Committee  
 Jan. 3, 2004



# Letters to the Editor



## Watch That “Bang and Bolter”

The article entitled “Bang and Bolter” by Lloyd Roberts in the January *Flyer* should not under any circumstance be accepted by our pilots as a change in the operating instructions for the Comanche. The procedures that he describes are likely to impose dangerous stresses on the landing gear, wing and other structures.

Unlike the Naval aircraft that he emulates, there simply is no need to unnecessarily abuse the PA-24. Naval aircraft have a landing gear that is TOTALLY

unlike those in our Comanches and are DESIGNED to safely absorb those high rate of descent landings.

So please, don't go out and emulate Mr. Roberts. Our gear is very strong and, as we all know, will handle an occasional bad landing. But to repeatedly do this as he describes, does not display the best of judgment. Practice “paint jobs” in your Comanche, not crash landings!

*Cheers,*  
Bill Creech ICS #3423

## Remembering ICS History in KC

Having grown up in Kansas City, the January article was interesting to me. I was disappointed that the author didn't include in the history segment the fact that ICS began its life in Kansas City and at the Municipal Airport Holiday Inn.

Andy Speer and I, together with a few others, had our first meeting there where we selected the name for the publication, designed the logo and began the membership drive.

I am looking at a copy of the November 1974 *Flyer*, which when compared to the current issue, indicates the organization has come a long way. As always, it is the spirit that counts.

*Paul Rechnitzer*  
Ole No. 1

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# Treasurer's Report

## International Comanche Society Fourth Quarter 2003

I am very happy to report that ICS is showing a profit of \$18,517.55 for the year ending 12/31/03. This is a major milestone for ICS!

From the records I have, ICS has shown major losses since 1989 except for 1997 when the profit from seat belt sales (\$17,361.75) allowed ICS to show a net income of \$5,839.74. Also keep in mind that ICS net income does not include the profit from the 2003 Convention in Tampa. Convention profit or loss is usually included on the financials during the year of the Convention; however the 2003 Convention profit is not clear yet. That revenue will be included in 2004.

Some very tough decisions by the ICS Board of Directors during the last half of 2002 and the first half of 2003 are now beginning to show positive financial effects. The increase in Member Renewals in 2003 over 2002 is also beneficial. However ICS must continue to monitor its revenues and expenses very closely. I believe the ICS Income Statement is now in a respectable presentation.

I hope to have the ICS Balance Sheet in an accurate presentation by my next report. We are not showing any depreciation for our equipment and the equity section needs to be a little more precise. In the liabilities section, the ICS Board of Directors must decide what our responsibility exactly is for the Tribe Dues Payable and the Comanche Flyer Foundation Payable.

I want to thank the members of the Finance, Budget and Long Range Planning Committee for their suggestions, opinions and help concerning the financials of ICS.

### These members are:

- Hank Spellman – *NC Tribe*
- Manfred Melloh – *Australian Tribe*
- Mark Pfeifer – *MS Tribe*
- Peter Greenyer – *European Tribe*
- Shirley Nelson – *ICS member & wife of Don Nelson  
NW Tribe*
- Harley McGatha – *SE Tribe*
- Danny Carter – *SC Tribe*

For those interested, the December 2003 Income Statement and the December 2003 Balance Sheet is available for download as an Excel file in the "Articles" sections of the ICS Web site.

Also available is a file showing the comparison of the ICS financials of the years 1995 through 2003. This includes a comparison of both Income Statements, Balance Sheets and the actual 2003 figures compared to the 2003 Budget.

*Respectfully submitted,*

*Charlie Tripp  
ICS Treasurer*

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# Ask the Experts

Your source for answers to technical questions regarding owning, maintaining and flying your Comanche

As a continuing feature in the Comanche Flyer, this column will answer member questions regarding the ownership, upkeep and operation of Comanches. Whether you have an obscure question about the aircraft's history, need some maintenance advice or have a problem that has proven mysterious to your A&P or CFI, the Flyer's panel of experts will do their best to provide the answers.

**Q** When I want to change the propeller pitch in my twin to a lower rpm while in the descent, the rpm does not change at all. I can recover that situation by reducing power to almost idle and then increasing power again. What is wrong?

**A** Most probably there is too little pressure in the propeller dome. The reason may be a faulty valve. The gas pressure inside the dome supports the blades to move into the feathered position. To detect low pressure early, the best is to cycle the prop controls simultaneously at 1500 rpm. In the case of low pressure, there is a delay in changing pitch of one of the propellers.

**Q** I assume the fluctuating needles of the rpm indicator refer to a worn out tachometer cable. Is it advisable to replace the assembly or will it help replace the inner cable only?

**A** Replacing the complete tachometer cable in a twin is a major job, it is much easier in the single. If you remove the inner core and you find some chafing marks, you better replace the complete assembly. Be careful to re-install the part with no sharp bends. In case you find no chafing, a replacement of the inner cable will do also for some years.

**Q** The fuel gauges in my Comanche 250 are not very accurate and when I look in the tanks it is very hard to judge how much fuel there is. Lots of times I have a short trip that doesn't require a lot of fuel, but with four people aboard, I don't want to fill the tanks to the top. Yet by just looking in the tank, sometimes I'm not certain if there is enough fuel. Is there a way to measure the fuel?

**A** Years ago I made a dipstick for my 250 just to address the very concerns you expressed. I used a piece of white oak (any dense wood will work), and with a tank that I had run empty, I added 5 gallons at a time and measured the result. (See accompanying photos.)

One side of the stick is for the mains, the other for the auxiliary tanks. I made the marks with a saw and painted the stick flat black.



For 5 and 10 gallons in the aux. tank, the marks are at:

- 2 <sup>9</sup>/<sub>16</sub> inches and 4 <sup>5</sup>/<sub>16</sub> inches

The main tank markings in 5 gallon increments are:

- 2 inches, 3 <sup>1</sup>/<sub>2</sub> inches, 4 <sup>5</sup>/<sub>8</sub> inches, 5 <sup>3</sup>/<sub>4</sub> inches, and 7 <sup>1</sup>/<sub>8</sub> inches.

I now use the same stick for my Twin Comanche. Of course the aircraft needs to be level for the readings to be valid.

**Q** I have a twin Comanche. Occasionally I will find fuel going overboard via the vent line from my right auxiliary tank. It is as though the tank is being overfilled even though it is not. I have been careful to not fill the tank to maximum, and still, sometimes there will be fuel dripping from the overflow after the aircraft has been sitting for some time. Is my airplane haunted? It seems to be manufacturing fuel! What is happening?

**A** Although you didn't say so, I assume your twin has tip tanks. The fuel system is designed so that the lines from the tip tank and the aux. tank both feed into a solenoid valve. The switch near the tank selector switches the solenoid valve so the fuel feeds from the tip or the aux. tank. If the o-ring is bad in the solenoid valve, or if there is a bit of debris lodged against the valve seat, fuel will drain from the tip tank to the aux. tank through the solenoid valve since the tip tank is higher.

Your aircraft is not "manufacturing" fuel. The fuel is simply transferring from the tip tank to the aux. tank. When the aux. tank cannot hold more than its capacity, the excess vents overboard. You need to remove the solenoid valve for inspection. Both solenoids are located in the cabin against the front of the main spar. ✈

*Our thanks to Karl Hipp for contributing answers to this month's column.*

*We welcome reader input on this or any other subject. If you have any Comanche related questions, please send the question to Gaynor at Headquarters: icsadmin@sbcglobal.net or mail to: "Ask the Experts," c/o ICS Headquarters, Hangar 3, Wiley Post Airport, Bethany, OK 73008.*

*The answers contained in this column are for informational purposes only and are provided in the spirit of open communication and cooperation between ICS members. They do not substitute for the advice of an experienced, competent A&P who is familiar with your aircraft. The authors of this column recommend you contact your A&P regarding specific issues with your Comanche.*

## Technically Speaking

### Recent Discussions from the Comanche Owner's Forum – Winter Ops Strategies

As many ICS members can attest, the best source of information is often other Comanche owners who have faced similar maintenance and operational issues. As a service to all ICS members, the following is a series of online postings from the Comanche's Owner's Forum. This discussion between Comanche owners concerns winter operation strategies. It is printed as it appeared in the Forum.

Due to space considerations, we are publishing only selected posts.

As the weather has turned decidedly winter-like in the North Country (including Minnesota where I'm at), I'm looking for tips and tricks for winter ops in our Comanches.

Although I'm interested in any and all information, one specific question: Are there any "winterization" kits available, similar to the plate that covers the oil-cooler for Cherokees? I notice that my oil seldom runs about 155-160 now, instead of the usual 180-190. (per JPI oil temp)

Also, I am noticing that the cylinders run a lot cooler (ranging from 225-320, summer range 280-350). Any concerns here? Should I be considering a partial restriction in the baffle?

Mark

The fellow you want to talk to is Bill Wenkman in Wisconsin. He is a regular on this forum and has a ton of practical experience with your weather. One thing for sure demonstrated up in your neck of the woods, never fly in freezing

drizzle. Personally by using my turbos, my PA-30 get up above the 170 to 180 oil temp range that is good for boiling off moisture here in cold Wyoming. TC

You did not state what type of Comanche you are flying, but from the tail number I assume it is a PA 24.

As far as I know Piper never did address the problem, and as a result there are no winterization kits out there other than those that have been installed and probably do not have an STC for them.

I have two PA 30s and one PA-24. None of which have a winterization kit.

Up until recently I owned a 1982 Cessna 172. Its winterization kit included the following:

1. Two front plates with Zeus screws that were placed and attached to the large openings in the front of the nose cowl. These plates covered about 50 percent of the frontal opening. They were placarded on the plates to "BE USED ONLY WHEN THE TEMPERATURE IS BELOW 30 DEGREES F.)
2. In addition to the frontal plates an aluminum plate about .032 that measured about 3.5 inches by 7 inches was offered. This plate slipped down in front of the oil cooler, pretty much blocking it off completely.

It helps to understand that the oil cooler is by-passed, from engine start-up until the oil temp. reaches 192 degrees F, then the thermostat opens up and allows the oil to flow through the cooler allowing it to cool down to the point that again

may allow the oil to bypass. Blocking off the oil cooler with the metal plate allows the temperature to rise and the oil temp will operate at a much higher level. When using my 172, I simply bent the plate into a oval position thus I could push it down to whatever position I chose to cover the area I felt needed. (worked fine for oil temp.) The oil cooler on the 172 was located very near the hinged oil fill cap and thus was easy to move at any particular time prior to flight.

There is no question that engines operate best in the range that you described, both cylinder and oil. I use only the plates that I have made up for the oil coolers. They also help to some degree the cylinder temps. However, bear in mind that I make no recommendation to you. It is strictly your call. Hope that I have helped you somewhat. Bill

Thanks for the info. And, you are correct, N9255P is a 1968 PA24-260B.

I was familiar with the winterization kits on a Warrior (160 hp) an Archer (180 hp). For the Warrior, a plate was placed directly on the oil cooler, blocking off all airflow. For the Archer, the plate was placed at the back of the engine cowl from which an aeroduct ran to the oil cooler, with the same effect.

Your comment on the bypass is well taken. Now that I think about it, I wonder if it is ever actually running oil through the cooler. Granted, the oil temp that I am seeing is from the front top of the engine, so that could be different →

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than at the thermostatic valve ... and given the "normal" range of about 180, that makes sense.

So, I would probably be better off trying to block some of the airflow through the nose. Of course, then we run into the regs.

I will probably just leave it alone.

Mark,

I don't have a whole lot of time in winter operations with the Comanche. I've had my 180 for a couple of winters and I flew a 250 as a rental prior to that. I've not seen too much problem with the temps in the winter. They definitely run cooler, especially the front CHTs. You probably will need to keep a bit more power on in some instances to keep the heat up. The main thing in winter ops is a good preheat. I probably over do it a bit, I throw a bit of heat in at 0 degrees C and if we're down to -30 C or so probably a good hour. I use the Reiff heaters on the engine, and I usually throw in a car interior heater to raise the

air temp under the cowling. I also use an interior heater in the cabin to warm up the instruments and avionics a bit.

BTW, I'm in Ottawa.

If that's overdoing it, then I'm really over the top. Basically, now that it is pretty consistently below 5 degrees C, I leave the Tanis plugged in along with a small electric space heater on the floor under the left yoke. The small heater has a thermostat and 750 or 1500 watt setting, so I set it to 750 W and around 50 or so. Seems to be doing a good job so far. At the 750 W setting the heat is mild enough that none of the surfaces in front of it get hot, so I don't worry about anything melting.

I've thought about just plugging this stuff in a few hours before flight, but I'm generally flying 3-4 times a week and the advance trip seems like a pain. Of course, having the electric flat-rated in with the hangar rent doesn't have any effect on this decision.

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I just redid the engine baffles as well, the old ones were pretty stiff and ripped here and there. Based on the staples still holding most of them on, I'm suspecting original equip. Anyway, with that done the cylinder temps are somewhat more consistent and the oil temp generally runs in the 165-170 F range. According to Lycoming, anything over 160 is okay. Also have been using the "little more power" theory as well as somewhat more aggressive leaning (50 F ROP rather than 100 F ROP).

Leaving a heater plugged in all the time will cause internal condensation and consequently rust, which will degrade the long-term aspects of your engine. Lycoming does not recommend doing this (as per Lycoming presentations I've been to).

A possible solution would be to purchase a timer such that it turns on your engine pre-heater an hour or two before your flight

Good point. Interestingly, Tanis specifically says it's okay. Looking at Lycoming's Web site, I can't find mention of it. I just sent an e-mail to Lycoming with this query. I'll post their response when I get it. Do you recall from the presentation if there were any time frames mentioned? i.e., five hours is okay, five days is not?

Don't get me wrong here, I'm not disputing your info ... just trying to reconcile the conflict.

In my case, there's a couple of mitigating factors, though:

1. It's a Tanis heater with elements in all cylinders and in the oil screen plug, so the entire engine is kept warm, not just the oil.
2. Typical weekly operation is two 5-hour flights and 2-4 1-hour flights, so everything should stay well oil-coated and the oil fairly dry.

Also, earlier I said 160 F was what Lycoming recommended for minimum oil temp to keep moisture at bay; actually it's 165 F for at least one-hour continuous operation.

Cheers!

Mark,

I was going to make the same comment with regards to leaving the plane plugged in all the time causing condensation problems. However, your regular flying probably covers that as you suggest. The problem is leaving the heaters on and having the moisture floating around in the case, and not flying more than a couple of time a month. Even with the cylinder heaters from either system, the cam is probably not going to be warm enough to not attract condensation (especially with that big winged heat sink that we have bolted to the front of the crank).

Terry

Just received the response to my e-mail inquiry from Lycoming:

"Lycoming has not tested the Tanis system and the effects of operating the system continuous. Please contact Tanis for recommended operational procedures."

Gee whiz, that's helpful!

So, more reading on Tanis, go to [www.tanair.com](http://www.tanair.com), where I found SB#4 where they go into more detail on the issue of moisture/corrosion.

To summarize, they say it's not an issue if the moisture level is kept low by operational factors (i.e., good oil temps, ops once/week, proper oil change intervals).

Of course, Tanis also sells a little fan that attaches to the oil breather tube

Mark and all:

I've got E-Z Heat pad heaters on two Lyses, one on an IO-540, the other on an O-320. I always pre-heat for at least an hour when OAT is 40 F or below, preferably for three hours or overnight, if it's to be a morning flight. Oil is 15/50. I use a heavy-duty outdoor timer purchased at an Ace Hardware store. It's nice to see "instant" oil pressure when the engine fires. The rule is: If it's pre-heated, it's flown. Period.

Every time I pre-heat, I find water droplets on the hangar floor under the oil breather. That means →

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I've melted the ice out of the breather. Or, there's condensation forming in the breather tube. Everyone I've talked to tells me not to leave the pad heaters plugged in continuously.

Rich

What Terry didn't mention was we (park beside each other) have cowl covers (padded), prop covers (padded), wing covers and stab covers. They are all black and the wing/stab covers are real slippery so the snow doesn't stick.

When I fire up the generator I plug in the pad heater the Reiff's on the cylinders and place in two interior car warmers (about 700 watts each). On a normal day in the winter (10 to 15 below C) it gets quite warm under the cowl in 30 minutes.

As a point of interest, in Canada, you can mount (maintenance engineer) one of metal car-type heaters under the cowl legally. Sounds odd but in the really cold parts of the country anyone flying in the winter was doing it and Transport Canada decided to make it okay. Guess if you can't beat them ... If you haven't seen the car warmers, they are a metal box with a 120 volt heating coil and a fan of about 700 watts or so. In cars they put them under the dash to keep the interior warm and frost off the windshield.

My Comanche came from Saskatchewan and has a frost shield on the left pilot's window. They are a clear thin plastic panel that sticks over the window (acts like a storm window) and in really cold areas prevent frost on the inside of the window. I was going to take it off, but on damp/cool or frosty days this panel about 10 by 15 inches remains clear even when all else it fogs up inside - so it stays on. Don't see them in the stores in Ottawa (not cold enough) but they are definitely used on the prairies.

Winter flying is terrific on a clear cold day.

Preheat-wise, I've been continuing my practice of continuous plug-in. It's rare that more than three days goes by without flying and when I do it's cross country with time for the

oil to get nice and warm.

If I didn't fly so frequently, I probably change that.

Also, I'm trying to get a quote on insulation and heat for the T-hangar. It's looking like it would be in reach, but probably next year.

Oil dilution? What's that?

Openings in West Texas ... I'll keep that in mind. For now, I've got a client in Dallas that gets me down a couple days a week, so I get the best of both warm and cold ... of course, during summer it's unbearably hot and hot.

Mark

I seriously considered Texas before deciding on Florida. Renting a new home there for three months to get out of this bitter cold.

I used to fly DC-4s that were used on the DEW LINE by Slick Airways under contract with the government. We used 100-130 octane fuel directly injected into the oil reservoirs just prior to shut down. The amount (times) was pre-determined on what the expected temperature would be on start-up. I do not recall any dilution during flight no matter what the temperature.

The vernatherm on our Lycoming engines is activated by thermostat after the engine is started up and when the oil temperature reaches 192 degrees (approx.) the oil, which had been bypassed up to that vernatherm opening then allowed the oil to circulate through the oil cooler where the temperature becomes controlled at a nominal operating temperature in the range of the 192 degrees. I am of the opinion that if the temperature of the oil does NOT reach 192 degrees (due to extremely cold temps.) then the vernatherm will not open allowing the oil to circulate through the cooler, which if true would make the taping off of the cooler moot.

I will be parking my aircraft at the Zephyr Hills, Fla. airport on Friday and I will make it a point to discuss this subject more thoroughly with Charles Melot of Zephyr Engines.

Dilution is a technique where you run avgas into the oil for a specific



time prior to shut down to thin the oil down for cold starting. Only ever seen it on round engines (Beavers, Otters etc.), which are set up for it. When the engine starts up and gets to operating temp. the gas evaporates off.

During World War II my dad told me they started using dilution on the RCAF trainers with winter operations. This was with mineral oil and the first thing that happened was the oil screen plugged up and many engine failures. The solution was to use dilution 12 months of the year. With the mineral oil, lots of build up in the crankcase and the gas got these particles loose. Apparently the engines worked much better with year-round dilution and were really clean inside when taken down for maintenance.

A few years back I saw a product that I thought was from Tanis that was a dehumidifier/heater that hung on the oil breather line and blew dry, warm air into the engine case. This was to be used along with the cylinder and sump heaters. Has anyone seen this lately? Jay

You're correct about the operation of the vernatherm and I can't explain my friend's claim for higher oil temps when blocking the airflow. I'll be interested in hearing what our engine guru has to say. It might have been purely his imagination.

Dilution of oil probably does affect TBO to a degree. But when you're flying in the "boonies" and the temp goes to -35 F and the only way you're gonna get home tomorrow is that old Gooney (C-47), and you don't have any way to warm her up, you darn well dilute the heck out of her. We used to DOUBLE the dilution times, remove the battery, bring it in by the fire, and hope like hell it would fire up the old pig. She never failed us either. TBO was absolutely the last thing we ever thought of. Getting home was the first!

And no, we NEVER diluted in flight.

I just read the message that leaving an engine heater plugged in

continuously causes rust. I certainly won't challenge that assumption. I believe your statement is based on the fact that the ambient temperature is not going to be constant (a given). Consequently, when the ambient temperature drops it also drops the temperature inside the engine (and it will, even with the heater on constantly), the air in the engine then contracts drawing in potentially moist air. When the ambient temperature rises the reverse happens and air is expelled from the engine. That doesn't cause a problem, of course. I will not go so far as to say leaving the heater on continuously is bad for the engine. It can be done safely with the proper measures taken, and the result will be far less rust than if you

do nothing. But the measures are extensive and, if you want to fly during the winter, not practical.

The absolute worse thing you can do is preheat in cold weather, then turn the heater off and not fly the plane. (Note I said "fly" not just run the engine.) I have seen that happen often with phone controlled heaters. That scenario maximizes the rust potential.

Interesting.


Based on this, it sounds like it's best to leave the engine cold until it's time to pre-heat for a given flight – is that the common understanding here?


Living in Florida I don't know much about cold weather ops. →

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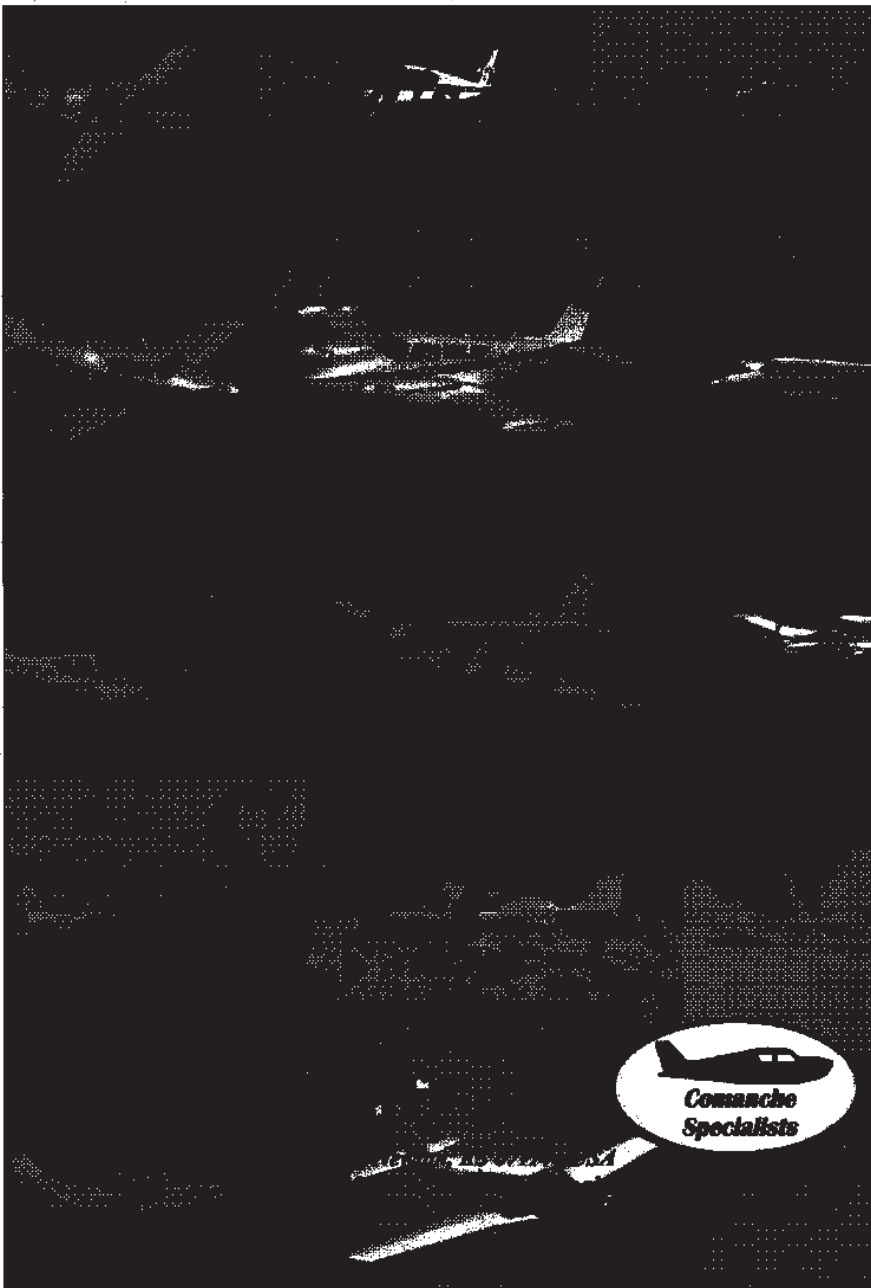
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That's the gist of my message. It is inconvenient to wait until you wish to fly simply because it takes time for the heater to warm the engine sufficiently. There have been some good articles on this subject, most recent I recall was in Aviation Consumer. Unfortunately, there are a lot of misconceptions that abound. Tests have been run on instrumented engines in a controlled cold environment and the results are interesting. Often the preheat method and or the length of time preheating, especially in very cold ambients doesn't adequately do the job, but it does make the operator feel secure!

Don

---

**(More on Dilution:)**

The dilution is done BEFORE shutdown to aid in the next start. Fact is, if the engine is too warm, dilution will boil off after shutdown, which will negate any benefit on the next start. We used to shut down, wait awhile till the engine had cooled a bit, then go out, restart the engine, THEN dilute for the night. This procedure was practically foolproof. And of course you brought the battery in and kept it warm even if you weren't!

---

Ryan, I would consider preheating in Florida! My personal take on the preheating (here in NH) is when it's cold it stays plugged in. I have a pad on the sumps and a band on each cylinder. My thinking is that if I can keep the whole engine above the dew point, I will get less rust (along with being able to start it) we get days with 4 F followed by 30s and rain (and snow etc.). If you feel anything metal that has not been heated it's wet. So I wonder if a little heat in Florida would work as a damp chaser. Like you would use in a gun cabinet down there.

---

*Our thanks to Dale Vandever for compiling this text. You can view these messages in the context of the entire discussion by going to:*

*<http://forums.delphiforums.com/comancheflyer> *

## Technically Speaking

# Engine Sudden Stoppage

by Mahlon Russell



What is a prop strike? Is it a sudden engine stoppage regardless of the cause? Is it an occasion when a prop blade strikes a foreign object and the engine continues to run? Is it hitting a rock or other loose object with a prop blade while operating on a runway or taxiway? Is it when something or someone impacts a prop blade when the engine isn't running?

The only pertinent FAA definition that I have been able to find is in Advisory Circular 43.13-1A. It defines a sudden engine stoppage as: stopping an engine in one revolution or less for any reason, be it from propeller impact or from an engine failure of some sort. Both major engine manufacturers have service

literature that explains the desired course of action after accidental propeller damage and, in the case of Teledyne Continental, defines what their interpretation of a propeller strike is.

TCM's Service Bulletin 96-11, in a nutshell, says that if a propeller must be removed from the aircraft to be repaired following a propeller blade impact of any sort or if the engine physically lost RPM's from the incident, then the engine has experienced a propeller strike and it should be removed from service and completely disassembled and thoroughly inspected for damage from the incident.

Textron Lycoming, in their Service Bulletin 533, takes the approach

that the safest procedure is to take the engine apart for inspection following any incident involving propeller blade damage. However, they have the caveat that the inspecting mechanic may override that position and return the engine to service without disassembly and inspection if he feels that it is the prudent and responsible thing to do.

Textron Lycoming has also published Service Bulletin 475B which requires, in the event that the engine has experienced a propeller strike, inspection and possible rework of the accessory gear train as well as the rear of the engine's crankshaft. Compliance with this service bulletin is mandatory in the eyes of the FAA by AD note 91-14-22, →

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if and only if, the engine has experienced a sudden engine stoppage not a propeller strike. It should be noted that to comply with AD note 91-14-22, the engine does not need to be completely disassembled and that access to the accessory gear train can be accomplished, in most cases, with the engine still installed in the aircraft.

What this all boils down to is that in the case of any accidental damage to a propeller installed on a aircraft operating under Part 91 of the FARs, it is up to the inspecting technician to determine if the engine should continue in service without total disassembly and inspection. A Textron Lycoming engine, that is being operated on a Part 91 aircraft, that had a sudden engine stoppage, not a propeller strike, must comply with A.D. note 91-14-22 and Service Bulletin 475B at a minimum.

Teledyne Continental-powered aircraft operating under Part 135 of the FARs, that have to comply with all manufacturers service bulletins,

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would have to comply with Service Bulletin 96-11 requiring total disassembly and inspection after any incident that required removal of the propeller for repairs or if the engine physically lost RPM's during the incident. An aircraft, operating under the same regulations, that is powered by a Textron Lycoming engine, would have to comply with Service Bulletin 475B after a propeller strike of any kind and would also have to comply with AD note 91-14-22 if the propeller strike was deemed a sudden engine stoppage. On these Textron Lycoming powered aircraft, it is the responsibility of the inspecting technician to determine if the engine should be removed from service for disassembly and inspection.

These are the legal requirements as I see them. There may be other additional requirements mandated by insurance policies or engine manufacturer's and or overhauler's warranties. Either may require additional inspection requirements but neither may negate the inspections required by the FAR's. Never allow an insurance adjuster to dictate the inspection requirements after an incident. Always rely on the inspecting technician, applicable service data and the FAR's to dictate how thorough an inspection is necessary to continue the engine in service.

After the extent of the inspection has been determined, it is important, as with any major repairs that are accomplished on your aircraft, to find out exactly what is included in the estimate to repair your engine following a prop strike. Are the minimum legal requirements being met? Is the engine being completely disassembled and inspected? What other services or inspections are being performed at the same time as the inspection? If the engine is being disassembled does the estimate include testing after reassembly? Are any of the engine's accessories inspected and if so to what extent? Are there any hidden costs?

After finding out the answer to these questions, it's time to discuss with your insurance company what

they will pay for and what they won't, before it's a big surprise after the inspection has been completed. Many insurance companies will not pay for any inspection requirements unless damage from the incident is found during that inspection. Others will pay for all costs for the inspection and for any parts needed due to the incident. Still others will only pay for the labor to do the job and will not pay for any parts.

Finding out what needs to be done and whether that agrees with what

you feel should be done, who's going to do it and who is going to pay for it, should help make the experience of a prop strike as painless as possible.

*Mahlon Russell is a graduate of Parks College of Aeronautical Technology with 29 years of experience in the repair and major overhaul of general aviation piston engines. He has been employed at Mattituck Airbase for 26 years, with 10 years as service manager and 12 years as production manager.* ✈

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# Simplifying the Wiring Maze

## Re-wiring This Comanche Yields a Straightforward, Better Electrical Installation

by David Bice - ICS #11361

I grew up flying J3 Cubs, Taylorcrafts, and Luscombes. I'm sure many of you remember how much fun they were to fly. They were designed and built at a time when construction and cost required simplicity.

The simplicity of their design included their electrical systems. The entire electrical system consisted of a magneto switch with wires running to the P-lead and a ground wire to each magneto. Without a starter, a generator and voltage regulator were not needed to keep a battery charged. The lack of a starter did require hand propping, but starting a small Continental by hand propping was

not the death-defying experience that some might have you believe. However, I wouldn't even consider hand propping a 250 Comanche with a three bladed prop.

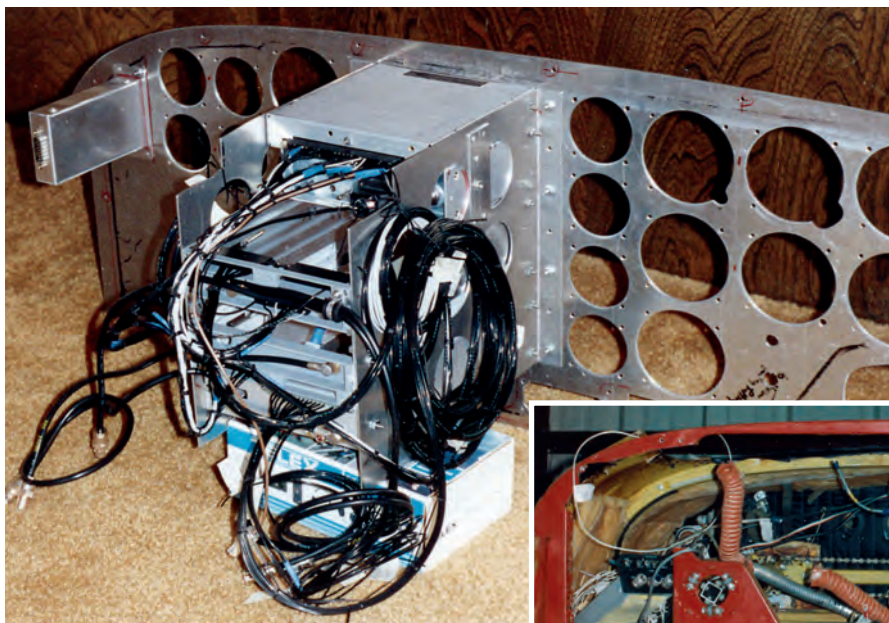
The worst electrical problem my Taylorcraft or Luscombe ever gave me was an open ground or bad magneto switch resulting in a hot magneto. Because hand propping was a necessity, you always checked to make sure "off" on the magneto switch really meant "off." We all should continue to do be sure we do not have a hot magneto when we fly our Comanches. But it is easy to forget this check. Even my limited electrical experience was adequate to diagnose and repair a hot magneto.

These simple airplanes were (and are) great trainers. If you can land a Taylorcraft on a windy day, you can land about any airplane you would ever fly. The adage "if you like to fly, why do you want to get there fast" really applies to the Taylorcraft, and Luscombe I owned. Although I do like to fly, I also wanted to go faster and farther. This is possible only with an airplane that has a bigger engine, a starter, battery, voltage regulator, generator or alternator, and of course radios, electrical flight instruments, etc.,

In other words, the complexity of an electrical system that would support all of the electrical needs of a complex airplane.

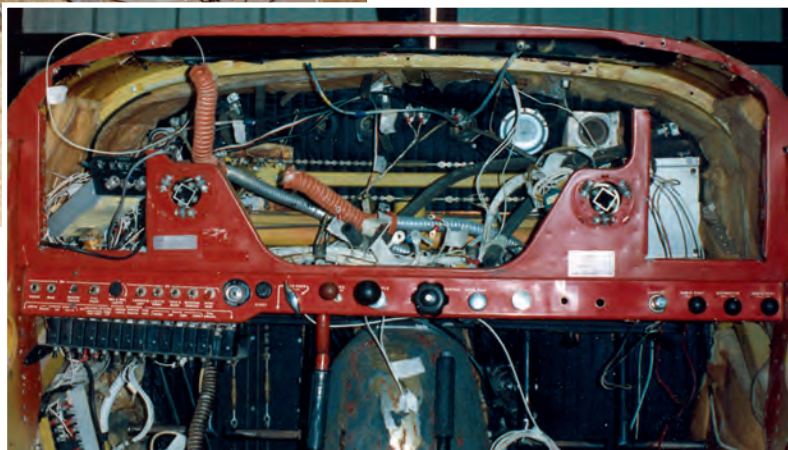
My 1959 Comanche 250 provides great cross-country capability, but I could afford to buy this Comanche only because it was one of the sad airplanes that had sat for years without flying. It required a total renovation.

As the rebuild got underway, I was amazed by a large bundle of wires descending along the inside firewall into the belly. I had no idea what the functions were for such a



*The new instrument panel with the radio racks installed with the new wiring harness. Fortunately, I had plenty of photos and drawings of the instrument panel design to obtain a FAA Field Approval.*

*Wires behind the instrument panel are easier to trace with the old panel removed.*



large bundle of wires. It was even more intimidating to look up behind the instrument panel. A real mess was the only way to describe what I could see. Although some wires installed at the factory were nicely tied in bundles, a lot of the wires were strung like spaghetti among control cables and the push-pull engine controls.

It looked as if they had been shoved into the maze by pushing a wire in and letting it take the path of least resistance. No doubt when a new radio or other piece of electronic equipment was added, supporting wires were strung where a hand could fit through the existing maze of wires and cables. I am sure many of you have seen similar wiring mazes in our fleet of aging Comanches.

I wish I could say that electronics is one of my A&P strengths, but it is not. Initially I was a bit overwhelmed by the mess and mass of wires in my Comanche. I remember looking at the large bundle of bundle of wires descended from the back of the instrument panel into the depths of the fuselage, and wondering if I would ever be able to figure out the function of all of those wires.

I suppose the usual approach to wiring an aircraft is that if it is flying with the wires strung where they are, why rock the boat, or in this case, the airplane. Maybe this approach is acceptable, but the wiring in our aging Comanche fleet gets more complex each time a new electronic gadget is added or removed.

There must be a time when you need to take a deep breath and commit the effort necessary to clean up the wiring mess that may exist in your airplane. You will be rewarded for this effort the next time there is an electrical problem that either you or someone else has to diagnose.

### Dragging Out the Old

The original panel had been cut up so extensively to install radios that trying to restore the airplane →

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with an original 1959 panel would be more difficult than building a new one. In addition, finding a repair facility to rebuild the old gyros with radium dials and the original Piper autopilot they drove was going to be difficult and expensive. In addition, contemporary artificial horizon and directional gyros would be better for instrument flight. Replacing the old instrument panel with a new one also provided the perfect opportunity to get all of the wiring sorted out.

When I was rebuilding my Comanche, STCs for new instrument panels were available (there is now). However, many Comanches had been updated with new instrument panels with center-mounted radio stacks using a 337 and a Field Approval from FAA. My first step was to talk with FAA Inspectors at the local GADO to show them drawings and the approaches used by others who had installed new instrument panels in their Comanches.

I was told by the inspector I spoke to that there would be no problem with approval based on my drawings, so I removed all instruments and whatever else had to come out. Temporary labels were made for wires to panel instruments. Following other successful 337s, metal shears were used to cut away aluminum in the old panel that was not structural.

With the instrument panel removed, it was much easier to see and have access to the wiring (Figure 1). The homemade audio panel and all of the radios in the airplane had to be updated including an ancient nav-com, ADF, DME, the transponder, as well as a CB radio. This was the first time I had seen a CB in an airplane, but there it was.

So, I started by removing the radios and all of the wires associated with each installation. When this was finished, it was easy to identify the original Piper wires that were usually nicely bundled and labeled. The function of each wire was determined using wiring diagrams in the Piper Maintenance Manual. However, there were a lot of wires still remaining that were

not installed by Piper that must have been necessary for electrical installations after the airplane left the factory. I had no idea if these did or did not have any function, and the only way to know for sure was to select a single wire, trace it in both directions to determine what was at each end. Apparently, as new equipment was installed as an upgrade or replacement, the supporting wires were simply cut and left in place. When I identified a nonfunctional wire, I pulled it free from tie wraps or what ever was attaching it to the airframe and discarded it.

I was surprised by the relatively large number of go-no-where wires, and it was a slow tedious process to identify each wire, determine if the wire did or did not have a function, and then either label it with a permanent label or drag it out and discard it. The pile of wires continued to grow to the size of a bushel basket (Figure 2). I labeled the wires that did have a function with labels purchased from the local electronic supply that are a tie-wrap with a tab that can be labeled with a fiber-point pen provided.

The original Piper electrical installation included a junction box on the left interior fuselage wall. This provided electrical power to old heavy tube radios that were installed on the radio rack behind the baggage compartment. Many of the nonfunctional wires I pulled out ended at this junction box. As I continued to remove nonfunctional wires, the junction box that had been supplied with a relatively large bundle of wires was empty. I could hardly believe that they were all gone, and the thought passed through my mind that maybe I had pulled out some wire that was vital for the electronic functions of my Comanche. However, I could see no reason to leave the empty junction box in the airplane, so it is now resting on a shelf in the hangar.

#### Starting Over with the New

I built a new instrument panel following the drawings I presented to FAA, and made sure that the



structure I built to hold the radio racks would fit into the void left after removing the original instrument panel. I hired an FAA-certified electronics technician to make up a wiring harness, and I then mounted the radio racks onto the back of the instrument panel (Figure 3).

It was essential that the radio mount and the wires did not interfere with the control cables behind the instrument panel. I made up the wiring necessary for the four-place intercom. In addition to new radios, I wanted to update engine instruments with a digital volts/amps indicator with both high volts and discharge warning lights and as well as a digital EGT/cylinder head temperature gauge. I also added a fuel flow computer. The radios and each of these instruments came with wiring and instructions for installation providing the size of circuit breaker required. The panel was finished with appropriate circuit breakers for all of the new electronic instruments. A positive lead was installed to provide power to these circuit breakers, and a terminal block was added to provide power to each new electrical component.

Although I was tempted to include new circuit breakers in the instrument panel for all of the other electrical functions (e.g., landing gear motor, generator, pitot heat, etc.), I decided to retain the original Piper circuit breakers under the edge of the instrument panel.

I organized the wires required in the installation of the new radios and digital engine instruments in bundles with the function of each wire labeled. →

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The new instrument panel installed. What a surprise that everything worked after removing a large pile of wires!

Any logical organization for the new wire bundles could have been followed, and I tried to keep the wires in functional groups. In addition, it is important to keep coax cables to antennas as separate as possible from electrical wire bundles. The same concept should be followed for audio wires for the

intercom to prevent unwanted noises in your headsets.

The largest portion of this bundle is the battery cable to the battery behind the baggage compartment. The original battery cables in Comanches were aluminum that had not been as effective as they should have been in supplying

adequate current to the starter. These cables were replaced with a new copper cable.

Now that the rebuild is complete, I still have a large bundle of wires descending from the back of the instrument panel and disappearing beneath the floor. However, only one original wire is in this bundle – it is the wire from the master switch to the battery solenoid. All of the wires in this bundle, as well as the wires behind the instrument panel, are now labeled. This should make diagnosing electrical problems and the installation of new electronic equipment much easier for years to come.

### Glitches

I admit I was a little surprised when the master switch was back on and all of the lights lit, the starter started, and the generator generated new electricity with no problems. The only electrical troubleshooting that was required was that I did not realize that the case for each fuel indicator had to be

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grounded to the instrument panel. The mounting screws for these gauges should have provided an acceptable ground, but paint under the heads of the screws and in the screw holes prevented an adequate the ground.

The only unanticipated problem in the panel installation came when I discovered that the FAA Inspector I talked to about the panel installation had retired. However, with good drawings and photos showing the installation, and a 337 for the design, they gave me a Field Approval for the installation. Times at the FAA change, and Field Approvals are even more difficult to obtain now than when I finished the panel installation.

The FAA is working to remove the roadblocks to Field Approvals that they built, and hopefully it will be resolved soon. Fortunately, replacement panels are advertised in the *Comanche Flyer* with an STC that appears to satisfy most FAA General Aviation District Offices. However, be sure to talk to your local FAA inspectors to get their blessing before installing a replacement panel. FAA seems to want all paperwork completed before a screw is turned (only a bit of an overstatement).

### The How-to Instructions

There are general practices that need to be followed in the routing and installation of wires. These procedures are covered in books from several sources, but the Airframe & Powerplant Mechanics Airframe Handbook (EA-AC 65-15) is adequate. Installation to prevent chafing and to prevent any contact with fluids is covered in this publication. In addition, the correct use of cable clamps (Adel clamps) and when wires should be placed in bundles by tying are also described.

The appropriate methods for attaching terminals

and how to do splices are also covered. Methods to install wiring in ways to prevent chafing are also presented. As long as we are talking about books, you will find answers to a lot of questions about the workings of your aircraft in the Airframe & Powerplant Mechanics General Handbook (EA-AC 65-9) and the Powerplant Handbook (EA-AC 65-12).

Another very useful resource for work you might do on your airplane with the guidance of an A&P is Acceptable Methods, Techniques, and Practices – Aircraft Inspection and Repair (AC43.13-1A/3). All of these books are available from several sources including Jeppesen (<http://www.avmart.com>) and ASA (<http://www.airsuppliers.com>). If you like to do some of the work on your Comanche with the assistance of an A&P mechanic, you should have these. After all, I am sure you do want to make sure that anything you do, as well as what an A&P mechanic does on your airplane, is done right.

### And the Future

Although I did earn my A&P by rebuilding and building aircraft, I am pretty timid in tackling electronic problems. So, if I can sort out wires in my once tired Comanche,

so can anyone else with average intelligence and maybe a bit more than average patience. My aim in writing this article was to encourage others to sort out the wiring in their Comanche (under the direction of an agreeable A&P mechanic) when you have the opportunity to do it. It will not only increase your understanding of the electrical functions in your airplane, but organized wiring with clear labels could save you or someone else hours of time when it is necessary to either diagnose an electrical problem, or install some new equipment.

You may never convince electronic technicians to pull old wires as new equipment is added. This would have been difficult without the instrument panel, seats, floor, and baggage compartment all out of the airplane. However, you should encourage technicians to do careful installations with appropriate labels on any new wiring.

*Editor's Note: David Bice is one example of the many multi-talented members of ICS. In addition to rebuilding his PA-250, David has rebuilt four other aircraft, including the design and build of a Formula One racing aircraft that later went on to win the National Championship Air Races at Reno, Nev. In addition to his A&P license, David holds a doctoral degree from Louisiana State University School of Medicine, did postdoctoral study at Harvard Medical School and pursued research in pulmonary immunity and asthma in Albuquerque, where he now resides. He is also owner of New Harmony Music, where he builds hand-carved cellos, classical guitars and innovative cello accessories. 🎻*

*Most, but not all, of the wires removed. All of these wires must have been important in the past history of the airplane, but now had no function.*



## Technically Speaking

### A Beautiful Comanche 400 Comes Back to Life

by Mike Rohrer - ICS #13393

Is anyone tired of the cold yet? Saturday, Jan. 3, it was 80 degrees. Last night (Monday) it was seven degrees. That just isn't right. Before we know it, spring will be here.

We recently did a pre-purchase inspection on a beautiful PA24-400 Comanche. Bill Sandella from the Boston area is the new proud owner of this 1,200-hour machine. Yes, 1,200 total time.

When I first stepped into this airplane, I thought I went back in time. The interior is original, along with the avionics. It has a DME that I have no idea how to work. And I couldn't find the transponder. Guess what? They didn't have transponders back in the day. I have never seen an airplane in such good shape and still in its original condition.

We removed one of the cylinders and checked for corrosion on the cam and lifters. All were in good shape for an airplane that has flown about 48 hours since 1993. The engine was preserved or pickled. We removed all the oil and fuel. We use a pressure pot that I made to pressurize the oil system.

It puts up to 12 quarts of your favorite oil into the engine under pressure. We coat the inside of the cylinders with an oil concoction that I make up.

Next, I put a metal rod down the oil dipstick tube. This tube has several holes drilled into it. The rod has a fitting on it so I can hook up the pressure pot to it. I can spray oil into the case through

the rod; this will cause oil to spray and coat the inside of the upper engine where the cam is located. I got this idea from Matt at Comanche Gears.

Once I finish all of this, I'll spin the engine which helps coat the cylinders, but I make sure all of the plugs are removed. We put fresh gas in the tanks, sumped the system again and cranked it. This engine was last started more than five years ago. With about two turns of the propeller, it came back to life. What a moment!

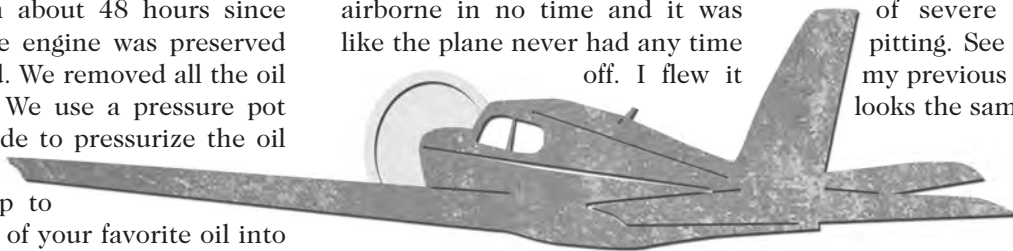
I did a ground run and the brakes would not hold it in place. Once I was happy all the systems worked, except the radios, (they took a while to warm up), I taxied to the end of the runway. I sat there for a few minutes, and stared down the runway looking for an escape route if there were any problems. I put the power to it slowly and down the runway I went. What acceleration! I was airborne in no time and it was like the plane never had any time off. I flew it

brakes needed the old fluid replaced. Never good to have the Mil 5606 brake fluid looking like molasses. We are changing the brakes and wheels because they are the old Goodrich style along with the mags (you other 400 drivers know why). Anyone want a good set of "old style" Bendix mags? Very low time. The Oleo struts are getting overhauled for preventive measures. The fuel system was sent away to get updated (fuel control, pump, etc). We had the propeller overhauled for preventive measures also and for an AD. Everything checked out great.

One thing I want to pass on to the other 400 drivers is the condition of the motor mount behind the mufflers. I covered this item on the turbo twins several months ago and the 400's have the same problem. This airplane only has 1,200 total hours and we have to remove the engine mount because of severe corrosion and pitting. See the pictures on my previous article, this one looks the same.

I didn't think it was going to be bad, but when I finished

glass beading it, oh boy. Then I did the punch test, no good. So if this can happen in only 1,200 hours, it's a good area to look at. When we get the mount back we will cover the tubes behind the mufflers with a heat resistant material. This works well on the turbo twins and should on the 400.



back to Altus (AXS), which is about 190 miles. All in about 48 minutes. The plane never missed a lick.

On this same 400, we are doing an annual and installing speed brakes. Bill will need them flying on the East Coast. Some of the things that we did find during the inspection phase are that the

And while we are talking about mufflers, when I inspected these, as always, I spray with a penetrating oil and found about a one-inch crack on the tube radius. I don't know if this is a common problem with other 400's but this had a crack with very low time.

I will post this project on my Web site for all to see. I love flying this machine and can hardly wait to finish it so I can fly it again. I know Bill is going to enjoy it and you other 400 drivers please welcome him to the "club."

### Trouble-free Battery

Since it's cold out this is when batteries usually give us problems; here are a few tips to keep you out of trouble. If the battery is dead, and when I say dead, I mean when you turn on the master switch you

can hardly hear the turn coordinator spool up, please don't try starting the engines by jumping the battery. You are just asking for trouble.

Think about it for a moment. When you jump-start the engines, the battery is still low, and now you expect the alternator or generator to not only run all your new and modern avionics, but to put a charge back into the battery. Ain't gonna happen. It can't possible keep up. So here you are, flying to point "B" and it's time to put the gear down. I've seen this before and sometimes it doesn't happen, I mean the gear coming down. Sometimes the gear will not even come up. Remember, the Comanche's gear motor needs all the current it can get and if the battery is low or dead, well you get the idea.

That's another story, maybe I'll write about next month. Anyway, I have seen where this procedure of jumping a dead battery has caused the radios to go out. I mean you have to send them out for repairs, broke. The radios are very sensitive to voltage spikes and this will occur when the charging system is trying to catch up. So, when aircraft owners come into the shop wanting me to jump-start their aircraft, I will not if the battery is that low. I'll gladly charge it for about an hour. Need to be safe.

Remember to drain those tanks. It's cold out there and water freezes. Engines will not run with water or ice in the fuel. Let's all be safe and live to read more of my babbling next month. Thanks and God bless. ✈

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# Kansas City



## International Comanche Society Convention



### From the 2004 Convention Hospitality Chairperson

by Linda Bullock

In September the Mid States Tribe will welcome you to the 2004 ICS Kansas City Convention. Your hosts are Linda Bullock and Florence Harelerode, chair-ladies for the Mid States ICS hospitality room during the convention. While here in Kansas City we want to invite you to take the opportunity to mingle with friends, old and new, who express a common interest in flight and our International Comanche Society.

We are taking extra special care to provide you with the flavor of outstanding homemade cookies and coffee, baked from the homes of our members, each prepared with the loving care from the ICS members of the Midwest. While in the relaxed atmosphere of the hospitality room, browse through and admire the door prizes and wonder which one might have your name on it.

*Continued on Page 31*

*One of the many gifts donated to the Hospitality Room.*



## Schedule of Events

**Kansas City Airport Marriott - Sept. 14-19, 2004**

### Tuesday, Sept. 14 Opening Day

**Registration**  
10:00 a.m. - 5:00 p.m.  
**Hospitality**  
10:00 a.m. - 5:00 p.m.  
**Exhibitors**  
12:00 p.m. - 5:00 p.m.  
**Cash Bar**  
7:00 p.m. - 9:00 p.m.  
**Welcome Reception**  
7:00 p.m. - 9:00 p.m.  
**Exhibitors**  
7:00 p.m. - 9:00 p.m.

**Exhibitors**  
8:00 a.m. - 12:00 p.m.  
**Super Seminars**  
8:00 a.m. - 12:00 p.m.  
**Cabella's Tour - Speedway**  
12:30 p.m. - 5:00 p.m.  
**Casino Night**  
6:30 p.m. - ?

### Friday, Sept. 17 Airport Day

**Registration**  
8:00 a.m. - 12:00 p.m.  
**Hospitality**  
8:00 a.m. - 12:00 p.m.  
**General Members Meeting**  
8:00 a.m. - 10:00 a.m.  
**Airport Day - Airport History Museum Flagship**  
9:00 a.m. - 9:00 p.m.  
**Truman Library Etc. Tour**  
1:00 p.m. - 5:00 p.m.  
**BBQ/Music/Entertainment at Airport**  
6:30 p.m. - ?

### Saturday, Sept. 18

**CFF Meeting**  
7:00 a.m. - 8:00 a.m.  
**New Board Meeting**  
8:00 a.m. - ?  
**Plaza Art Tour**  
10:00 a.m. - 4:00 p.m.  
**Cocktail Reception**  
6:30 p.m. - 7:00 p.m.  
**Banquet**  
7:00 p.m. - ?

### Thursday, Sept. 16 Super Seminars

**Registration**  
8:00 a.m. - 5:00 p.m.  
**Hospitality**  
8:00 a.m. - 5:00 p.m.  
**Old Board Meeting**  
8:00 a.m. - 10:00 a.m.

### Sunday, Sept. 19 Departure

**Weather Briefing**  
7:00 a.m. - 11:00 a.m.  
**Depart**

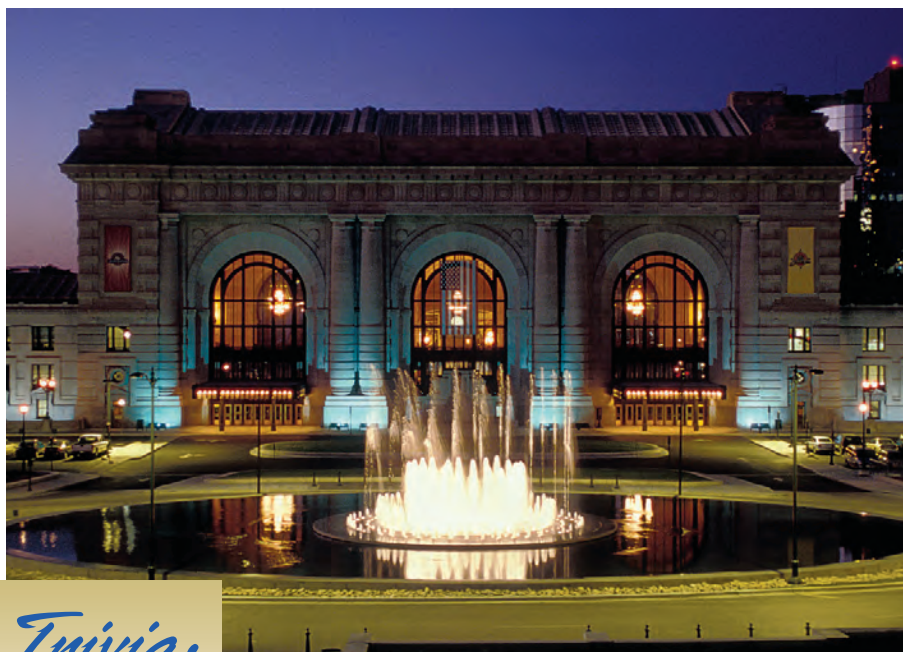


- September 14-19, 2004 - [www.ics-kansascity2004.com](http://www.ics-kansascity2004.com)

# Union Station – Kansas City’s Most Distinguished Landmark

Union Station is a Kansas City historical landmark built in 1914. The building features a 95-foot ceiling in the Grand Hall, three 3,500-pound chandeliers and a six-foot wide clock hanging in the Station’s central arch. Union Station encompasses 850,000 square feet and originally featured 900 rooms.

Beautifully restored in 1999, the Station today is a popular destination for the surrounding community as well as tourists. The complex is filled with restaurants, shops, theaters, traveling exhibits, special events and a



## *Kansas City Trivia:*

**What famous Union Station icon has served as a meeting place for Kansas Citians for more than 80 years?**

(Hint: you can see it one of the pictures in this section.)

*(Look for the answer in the April issue of the Flyer!)*

science center called Science City. Union Station’s Theater District has a 440-seat giant screen 2D and 3D movie theater, a domed planetarium theater and a live stage theater.

As a working train station, the complex included ticketing facilities, a waiting room that could hold 10,000 people, restaurants, shops, railroad offices,

the nation’s largest Railway Express Building (used for shipping freight and mail) and a power house that provided steam and power to operate the Station.

## **Restoration of Union Station**

Prior to 1997, Union Station was a shell of its prior glory. Crumbling and near ruin, the station was in bad shape, yet held so much promise with its unique architecture and rich history. In 1997, restoration began.

The goal in the renovation of Union Station was to preserve its unique features, but make it a functional facility and community-wide destination. Phase one construction started with the cleaning of Union Station inside and out. By the end, 10 million pounds of debris was removed.

Working top to bottom, inside and out, no detail was overlooked, including matching of colors and



style. The roof was completely replaced with tiles of the exact shape and color of the originals. The only difference was the use of a special concrete weighing less than before. Still, each roof tile weighs approximately 200 pounds.

St. Louis Antique Lighting Co., which has restored the lights and fixtures in seven state capitals, used 12 full-time employees to strip and restore all of Union Station's sconces and giant chandeliers. Each chandelier weighs 3,500 pounds, measures 12 feet in diameter, and requires more than half a mile in wiring and 11,400 watts of electricity.

Hayles & Howe, ornamental plasterers specializing in restoration of original moldings and ceilings, was brought in to rebuild the heavily damaged ceiling of Union Station. Using 22 workers, more than half the original ceiling had to be removed because of the massive amount of water damage. Then, sparing no details, crews reconstructed the damaged areas. But Union Station is not the first train station Hales & Howe has worked on. The



*Union Station looking into the North Waiting Room and the famous lighted clock.*

company helped restore New York's Grand Central Station and also worked on the refurbishment of England's Windsor Castle.

Oehrlein & Associates, who worked on historical landmarks like the Washington Monument and the Lincoln Theater, was brought in to take on the difficult

task of determining the exact colors of the original Union Station. They examined everything from metals, to plaster, to the walls, floors, ceilings, and roof tiles. The procedure included scraping away layers of filth one by one along with every coat of paint in order to get down to an exact match in color.

## **The Kansas City Massacre – A Part of Union Station's History**

In addition to its beauty, Union Station also has a notorious history. Prior to June 17, 1933, Union Station was an active, thriving landmark and centerpiece. However, at about 7:20 a.m., the station became an "arena of horror," according to Kansas City's newspaper, *The Star*.

On that morning, a mass murder committed in front of Union Railway Station, Kansas City, Mo.,

## *Kansas City Trivia:*

Answer to Trivia Questions from February Flyer

*What city has more fountains than Kansas City?*

Only Rome has more fountains than Kansas City, and several of the more spectacular ones in KC are found on the Country Club Plaza. The city has sort of an unwritten policy that a fountain of some fashion is incorporated into the design of most new commercial building projects in Kansas City.

*How many miles of lights adorn the Country Club Plaza during the holidays?*

There are 288,000 jewel-colored bulbs spanning more than 80 miles. The lights outline every tower, dome, balcony, courtyard and building found on the Country Club Plaza.



## Kansas City Trivia:

How much did it cost to build  
Kansas City's Union Station by  
the time it opened in 1914?

(Look for the answer in the  
April issue of the Flyer!)

shocked the American public into a new consciousness of the serious crime problems in the nation. The killings, which took the lives of four peace officers and their prisoner, are now known as The Kansas City Massacre.

The Kansas City Massacre involved the attempt by Charles Arthur "Pretty Boy" Floyd, Vernon Miller and Adam Richetti to free their friend, Frank Nash, a federal prisoner. At the time, Nash was in the custody of several law enforcement officers who were returning him to the U.S. Penitentiary at Leavenworth, Kan., from which he had escaped on Oct. 19, 1930.

Today, the Kansas City Massacre remains part of our country's history – an enduring memorial to the tragedy of June 17, 1933.

Some physical evidence still exists. You can find bullet marks near a sign about the massacre at the main front doors on the eastern end. If you can't find them, take a guided tour or ask someone at the Information Booth.

## Union Station Story Exhibit

The Union Station Story exhibit is a permanent free display in Union Station. The exhibit tells the story of the people who used the Station as train passengers, Kansas Citians who came to eat, shop and use other services, and the many employees who ran the railroad and Harvey House operations.

It also tells the building's history, illustrating the building then and now, its architecture, engineering, construction and preservation. And it tells the story of the railroad, including Kansas City's origins as a railroad town.

The exhibit showcases numerous historical photographs, Fred Harvey china, a Harvey Girl uniform and a Pullman uniform. There are also several large railroading tools and a five-minute video of streamliner trains at Union Station. The exhibit is located on the mezzanine level above the Station Master store. It is open from 6 a.m. to midnight daily. ☛

## From the 2004 Convention Hospitality Chairperson Continued...

Enjoy daydreaming about that special one or something that has caught your eye and could be yours. Before you get too carried away with the thoughts of varied airplane paraphernalia and airplane motifs, which are available,



Enjoy homemade cookies in the Hospitality Room.

we will have gifts that all family members can appreciate. Donated prizes to be offered include but are not limited to: tote bags, shawls, fine English plate(s), hand-painted Kansas City Plaza tile, cross stitch, Indian jewelry, airplane clock, and gifts donated by various airplane vendors, as well as many theme baskets made up of (wine, coffee, tea, soaps, candles, barbecue, stationary, hair products, Jazz and various ornaments) – truly too many to mention!

In addition the hospitality room has been given the unique opportunity to present, for viewing and reminiscing, the varied memorabilia from the ICS conventions gathered over the past 30 years from one of our Comanche Society's founding members, Jim Sandilos.

We are working hard to make the hospitality room an event to remember. We would like to express our appreciation to those members, friends, and vendors who are graciously donating their time, money and creativity to this event.

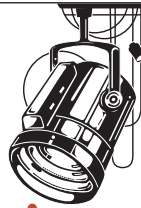
Should you consider helping us with a cash donation or gift, this gift can be varied and may represent aircraft products or any theme basket that may be used for prize drawings. Please contact Florence Harclerode (913) 755-2345 or Linda Bullock (816) 455-0749. ☛



Donna Holloway, the original editor and office manager for ICS, has donated the Comanche tray pictured here.

## New Product Spotlight

# New High-Torque Inline Starter Now Available for Lycoming Engines



Sky-Tec, manufacturer of the original Flyweight general aviation starter, announces availability of its newest lightweight aircraft starter. The new High-Torque Inline starter is capable of replacing nearly all original equipment as well as certified replacement starters on nearly all Lycoming engine-powered aircraft (except "GO-" series engines. e.g. GO-480, etc.).

The key to the starter's broad adaptability is its compact, inline solenoid/motor arrangement that fits well within the profile of Lycoming's original equipment starters.

"The myriad Lycoming-equipped aircraft in service have various challenges when it comes to fitting replacement starters. The location of

air boxes, prop governor cables and other accessories previously made it difficult or even impossible to develop a light weight starter solution to fit tight cowling arrangements such as those found on many Piper singles," explained Rich Chiappe, manager of Sky-Tec Partners, LTD. "Now with the new in-line design, Sky-Tec will not only fit these aircraft, but will fit just about any Lycoming-powered aircraft."

Compared to other OEM and replacement starters, the new starter, dubbed the "High-Torque Inline," offers superior performance including higher torque, lower electrical current requirements (FAA tests document less than 185 Amps on 25 consecutive starting attempts

on a 12 volt, high-compression IO-540 engine), patent-pending internal kickback protection, ultra low weight (9.4 lbs.), Bendix-free reliability, faster starts and a rugged design utilizing steel ball bearings and metal gears designed to withstand years of use and exposure to harsh operating elements.

"Kickback protection is obtained via an internal shear pin technology," Chiappe explained. "Kickbacks are extremely rare but can be detrimental to engine parts and accessories. In the past, heavyweight starters would stand-up to kickbacks at the expense of damaging or destroying teeth on the aircraft's ring gear. Sky-Tec's first generation of starters was purposely designed to physically break in the event of a kickback to protect engine components. But the High Torque Inline starter's internal shear pin protects the starter (and ring gear) from damage and allows the starter to be easily repaired in the field."

Each High-Torque Inline starter now ships from the factory with an

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extra pair of shear pins affixed to the starter. "We've made every attempt to limit an aircraft owner's grief to simply resetting the pin and fixing the culprit ignition problem," said Chiappe.

This newest starter design is just the latest in a long line of highly reliable Sky-Tec starters that utilize a solenoid-actuated engagement drive that does away with Bendix-type centrifugal drives found in original equipment starters. Sky-Tec research has found that most traditional starters fail due to malfunction of the Bendix-type centrifugal drive. By doing away with the Bendix, Sky-Tec starters are much more reliable than both Bendix-laden lightweight starters as well as heavy, original-equipment units.

The starter comes in three models that feature a jumper-actuated voltage switching technology that allows the installing mechanic to set the starter up for either 12- or 24-volt applications during initial installation. One starter model fits 122-tooth ring gear applications, another fits 149-tooth ring gear applications and the third model is available for left-turning engines commonly found on the right side of counter-rotating Lycoming-powered twins.

"Repair shops, FBOs and A&Ps are going to like the added benefit of having only two or three starters on-hand to support all of their Lycoming-equipped customers" Chiappe added. "We think they are going to appreciate the extra shelf space in their stock rooms."

The new starters have been certified under FAA-PMA, are warranted for two years against component and manufacturing defects and are currently available from all Sky-Tec dealers for under \$550. For more information visit [www.skytecair.com](http://www.skytecair.com).

#### **About Sky-Tec**

Sky-Tec Partners, Ltd. based on the field at Granbury Municipal Airport (F55) in Granbury, Texas has been manufacturing FAA-certified lightweight starters for piston-powered general aviation aircraft for more than ten years and boasts more than 25,000 starters currently in service.



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# Around the World in a Comanche 260B



by Fred Lasby - ICS #8914

*Editor's Note: Fred completed this around-the-world trip in the summer of 1994 at the age of 82. While an incredible feat for any pilot, Fred completed the trip with few problems and excellent reliability from his Comanche 260B. In recognition of the trip's 10th anniversary, here is his account of the adventure.*

I began my preparations in the first part of 1993. I considered most important for my trip to have my aircraft, a 260B N9250P, fit for the journey before departing. I compiled a list of what I wanted done and it took a year to get everything finished and ready to go.

For the engine, my list was: a new alternator, new exhaust stacks with one muffler, vacuum pump, overhauled both mags including new coils, pressure tested the oil cooler, and installed Shadin Gidiflo fuel system. This required six recalibrations to get it to 1 percent.

For the aircraft, I had the tank selector reworked with new seals. One item I considered essential was the top door lock. I replaced the gear motor. I replaced the tires with eight-ply rating on the main gear to better handle the 25 percent overload.

I installed two 75-gallon tanks in the cabin with a see-through filter so I could drain any contamination if necessary. This gave me 240 gallons for 18 hours of operation.

My MTOW was raised by ferry permit to 3,875 pounds. For speed I had the gear mod, flap, aileron and rudder gap seals and new fiberglass cowling installed. This gave me 170 kts., TAS at 8,000 feet using 13.1 gph. I had an S-Tec pitch system installed, which gave me three-axis autopilot. I installed a new altimeter with two scales – inches and millibars.

departure from the West Coast to get me to Australia for the Comanche Congress. I planned two or three nights at each stop to allow for rest and getting used to the time changes. I made up my itinerary and passed it to Jeppesen.

Communications en route were done by faxes and also with my home. My route was Austin, Texas – Santa Barbara – Honolulu – Majuro Marshall Islands – Honiara Solomon Islands – Brisbane – Coolangatta – Cairns – Darwin – Singapore Seletar – Madras – Bahrain – Luxor Egypt–Rhodos – Rome Ciampino – Palma – Santa Maria – St. Johns Newfoundland – Bangor – Richmond, Va., – Fort Myers, Fla.

The distance flown was 23,218 nm through 13 countries. The longest leg was 13 hours, 52 minutes, and five were over 11 hours. Flying time was 160 hours, 21 minutes. I never added more than two quarts of oil on any leg.

For navigation, I had letdowns for every planned airport and low-level charts for en route airways. I had a set of GNC topographicals to cover my route. I made up a Howgizit with 16 items to log every 30 to 40 minutes. Fuel-tank switching was logged by time and fuel used. Five minutes after departure, change over to cabin tanks was started. As soon as the aircraft was trimmed after takeoff, the autopilot was engaged.

My departure from Ft. Myers was Thursday, June 30, 1994, with some pictures and farewells from family and friends. Destination Austin, Texas was 6 hours direct across the Gulf of Mexico. En route, I checked out my HF radio and found my voltage going over when I transmitted. I

For communications and navigation, I installed a Trimble 2000A GPS. I stalled a power outlet to operate a Trimble PRO handheld as a back-up. In case of lost electrical power, I carried batteries to power the PRO if this became necessary. I installed SSB HF radio for over water use. I installed a new King 197Y which gave me two flip-flop radios. On board I had an HSI, WX900 Stormscope, KNS80, ADF and Mode C.

• • • • •

## The trip described here was accomplished with careful planning and safe flight procedures – at the ripe age of 82.

• • • • •

For emergency use, I carried a four-to-six man raft, immersion suit, an EPIR, flares and a water marker.

For spares, I had a tire and tube, an electric fuel pump, spare plugs, spare vacuum pump, spare battery and two cases of oil.

I arranged that Jeppesen Data Plan would set up weather for each leg, hotel, handling agent, landing and over flight permits. Without their help, the trip would not have gone as it did. I was never delayed or held up for paperwork, including flying over Saudi.

I planned my route westbound to give the most daylight. I planned a week in Honolulu and timed my

was delayed to Saturday for a new voltage control.

Then departed for Santa Barbara. Takeoff was hot and windy with one cabin tank full and the aircraft did not want to stay in the air after liftoff. After considerable distance, I started to climb and retracted the gear. En route time was 8 hours, 10 minutes.

Monday, July 4, I departed for Honolulu with full tanks, weather was nice, light wind, used one-quarter flap and rotated at 85 kts. Had a smooth departure, but had to make shallow turns as stall light was off and on intermittently. En route was in the clear all the time at 8T time 13 hours, 25 minutes. Stayed one week and while there received a fax from Jeppesen that Tarawa (my next stop) was out of fuel. So had to plan for Majuro. Also, I was advised that arrival had to be before 1630L or pay overtime charges. In Honolulu, I had plugs and nozzles checked.

My planned departure time at HNL had been 7 a.m. But with the time restrictions at Majuro, I had to depart at 5 a.m., two hours before daylight. That required a hotel wake-up at 2:15 a.m. to get started. I managed to get away shortly after 0500. Lift-off was smooth at 80 kts., and again very shallow turns. En route weather was good – time 11 hours, 54 minutes. Arrived at 1500L. Took two hours to get 90 gallons pumped on board. Fuel was pumped from barrels and very glad I had a filter on the cabin tanks.

Next destination was Honiara, Solomon Islands, a shorter trip. I departed with 13 hours of fuel and got away around 9 a.m. Time en route was 7 hours, 58 minutes. A front had passed through over night and I had rain showers for departure. I flew two hours through heavy rain and turbulence and had to pull power twice to control airspeed. However, weather was good at destination. While at Honiara, I took a three-hour tour of the local area.

Saturday, July 16, my destination was Cooliangatta, with a stop at Brisbane for clearances. →

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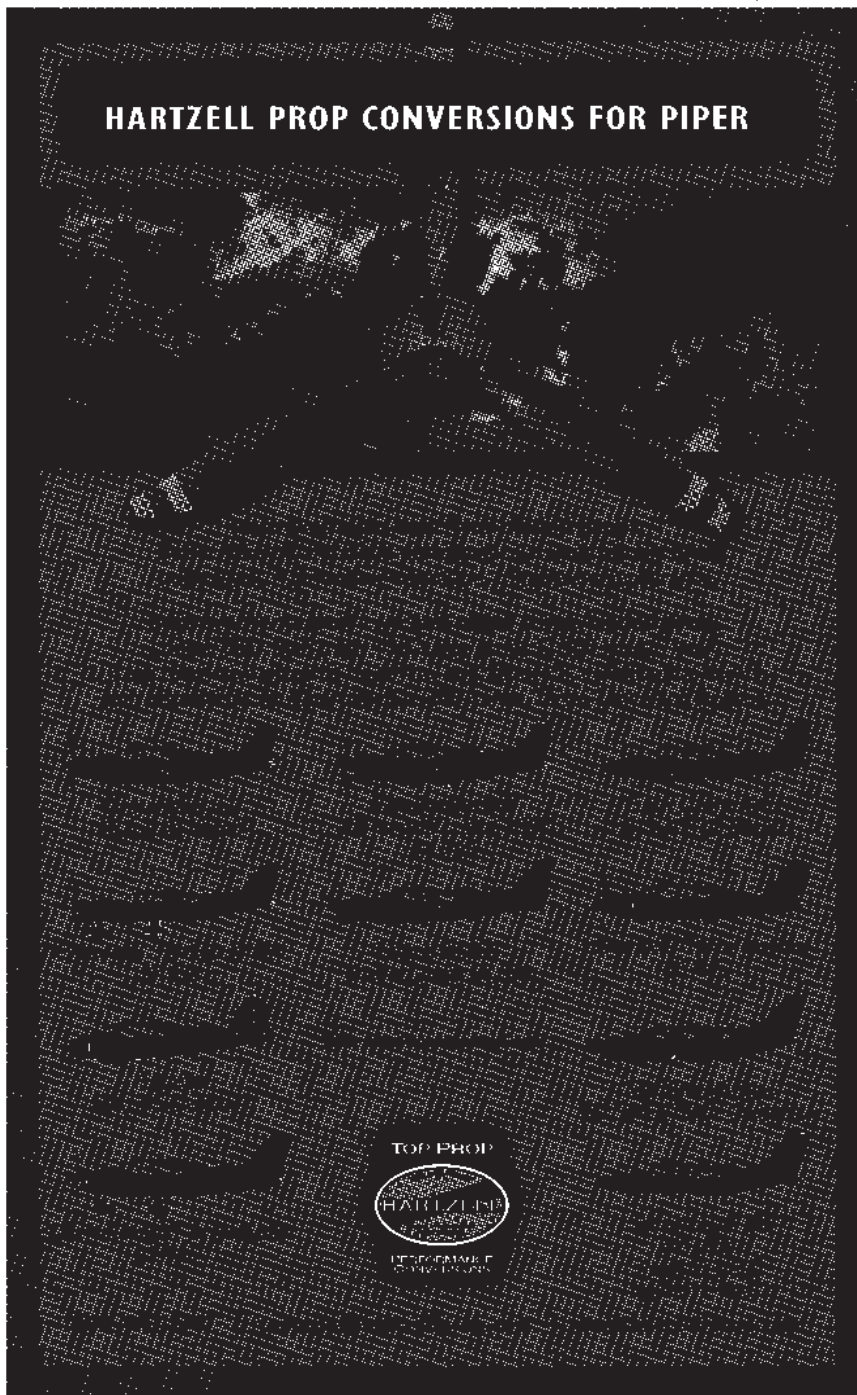
SA4008NM Modify the existing metal battery box. See photo. →



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After departing Honiara and cleared to en route frequency, I was unable to communicate with any ground station for five hours. Finally, I worked Nadi in Fiji Islands and they stayed with me to Brisbane. Time en route was 7 hours, 42 minutes.

Handling agent, Quantas Airways, was very efficient and had me out of Brisbane in one hour. The sun was just setting at 1700L as I departed for Coolingatta. Time en route was 28 minutes. After landing, the hardest part of the trip was finding the parking area.

At Coolingatta, I checked the aircraft and had to replace one fuse and a bulb for rotating beacon. After the Congress, I departed Friday, the 22nd, for Cairns. Weather was good and proceeded VFR up the coast at 8,500 to 10,000 feet. Time en route was 5 hours, 19 minutes. A two-night stay and I was on my way to Darwin, a direct flight across very desolate country and Gulf of Carpentaria. Time was 5 hours, 41 minutes.



Two nights in Darwin and I was on my way to Singapore Seletar – 1,810 miles. This leg took me over many islands of Indonesia and part of Borneo. I recrossed the Equator into north latitude. After encountering strong headwinds for two hours, I changed altitude and picked up 20 kts. Time en route was 12 hours, 48 minutes. I stayed three nights and while there changed oil and filter.

Friday, July 29, I departed Singapore for Madras and was delayed by the controllers, who would not accept my flight plan. My track took me up the slot between Sumatra and Malay Peninsula. My handling agent made several phone calls before the departure route was accepted. The slot took 650 miles of the 1,570-mile leg, then across the Bay of Bengal. This was not an easy trip, as communications were flat for 8 hours and weaved through a front for an hour with 35 kts., on the nose. After getting clear of the front, winds decreased to 20 kts. I arrived Madras between intermittent

rain showers and time en route was 12 hours, 16 minutes. After arriving, it took two hours to get cleared in, even with help from my handling agent.

Monday, Aug. 1, I left Madras for Bahrain. India was engulfed in monsoon rains. My pictures from Jeppesen showed I would be in the clear about two-thirds of the way along my 1,846 miles. Things did not work out as planned. I had strong headwinds up to 52 kts., for over three hours. After departure, groundspeed at one point dropped to 95 kts. I could not get the planned airspeed, I was not in heavy rain but there was no horizon the whole leg.

I kept thinking I would run out of this weather, but it continued for the whole journey. I was able to get my planned airspeed of 160 kts., nine hours into the trip.

Winds gradually decreased to 15 kts., after 10 hours. This set back my arrival time by more than two hours, and made this leg 13 hours, 52 minutes my longest. There was a

satisfaction that at no time was I concerned about fuel endurance – arriving with close to four hours on board. I was challenged by ground control four hours before landing that I did not have permission to land at Bahrain. I had to dig through my papers and come up with dates and when issued, before I got word back that landing permission was approved. The landing two hours after dark was the end of my hardest trip.

I felt terrible – my head ached, and my eyes were sore from constant instrument scanning. After landing, I got off the runway and say for about 10 minutes with my landing lights still on because I didn't know where to taxi. Finally, a vehicle with a rotating light came to me and did a 180-degree turn. I followed for about three miles past many wide bodies to the area for itinerant aircraft. Fortunately, there was very little delay getting cleared in.

Aug. 4, I departed Bahrain for Luxor, Egypt. This leg was a little less than 1,000 miles and took →

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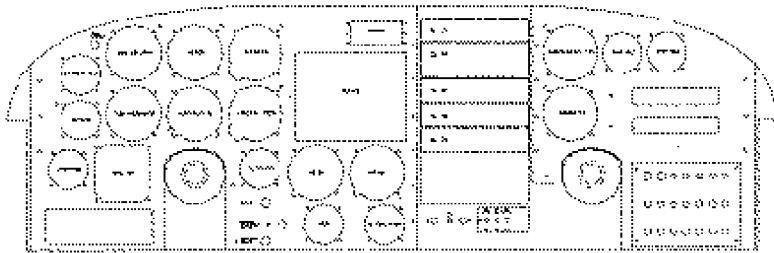


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me across the center of Saudi Arabia. Flying at 8,000 to 10,000 feet was a simple airway operation. With the heat from the desert, the ride was rough and the yellow haze extended above my flight level. On arriving in the Luxor area, I had the coordinates for Luxor VOR in the computer and not the airport. As they were about six miles apart, I could not locate the airport. I spent 20 minutes looking finally realized my error and inserted correct numbers which brought me to my destination. I stayed three nights. This helped my clear up a head cold, which developed from excessive air conditioning in the hotels. I stayed at a nice hotel on the Nile.

Sunday, Aug. 7, I was picked up by my handling agent and proceeded to the airport. When I got to the aircraft, I found an armed soldier standing guard over my Comanche. I had not asked for this, but was surprised. Fueling and flight planning was completed for departure to Rhodos. This journey was a short leg of 684 miles – 4 hours, 57 minutes. While at Rhodos, I pulled my battery and serviced it with water, which it needed. Fuel was very expensive – about \$6.50 per gallon and took a minimum amount of fuel for the next leg to Rome Ciampino.

I departed Aug. 9 for Rome. Time en route was 5 hours, 40 minutes. I made most of the journey at 8,500 feet, than over Italy I was dropped to 3,000 feet. A little later I was dropped to 1,000 feet over water. My track took me inland with 3,000-foot hills in front of me, so I climbed to 4,000 feet. Controllers said for me to go to 1,000 feet. I said I was not going down as it would run me into the hills. So they gave me an IFR clearance to my destination at 6,000 feet and set up for an ILS approach. Clearing in was quickly accomplished.

Then I was confronted with a \$50 US cab fare to my hotel. I forgot my camera so there were no pictures. And I wasn't going back for it.

I was very unhappy with Rome. My hotel was crowded and cramped and the streets were either uphill or



downhill. I had planned to stay five nights, but with things being the way they were, I advised my handling agent I was leaving after two nights. I had the same cab fare of \$50 US back to the airport. Fuel also was expensive at \$6.33 per gallon. So I took the minimum required for the next leg to Palma.

This was a short leg of 519 miles, time was 3 hours, 57 minutes. I had a 30-kt headwind most of the way at 3,500 feet. I made this leg VFR, but did not have special VFR arrival instructions. The tower was very hostile. Although I was paying \$150 per day at the hotel, the water was sulfurous and not fit to drink. I had to buy bottled water. I stayed three nights for resting purposes, but considered this place over exploited and not a good vacation destination. Fuel here was \$4.84 per gallon. While it was expensive, it was less than the cost in Rome. But I had to top up the tanks for the ocean hop.

Sunday, Aug. 14, I departed for Santa Maria, Azores. My route took me across Spain and Portugal. I entered Spain at Valencia and exited Portugal close to Lisbon. Then I flew a straight shot of 781 miles to Santa Maria. Weather was good with light winds. I fueled on arrival and decided to go the following day to St. Johns, Newfoundland. It was easy to get cleared in and the hotel was comfortable.

Although I had planned a Monday departure, when I got my weather, St. Johns was marginal with 35-kt headwind. I cancelled my departure. The next day, the front that was sitting over the northeast United States had moved further east and was showing 70-kt winds over one-third of my route. Another cancellation.

I started out at 9,000 as this was the lowest altitude allowed for 200 miles to clear the Azores area. Then down to 8,000. Five hundred miles from destination, the headwinds increased to 40 kts. I went down to 6,000 and still it was 40 kts. This continued until 75 miles out. Then the headwinds decreased to 20 kts. For landing, winds were gusting to

25 kts. Time en route was 9 hours, 37 minutes. I had my aircraft hangared for the first time, as I feared for the safety of my machine. Clearing in and getting to my hotel was just a formality.

Next day, Thursday, Aug. 18, weather to Bangor was overcast and rain with 40-kt., winds. I had three hours on the gauges and 250 on arrival. Time en route was 5 hours, 38 minutes. Here I had some maintenance done. I had the extra tanks taken out, oil and filter changed, and some repair work on one radio.

Saturday, Aug. 20, I departed for Ft. Myers with good weather, but hazy. Being confined to wing tanks only, I made a stop for fuel at Richmond, Va. Time en route was 4 hours, 2 minutes. The last leg was typical southern weather. I ran through heavy turbulence and build-ups for 2 1/2 hours. Over Florida, there was more detouring and my ETA was delayed. I arrived in good weather to a red carpet welcome by

the media, family and many friends. My time of 5 hours gave me my lowest reserve of fuel to end my "Around the World" flight.

The trip described here was accomplished with careful planning and safe flight procedures – at the ripe age of 82. ✈️

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# From the Tribe Chiefs

Date	Tribe	Event/Location	Info Source/Host
March 6	NC	No-Host Lunch Fly-in Muskegon, Mich. (MKG)	Brownstone in Terminal
March 12-14	SW	Carson City, Nev. (CXP)	Larry Rackley (775) 883-3173
March 19-21	SC	Fredericksburg, Texas (T82)	Butch Baker (940) 683-4540
March 20	NC	No-Host Lunch Fly-in Jackson, Mich. (JXN)	Don's in Terminal
April 3	NC	No-Host Lunch Fly-in Cleveland, Ohio	Hornblowers at west end of Terminal Bldg
April 2-5	Europe	Gloucester, UK	E-mail: flyin@jimbalmers.plus.com or call +44 1285 650094
April 15-17	SE	Treasure Cay, Bahamas	Ken Rivard (321) 453-6700 or e-mail silkie1@bellsouth.net
April 17	NC	No-Host Lunch Fly-in Mansfield, Ohio	Flying Turtle Cafe
May 1	NC	No-Host Lunch Fly-in Muncie, Ind.	Vince's in Terminal
May 15	NC	No-Host Lunch Fly-in Cincinnati, OH	Sky Galley in Terminal
May 29	NC	No-Host Lunch Fly-in Janesville, WI	CAVU Cafe
June 11-13	SC	San Antonio, Texas	Butch Baker (940) 683-4540. E-mail is butchb@ntws.net
June 12	NC	No-Host Lunch Fly-in Jackson, Mich.	Don's in Terminal
June 24-28	Europe	Sienna, Italy	Ben Ayalon at benjamin.ayalon@virgin.net or call +44 1707 394540
June 26	NC	No-Host Lunch Fly-in Lake Geneva, Wis.	Newport Grill
June 26-27	SW	Santa Maria, Calif. (SMX)	Pat Rowe (805) 934-2123
July 10	NC	No-Host Lunch Fly-in Cincinnati, Ohio	Sky Galley in Terminal
July 24	NC	No-Host Lunch Fly-in Cleveland, Ohio	Hornblowers at west end of Terminal
Sept. 14-19	MS	ICS Annual Convention (MKC)	www.ics-kansascity2004.com
Aug. 27-30	Europe	Amsterdam, Netherlands	Ben Ayalon at benjamin.ayalon@virgin.net or call +44 1707 394540



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# From the Tribe Chiefs

## North Central Tribe

### No Host Lunch Fly-Ins

Greetings from your Tribe Chief Bernie Mazurek, Assistant Tribe Chief Keith Flowers and Treasurer/Secretary Dorothy Meadows.

"No Host" luncheon fly-ins at airports with a restaurant on the airfield are scheduled. Refer to the table for details. Plan to arrive at 11:30 a.m. LOCAL time (weather permitting) and enjoy a leisurely lunch with other Comanche friends on a regular basis.

If you know of other airports that have restaurants on the airfield, please e-mail [bmazurek@aol.com](mailto:bmazurek@aol.com) and they will be added to the schedule. The plan is to meet for lunch "on your own" every two weeks at different airport restaurants.

Our thanks to Pam Schield for sending in the restaurant recommendations for May and June.

### North Central "No Host" Luncheon Fly-Ins

DATE	DAY	LOCATION	AIRPORT	RESTAURANT	TIME
03/06/04	Saturday	Muskegon, MI	MKG	Brownstone in Terminal	11:30 EST
03/20/04	Saturday	Jackson, MI	JXN	Don's in Terminal	11:30 EST
04/03/04	Saturday	Cleveland, OH	BKL	Hornblowers at West End of Terminal Bldg.	11:30 EST
04/17/04	Saturday	Mansfield, OH	MFD	Flying Turtle Café in Terminal	11:30 EDT
05/01/04	Saturday	Muncie, IN	MIE	Vince's in Terminal	11:30 EST
05/15/04	Saturday	Cincinnati, OH	LUK	Sky Galley in Terminal	11:30 EDT
05/29/04	Saturday	Janesville, WI	JVL	CAVU Café	11:30 CDT
06/12/04	Saturday	Jackson, MI	JXN	Don's in Terminal	11:30 EDT
06/26/04	Saturday	Lake Geneva, WI	C02	Newport Grill	11:30 CDT
07/10/04	Saturday	Cincinnati, OH	LUK	Sky Galley in Terminal	11:30 EDT
07/24/04	Saturday	Cleveland, OH	BKL	Hornblowers at West End of Terminal Bldg.	11:30 EDT

## South Central Tribe

### March 19-21 Fredericksburg, Texas (T82)

Staying for a weekend in the "Hangar Hotel" in the German town of Fredericksburg, Texas will be an "experience." Based on Fredericksburg's early aviation and rich military past, a recreation of an Old WW II military hangar, familiar to many aviation and history buffs has opened at the Gillespie County Airport (T82) in Fredericksburg, Texas. All the quest rooms have the décor and furniture of the WW II period. The hotel provides food "Ration Stamps" with each check-in (redeemable at the "Airport Diner") to

provide guests a breakfast of their choice at their leisure. Of interest to everyone will be landings and takeoffs and the air traffic viewed from the hotel "Observation Deck." There is an "Officer's Club" where guests can relax and visit in the evening. A "South Pacific" atmosphere further compliments the Hotel.

Besides staying in the "Hangar Hotel," you can enjoy the town of Fredericksburg and its rich German heritage and culture. With more than 150 shops, galleries, boutiques and emporiums, shopping is a main attraction. There is an historical museum and the Nimitz Museum that will provide information regarding early flight and WW II activities in Fredericksburg and the surrounding area. Plus, there are plenty of sausages, bratwursts, and apple strudels to eat. Come and enjoy!

The Hotel is saving a block of 15 rooms until Feb. 19. The spring is an extremely busy time in the Texas hill country and we encourage you to make your reservations early. The discounted rate to us is \$115. The phone number to make reservations is (830) 997-9990. Be sure and mention ICS for the discount rate. Registration is \$15 per person and due by March 15. Mail to Butch Baker, 1216 Butterfield St.,

Bridgeport, TX, 76426. Please make checks to ICS-SCT. Phone number is (940) 683-4540. E-mail [butchb@ntws.net](mailto:butchb@ntws.net).

There will be a tribe meeting to elect new officers at Fredericksburg. If the weather is a problem, the meeting will be held at the Port Aransas fly-in.

### June 11-13 San Antonio, Texas

South Central will be hosting a fly-in in San Antonio the second weekend in June. We

will be staying in the historical Menger Hotel. Established in 1859, the hotel is truly elegant. There are historic photographs and memorabilia in glass cases in the main lobby. These include pre-1900 photographs of the original registration desk, the Victorian lobby and other interesting facts about this grand hotel. It is located across the street from the Alamo. For a closer look at the hotel, look on the Web site: [www.HistoricMenger.com](http://www.HistoricMenger.com). We have been given a rate of \$89. After arriving Friday afternoon, we will go to the river walk for dinner.

Saturday morning we will go to the also historical Guenther House for breakfast. This is the home of Carl Himar Guenther, the founder of Pioneer Flour Mills. It was built in 1860 and has been restored →



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by the company and welcomes visitors as a museum, restaurant and retail store. It is located on a bend of the San Antonio River, at the foot of King William, one of the oldest historical districts in Texas. The entire top floor is referred to as the Roof Garden, a spacious, airy, former ballroom, with an adjoining open terrace over looking the river. We will have breakfast on the Roof Garden, tour the museum, and can shop at The San Antonio River Mill Store. The store offers gourmet baking mixes, custom stoneware, cookware and other gift items. For more information on The Guenther House look on their Web site: [www.guentherhouse.com](http://www.guentherhouse.com).

Continuing on our historical weekend, we will go to the Buckhorn Saloon & Museum. This has been in continuous operation since 1881. The history of this world famous establishment is an important part of the story of San Antonio. It was voted "2002 Best Attraction" by the Downtown Alliance/San Antonio. For more information go to the Web site: [www.buckhornmuseum.com](http://www.buckhornmuseum.com).

Saturday afternoon the group will be on their own to go to the Alamo, shop on the river walk, or partake of the many other attractions in downtown San Antonio. Saturday evening we will ride the trolley to Market Square for dinner at Mi Tierra Café & Bakery. This restaurant is known as the restaurant that never sleeps. It is open 24 hours a day 365 days a year.

The registration will be \$42 per person. This will include transportation, breakfast at the Guenther House, and entrance to the Buckhorn Saloon & Museum.

Arrangements have been made to use San Antonio Aviation, Inc., at Stinson Municipal (SSF). The FBO will give our group a discount on fuel and waive the parking fee with fuel purchase.

The hotel is holding 15 rooms until May 11. For reservations call (800) 345-9285 or (210) 223-4361.

Let them know you are with the International Comanche Society for the \$89 rate.

Send registration to Butch Baker at 1216 Butterfield St., Bridgeport, TX 76426. Make checks out to ICS-SCT. Phone number is (940) 683-4540. E-mail is butchb@ntws.net.

## Southeast Tribe

April 15-17, 2004

Treasure Cay

Abaco Island, Bahamas

Back by popular demand, the Southeast Tribe is arranging another fly-in to Treasure Cay. Everyone enjoyed the fly-in last year and has asked for more of the same. We are still in the planning stages as far as trips, dinners, etc., are concerned.

Judi and I are renting a large beach-side home about one mile from the hotel. Last year everyone brought food and we had dinner at the house Friday and Saturday nights. Judi coordinated the meals by phone with all participants before we left Florida. Our home will be open and available throughout the fly-in, so if you want, you can spend your days walking the beach, swimming or snorkeling.

Thursday night is pizza night at the hotel's Tiki bar by the pool, which we hope everyone will enjoy. Last year we took a 60-foot yacht on Friday to Guana Cay for lunch, swimming in the two salt-water pools and socializing at Nippers Bar & Restaurant. The food was superb, the atmosphere terrific and we had a beautiful view of the Atlantic Ocean. We may be able to arrange this again. A 15-passenger bus is available for a trip to Marsh harbor marina and downtown area for shopping and lunch on your own. It is about a 40-minute ride and costs \$15 per person. The approximate cost for the three days will be \$600 for two people.

We will fly in to Treasure Cay Airport ( MYAT ) on Thursday, clear customs, take a cab (at \$14 for two) to the hotel which is located about seven miles from the airport and check in at 12 noon. This is the off-season for the hotel. Room rates for three night stay at \$98, deluxe at \$112, deluxe suites at \$182 and two-bedroom suites at \$238.

If you can arrange it, try to get a room overlooking the marina as it is a nice view. Accommodation rates quoted are based on single or double occupancy, subject to availability, tax at 10 percent and service charge at \$1.50 per person, per night. Rates include a complimentary welcome drink voucher per person on arrival.

Rooms have two twin beds or a king bed, mini refrigerators, toaster, coffee maker, cable TV, phone, A/C, hair dryer, and ironing board. They have indicated they would give us one room with a complimentary upgrade for the hospitality room. The hotel has a large dining room and a Tiki bar by the pool. Within less than a quarter mile you have a convenience store, small grocery store, at least four gift shops, a bakery and →



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ice cream store, golf cart, scooter, bike and boat rentals, and a lovely white sand beach several miles long. There is only one restaurant in Treasure Cay, and it's at the hotel. Other restaurants out of town will come and pick up diners when called.

Phone contact for Treasure Cay Resort Hotel & Marina in Ft. Lauderdale is (800) 327-1584. Ask for Carrie Blair or Lynn June. (Web site is [www.treasurecay.com](http://www.treasurecay.com)). The direct phone to the hotel is (242) 365-8801.

If coming from the north you can land at Spruce Creek (7FL6) with fuel at \$2.15 per gallon, or Massey

Air Ranch (X50) with fuel at \$2.18 per gallon. Coming from the south you have Okeechobee (OBE) with fuel at \$1.95 per gallon. Check Web site [airnav.com](http://airnav.com). You will have to pay a \$15 per person departure fee from the Bahamas.

You only need life jackets to be legal to fly to the Bahamas. For Bahamas customs, you will need a picture ID (drivers license) and voters registration. For you return to the United States you will need either a passport or a birth certificate for customs.

For more information, please

contact Ken Rivard (321) 453-6700 or e-mail [silkie1@bellsouth.net](mailto:silkie1@bellsouth.net).

## Southwest Tribe

### March 12-14 Fly-In to Carson City, Nev. (CXP)

For more information, contact Larry Rackley, (775) 883-3173.

### June 26-27 SW Tribe Annual Meeting at Santa Maria, Calif. (SMX)

For more information, contact Pat Rowe, (805) 934-2123.

## Europe

### April 2-5 Gloucester, UK

This event will be hosted by Jacquie and Jim Balmer and Barry Walker. There will be a one-day technical seminar in Barry's hangar (sight-seeing/shopping for the more cultural-minded). One day is designated to see the beautiful Cotswolds.

Please contact [flyin@jimbalmer.plus.com](mailto:flyin@jimbalmer.plus.com) or call +44 1285 650094 or fax : +44 1285 642873.

### June 24-28 Siena, Italy

This fly-in will be hosted by Ben Ayalon.

We will spend three full days exploring Siena and its surroundings. The region of Tuscany is well known and sought after by travelers who enjoy its wealth in history set in a mellow and peaceful countryside.

Please contact [benjamin.ayalon@virgin.net](mailto:benjamin.ayalon@virgin.net) or call: +44 1707 394540 or fax: +44 1707 392575

### August 27-30 Amsterdam, Netherlands

This event will be hosted by Ben Ayalon.

We will visit an Air Museum, sail the canals of Amsterdam, tour the dykes and region to the north of Amsterdam and visit a replica of a ship used by the "East India Company."

Please contact [benjamin.ayalon@virgin.net](mailto:benjamin.ayalon@virgin.net) or call: +44 1707 394540 or fax: +44 1707 392575

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Extra Thick.....	RH or LH (3/16")	123.80	153.36	153.36
STC'd One Piece Conversion.....	3/16" or 1/4"	288.90	346.68	346.68
<b>Pilot Windows</b>				
Thick.....	(1/8")	86.40	103.68	103.68
Extra Thick.....	(3/16")	92.70	111.24	111.24
STC'd (with frameless Vent).....	(1/4")	100.80	120.96	100.80*
<b>Vent Windows</b>				
Thick.....	(1/8")	19.50	23.58	23.58
Extra Thick.....	(1/4")	22.50	27.00	27.50*
<b>Pilot Window Assy w/ Vent &amp; Piper style Hinge</b>				
Thick.....	(1/8")	198.00	237.60	237.60
Extra Thick.....	(3/16")	223.20	267.84	267.84
STC'd (with frameless Vent).....	(1/4")	247.50	279.00	247.50*
STC'd (with frameless Vent).....	3/16" or 1/4"	237.60	285.12	285.12
<b>Door Windows</b>				
Thick.....	(1/8")	62.10	71.52	71.52
Extra Thick.....	(3/16")	74.70	89.64	89.64
STC'd (with frameless Vent).....	(1/4")	87.30	104.76	87.30*
<b>Door Window Assy w/ Vent &amp; Piper style Hinge</b>				
Thick.....	(1/8")	198.00	237.60	237.60
Extra Thick.....	(3/16")	223.20	267.84	267.84
STC'd (with frameless Vent).....	(1/4")	247.50	279.00	247.50*
STC'd (with frameless Vent).....	3/16" or 1/4"	237.60	285.12	285.12
<b>(4 window models)</b>				
Rear Window.....	RH or LH (1/8")	53.10	63.72	63.72
Thick.....	RH or LH (3/16")	55.80	66.96	66.96
(replaces inner & outer windows) RH or LH (1/4")		63.00	75.60	63.00*
<b>(6 window Models)</b>				
Elimin Windows.....	RH or LH (1/8")	55.80	66.96	66.96
Thick.....	RH or LH (3/16")	63.00	75.60	75.60
(replaces inner & outer windows) RH or LH (1/4")		76.50	91.80	76.50*
Rear Window.....	RH or LH (1/8")	44.10	53.07	53.07
Thick.....	RH or LH (3/16")	56.70	68.04	68.04
(replaces inner & outer windows) RH or LH (1/4")		69.30	83.16	69.30*
<b>Landing Light Lens Right or Left</b>	(.080")	29.70	N/A	N/A

\*Prices reflect a 10% discount for Comanche Members & 25% discount on 1/4" gray side windows.

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## Featured Fly-In

# Southeast Tribe Enjoys 25th Annual New Year's Celebration



The Southeast Tribe's 25th annual New Year's party this year was at River Ranch Resort, Fla. This is also the site of the first annual New Year's celebration by the Southeast Tribe.

Many of the pilots have changed in 25 years, but the flying spirit and hilarity of the occasion was thoroughly enjoyed by all. Some of the ladies turned into "pink" ladies by donning pink T-shirts from River Ranch. A plaque was given to outgoing tribe chief, Skip Dykema.

We had perfect weather and cheap fuel, too. ✈️



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*All Ads must be submitted in writing only (fax or E-mail OK). Free ads may not be placed by phone. First 25 words are free. Extra words are \$0.40 per word. Fax (405) 491-0325 E-mail: icsadmin@keytech.com*

**For Sale:** 1966 PA30 5th & 6th seats Good Condition- (304) 343-6937 (phone & fax) fouga@charter.net (email) .....3/2

**Wanted:** Service Manual, Will trade PA-30/39 service manual for a PA-24 service manual Hugh Hunton hughhangar@earthlink.net .....3/2

**For Sale:** 400 Propeller HC-A3MVK-4/MV8433-7, MV MOD - no A/D's 375 hrs SMOH, over \$20,000 new from Hartzell. with log book \$8,500. ....3/2

Power Setting Table for **IO-540-D4A5** lycoming in a **1967 PA24-260B** Serial # 4615, N-9135P. According to Piper, this engine was not in a Comanche. My engine log book dated 3-8-67 gave her a 50hr check. I put in an Arapaho windshield by Knots 2U. When the plane was returned to me, the power setting table was lost and could not be found. I am hoping someone in the society has an injected engine that is close to mine that could send me a copy of their power chart. Dale W. Adams (406) 765-1338 .....3/2

**For Sale:** Navajo Rams Yokes, \$750 Pair. Matt (239) 643-6944 or MKURKE@SWFLA.RR.COM .....1/2

**For Sale:** Custom Nacelle Tanks 20 gal / side, Complete. Add 40 Gal of fuel for only \$2895. Call or Email Dr. B (352) 394-2152 or cbbutts@earthlink.net .....1/2

**For Sale:** TWIN COMANCHE PARTS: 1 450-386 Paralleling Relay (new), 1 450-385 Regulator (used but good), 1 763-893 Aileron Rib Reinforcement Kit, 2 RAM Control Wheels; one with trim & mike switch, 1 part catalog, 1 service manual, 1 PA30 Multi Engine Fling Instruction Notebook \$400.00 for all Robin (615) 373-0594 .....1/2

**For Sale:** Comanche 250 cowl w/air filter, battery comp door, seat. O-540

spinner and backing plate, crankshaft counterweights. O-360 backing plate. Sigma Tech AI, RC Allen DG, King 209 w G/S, Airtex ELT 110-4, ARNAV 5000 IFR Loran complete, anti-collision light, Narco Com II, Prestolite starter, Nav antenna splitter. Contact rewalker1@charter.net or 817-578-3369 .....1/2

## PA24-180

**1959 PA24-180:** 4500 TT, 1300 SMOH, 300 STOH, 160 SPOH. KLX-135 GPS. AT-150 encoded transponder.

*Classified advertising rate:  
40 cents per word per issue.  
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Anti-glare, one piece windshield, 3/16" side windows, 8 in / out. EI digital center stack panel with fuel flow. \$50K. gester@echoweb.net ..1/2

**1961 PA24-180:** Exceptional opportunity immaculate '61 180 by 2nd owner 33 yrs. TT 4050, 50 hrs madors & prop McCauley, Drag reduction mods tops 185 mph, full IFR & autopilot \$68,000 (360) 266-0028 .....1/2

## PA24-250

**1958 PA24 - 250:** N5143P TT 4570 SMOH 576 IMRON paint 1/4 glass New annual-- aircraft eng. Florida hangared \$59,000 all AD' (863)676-1899 jimlesagesr@msn.com .....3/2

**1964 PA24-250:** SN 24-3686, N8451P, 3800TT, 670 Factory OH, 3 Blade McCauley, 1/4 glass, 1pc windscreen, Garmin IFR Certified 430 COM / NAV / GS Color Moving Map, King 155 COM / NAV / GS, 2 King GS/VOR Indicators, STEC 55 Autopilot with GPS Steer, King 62 DME, 76A Transponder, Marker Beacons, JPI Engine Analyzer, Dual AI (Vacuum & Electric), Digital Tact, New Fiberglass Glare Shield with FAA approved instrument panel lights, New Interior / upholstery with pilot & passenger seat sheepskin seat covers, New Cabin sound & heat insulation, metro wing tips, 90 gal fuel, digital clock, 4 place intercom IFR Certified 10/1/03, Annual 3/1/04, CD ROM parts & maintenance manuals. Best offer over \$95,000. Email jimraija@earthlink.net. tel. 520-575-8165 .....1/2

**1969 PA24-260C** Factory installed longrange tip tanks, King KMA24, Two King KX 170B's KR86 ADF, King KT76A Transponder, ACK30 alt encoder. Panel mounted intercoms. Fresh VSI, alt,Ai, hdg indicator, turn coordinator, fresh annual, and fresh prop. Pitot-static cert current but due May 04. All engine hoses replaced, new electrical fuel boost pump total airframe 4100hrs. Total engine 797 hrs. Asking \$114,000 (914) 232-2869 SF34 driver@aol.com

## PA24-260

**1969 PA24 - 260C:** 2755 TT, 45 SMOH in June of 2003, with Superior Millennium Cylinders, Propeller and all firewall forward accessories also overhauled. This is truly a choice C model. You know the specs. Too much to list. Selling 3 co-ownership shares for \$32,000 each share. A great way to co-own an airplane. Individual, not a broker. Based in



Cincinnati at I69 (Sporty's) but somewhat flexible as to future base. Call or email Dave (513) 553-2529, djhenry@fuse.net .....3/2

**1967 PA24-260B:** S/N 24-4483; 2715TT, 67 SMOH, Prop all A-D's complied with, KMA 24 audio panel, KN 64 DME with remote readout, 2-KX155's with KI 208 and K1209, Century 2000 with altitude preselect, WX8 3M stormscope, apollo 618 loran coupled to autopilot. NARCO ADF, Standby vacuum system, TXP w/mode - C, extra soundproofing, tinted windows, 1/4" glass, push to talk and elec. Trim Switch on yolk, Hamilton Vertical Card compass, Davtron DVOR, New vacuum pump 7/31/97, Dynamic prop balanced 7/18/00, 6 velour seats, long range fuel tanks (90 gal), hard wired for direct plug in to handheld radio, no damage history hangared, excellent condition, call (231) 941-1740, Ask for Kent.....1/2

## PA30 / PA39

**1967 Twin Comanche B:** 1850TT, 10SPOH, No Damage All logs Indiana based. MIZD KT-76, ADF G/S Hangared out of License (570)748-0820 /3760 fax .....3/2

**1966 PA30B:** TT 7800, SMOH 1700/1207, SPOH 1022/1812. KX170B w/ ILS, MAC 1700 Nav/Com, Garmin 150 VFR GPS coupled to autopilot, KMA 20 Audio Panel, Narco AT50A Transponder, King KR 85 ADF, Piper "Altimatic II" autopilot with alt. hold, "Insight" Strikefinder, Dual PTT, Sigtronics 4 place intercom with audio input. LoPresti nose bowls/Hubba Hubba covers/rudder gap seal. Alternators, GAMI injectors, March '03 annual (all compression 76/80 or better), stabilator inspected, all AD's complied with. Heater overhauled in 1995, small nose tire. Top/bottom/tip strobes, "Preciseflight" pulse lights, polished spinners and props, one piece windshield, stainless steel screw kit, super soundproofing, lightweight starters and copper cables. Six seats and tip tanks. New paint in 1995 (8), blue cloth interior (7), custom Kennon cover and interior sun shades. This beautiful plane has been owned and flown by Mike Rohrer of Altus Aircraft Repair since 1998 and meticulously maintained by him since 1996. If you want a quality plane with no surprises when your first annual comes around, take a look at this one. We are only selling due to new baby and need bigger plane. The price has been reduced to

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**1967 Twin Comanche B:** 1850TT, 10SPOH, No Damage All logs Indiana based. MIZD KT-76, ADF G/S Hangared out of License (570)748-0820 /3760 fax.....3/2

**1966 PA30B with tip tanks:** TT 3860, L&R eng. 1136 SMOH, left prop 48 SMOH, right prop 953 SMOH. 8 inside & out one piece tinted windshield and heavy tinted glass. Framless Pilot Vent, Small Nose Wheel, Heavy Baggage Strut. UPS GX-50 approach certified GPS, ARNAV STAR3500 VFR GPS, NARCO 12D-360 trans with ILS, BENDIX T12-C ADF digitally tuned, ALTIMATIC II auto pilot with electric trim (works great), Intercom, Avionics Master Swtich, Belly Strobe, 12 volt Cabin Jack. Oct 03 annual. \$98,500. Tom Field (817) 465-5014 or tomstress@comcast.net .....3/2

**Exceptional 1967 PA 30 B / 39:** C/R, TT2626, TSOH L/R 1052/1054. Second owner, always hangared, original documents & logs. Current Digital Avionics, King & Apollo. Apollo GX50 IFR cert for Approach. Tip tanks. For pictures and complete information visit [www.caregiversdirectory.com/airplane](http://www.caregiversdirectory.com/airplane) or call Jack Hirn (847) 683-4979 email [jdjh@nhds.net](mailto:jdjh@nhds.net).....3/2

**1971 PA39 S/N 91:** TTSN 2,709 L&RE 987SMOH (WEBCO), L&RP 341 SMOH (New Blades), Best on the Planet! - Too many extras to list! A++ Paint / New all leather seats / GPS with 2 moving maps \$160,000. Fax (850) 456-4094 For Spec. Sheet and Telephone Number.....3/2

**1969 PA-30C:** 2131 TTSN, 231 SMOH's, 87 SPOH's, new everything, hangared at home, a super nice, very low time, no surprises airplane, on Flyer cover 8/03, white, blue, silver, new gray leather interior, none nicer, make offer, photos & detailed specs (239) 691-0521 .....2/2

**1966 Twin Comanche:** Robinson STOL, low time 3204 hours, always hangared, 6 seats, nice paint, well maintained, GPS, Morrow Loran, \$85,000, C/A (661) 327-0258.....1/2

**1966 PA30:** TT 3430, SMOH 1300, SPOH 315, counter rotating engines, King radios, Loran, WX900 stormscope, Century 2000 A/P, PS 4 place intercom, front shoulder harness, Whelen strobes, and other extras. Nice interior, hangared at KTYIS, excellent condition, NDH, always well maintained. If you are looking for a PA30 you should look at this one. \$82,500 obo. (865) 974-5250, (865) 671-3832 or (865) 482-8883.....1/2

**1965 Piper PA-30 Twin Comanche:** Like New Twin Comanche, Same Owner 30 years, NDH, Always Hangared! 5883TT. IO-320, 440/440 hrs SMOH. Counter rotating props, 162/162 Hrs SPOH. King KY 197 Nav/Com, King KY 170B Nav/Com, King KR87 ADF, King KN64 DME, King KLN89B GPS w/slaved HSI, Argus 3000 Moving Map, Stec 60 Auto Pilot, Intercom System, Counter Rotating Conversion, ICS, Digital Fuel Flow Meter, Electric Trim, Tip Tanks, Alternator Conversions, One Piece Windshield, Custom T Instrument Panel (Fully Updated), 4 headsets, Fire Extinguisher, Model 35 Power Tow Included. Perfect Logs, ADLOG Maintenance system. All ad's completed, with fresh annual 6/03 Gorgeous paint and Interior! New in 1997! Plastic and Side Panels in Excellent Condition, Carpet & Headliner like new, all glass very clear. Light Gray with Blue and Dark Gray Striping. Interior rated 9, Seats are Gray and Blue with Dark Gray Carpet. \$110,000 Located in Haydon, ID to view complete specs and photos please visit <http://www.totalperformanceaircraft.com/aircraftdetail.asp?DocumentID=19>

**PIPER TWIN COMANCHE 1965:** European Based. TTAF 5687 TTE 861/50 SMOH. Props Dec 2000. Recent annual. Fully airways, Garmin 195, Autopilot, Fuel computer, tape player, inflatable door seals, Janitrol heater. 150 Knots at 60L/HR. \$60,000 Tel: 00357 2595 3091 or email [flyingdays@cytanet.com.cy](mailto:flyingdays@cytanet.com.cy) ... 3/2

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Pictured left are some of the Travers staff at the Columbia, MO airshow. Staff includes Darla Sanford who joined Travers in 1980, and Mary Bixon who joined Travers in 1989.

Also pictured are customers Lee Maples, Mustang owner and Ed Schmidt, Baron Aviation/ Fed-Ex Operator.

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